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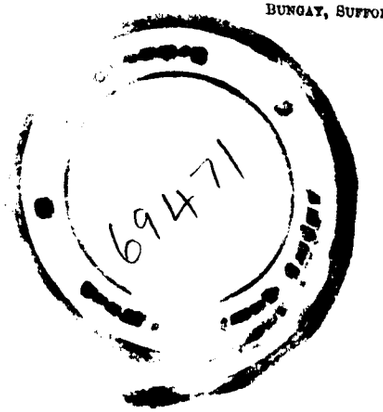
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THE ECONOMIC JOURNAL

MARCH 1954

NOTICE BY THE EDITORS

SINCE the end of the War there has been, not only in the United Kingdom but throughout the world, an unprecedented growth in the number of those who are engaged in teaching and research in economics. This growth has had corresponding effects upon the volume of articles for publication that is reaching the editors of all journals, including the ECONOMIC JOURNAL. Far more work of high quality is being written than can in present circumstances possibly find outlets.

We have given careful thought to what the ECONOMIC JOURNAL can do to meet these changed conditions. We shall continue, as opportunity offers, to enlarge the size of issues and to print more articles in each issue. But to that there are various practical limitations. We believe that a better solution can be found if articles are on average somewhat shorter than they have been in the past. Almost every manuscript that reaches us is too long for publication in its original form. Even after abbreviation, twenty-five of the eighty-seven articles that have been published during the past three years have run to twenty pages or more—twelve of them to twenty-five pages or more. We regard the desirable length of an article as being in general not more than fifteen pages, and we believe that in the great majority of cases an article of this length will enable the author to present his ideas to our readers in as full detail as is necessary, and at as great length as, in these days when so many articles need to be studied, *most of our readers will wish to read.* We suggest that a great deal of work will be saved, both to authors and to editors, if authors will plan their articles from the first on the assumption that only in exceptional circumstances should they exceed fifteen pages, and in the knowledge that preference will be given to shorter articles.

There is another factor governing the selection of articles to which we would refer. We regard it as both inevitable and proper that in some cases authors should wish to present their work and results with the added precision that mathematical argument

affords. But we believe that many of our readers regret the increasing growth of a linguistic barrier between themselves and such authors. In choosing between articles, the editors must take account of the size of the audience that a particular article can hope to reach, and give some preference in each issue to those authors whose writing is intelligible to a reasonable proportion of our readers. We suggest that authors should aim at avoiding the use of advanced mathematics, except where it is necessary for supplying a rigorous proof, or where the nature of the subject inevitably requires it. In all cases authors should—we would further suggest—state both their assumptions and their conclusions in ordinary economic language, and should also aim, whenever possible, at presenting the main stages of their arguments in such terms.

R. F. H.
E. A. G. R.
R. C. O. M.

SUPPLY FUNCTIONS IN KEYNESIAN ECONOMICS

ONE of the most puzzling elements in Keynesian economics s the nature of the supply function and its place in the macro-conomic system. Small wonder that several attempts have een made in current literature to comment on this question. hese comments, however, are to some extent contradictory: he result has been that different concepts of supply are presented n Keynesian economics as it now stands.

This paper is intended to present a critical examination and omparison of some of these supply functions in Keynesian conomics.[1] Of course, this purpose obliges us to devote con-iderable space merely to summarising the positions of some uthors on the subject, in order to make our own argument more eadily comprehensible.

The fourteen points which I have to make are presented in he form of so many italicised "Propositions." These Proposi-ions together form a summary of this article: therefore, no eparate "Summary" is appended.

§ 1. A SIMPLIFIED KEYNESIAN MODEL

The core of Keynesian Economics is the Principle of Effective)emand. This Principle may be summarised in the widely nown graph of Fig. 1, which runs in real units, so that by efinition it holds good that

$$Y = p \,.\, Y_r \quad . \quad . \quad . \quad . \quad . \quad . \quad (1.1)$$

/here Y = money national income, p = the general price level nd Y_r = real national income.[2]

The simplified Keynesian model of Fig. 1 represents two ndependent and mutually consistent equations:

$D_r = D_r\,(Y_r)$ macro-economic real demand equation (1.2)

$D_r = Y_r$ 45°-line . . . . . (1.3)

[1] I wish to acknowledge my indebtedness to Professor Don Patinkin of erusalem and to Mr. R. F. Harrod of Oxford, both of whom have been kind nough to supply me with many valuable suggestions relating to the contents nd composition of this paper. However, these two gentlemen are in no way esponsible for any defects that may appear in the argument. My thanks go lso to the Rev. H. H. Hoskins of Bushey, Herts, and to Mr. N. E. Osselton of roningen, who kindly inspected my English.

[2] Keynes chose to work with "wage units." Though I agree with the opinion n this point recently expressed by J. R. Hicks, *A Contribution to the Theory of e Trade Cycle*, Oxford, 1950, Ch. II, it is not a matter on which I wish to rpatiate in this paper.

Since there are also two variables, viz., D_r and Y_r, the model is determinate. Point E represents the Point of Effective Demand: it determines real national income ${}_EY_r$, which in its turn determines employment N_E *via* the production function $Y_r(N_E, \overline{K}_r)$, where $\overline{K}_r$ represents the stock of real capital in the economy.

Since Keynesian economics is essentially short-run economics, $\overline{K}_r$ is a given magnitude.

For $Y_r = {}_EY_r$ it holds good that

$$S_r = I_r \ (=BE) \quad . \quad . \quad . \quad . \quad . \quad (1.4)$$

where S_r = real savings and I_r = real investments; this equation represents a necessary and sufficient equilibrium condition.

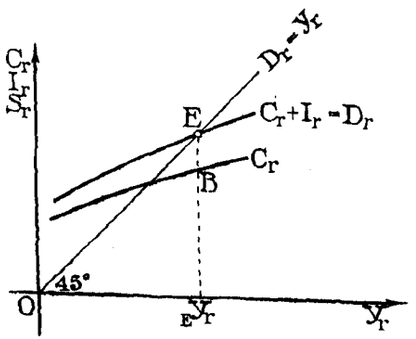


FIG. 1

The Principle of Effective Demand.

Symbols:

C_r = real consumption expenditures;
I_r = real investment expenditures;
D_r = total real expenditures, $D_r = C_r + I_r$;
S_r = real savings;
Y_r = real national income;
${}_EY_r$ = real national income determined by Effective Demand.

It strikes one that in Fig. 1 no supply curve is plotted,[1] whilst the model is none the less "complete" in the strict meaning of "determinate."

Real national income—and therefore employment—seems to be determined by a one-sided demand theory: thus by something *à la* von Böhm-Bawerk. Apparently we are to think of Keynes as a kind of "macro-economic Austrian economist."

[1] This fact is in accordance with the contents of two widely known summaries of Keynesian economics which had Keynes's own blessing; see A. P. Lerner, "Mr. Keynes' 'General Theory of Employment, Interest and Money,'" *International Labor Review* for October 1936, reprinted in *The New Economics*, ed. S. E. Harris, New York and London, 1948, pp. 113–32, and R. F. Harrod, "Mr. Keynes and Traditional Theory," *Econometrica* for January 1937, reprinted in *The New Economics*, pp. 591–605. In neither article is a supply function introduced.

§ 2. The Patinkin Supply Curve

Precisely the latter point was made some years ago by Don Patinkin.[1] I feel obliged to summarise his argument as briefly as possible and only in so far as I need it for the purpose of my own exposition; afterwards this summarised part of his contribution will be examined critically.

Patinkin's criticism of "traditional Keynesian economics" is that two problems have remained unsolved. In the first place the supply side of the system has been neglected, and in the second place the concept of involuntary unemployment has not

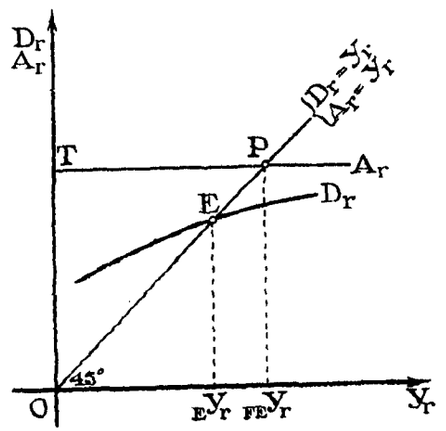


FIG. 2

The Patinkin Supply Curve $A_r(Y_r)$.
This curve is drawn here exactly horizontal.

been defined in Fig. 1—neither quantitatively with respect to the amount of unemployment, nor qualitatively with respect to the problem why this unemployment should be called "involuntary."

Patinkin solves these two problems together at a blow by means of introducing a supply function—*i.e.*, A_r in Fig. 2—which he characterises as "the aggregate desired-supply curve"; for the sake of brevity, I suggest calling it "the Patinkin Supply Curve." The function depicted by this curve is obtained by adding up all entrepreneurial micro-economic Walrasian supply functions; it is something like a horizontal—or perhaps some-

[1] Don Patinkin, "Involuntary Unemployment and the Keynesian Supply Function," ECONOMIC JOURNAL, LIX (1949), pp. 360–83, with an unpublished "Mathematical Appendix," referred to in that article on p. 366 n. The article will be referred to as "Involuntary Unemployment," the appendix as "Mathematical Appendix."

what increasing—line.[1] The Patinkin Supply Curve intersects the 45°-line at point P in Fig. 2. Analytically, the model of Fig. 2 runs as follows: [2]

$$D_r = (Y_r, p) \quad \text{demand behaviour equation} \quad (2.1)$$
$$A_r = A_r(Y_r) \quad \text{supply behaviour equation} \quad (2.2)$$
$$D_r = A_r \quad \text{equilibrium condition} \quad (2.3)$$
$$Y_r = A_r \quad 45°\text{-line} \quad (2.4)$$

There are four mutually independent equations and also four variables (D_r, A_r, Y_r, p); but, as Fig. 2 shows, the equations need not be mutually consistent; if they are not—as in the case of Fig. 2—the equilibrium condition will not be fulfilled: the model is indeterminate. In the latter case, point E will be relevant: point P will not be reached.

The economic significance of this inconsistency of the model is in the first place that entrepreneurs are not on their behaviour equations; this means by definition that they do not act "freely," in the economic sense: their desired-supply A_r is larger than their actual time rate of turnover D_r. The result of this fact will be a downward pressure on the price level p. According to the classical outlook as this is interpreted by Pigou,[3] the fall of p will cause the D_r-curve in Fig. 2 to shift in an upward direction until points E and P coincide, that is, until the model is no longer indeterminate. According to Keynes, on the other hand, price elasticity of demand will probably turn out to be too small for any fall of p—provided the price level be reasonably flexible, which is, however, generally not the case—ever to push up point E as far as point P. If effective demand is not enlarged by other expedients, such as, *e.g.*, deficit spending, the model will remain inconsistent. The Patinkin Supply Curve in Fig. 2 is therefore a convenient device for comparing classical with Keynesian economics.

[1] In his "Mathematical Appendix," Patinkin points out that special assumptions must be made to obtain this result. However, since these assumptions are not relevant to my further argument, they need not bother us here. Moreover, Patinkin himself writes that the form of the curve is not very important: the one thing which is important is the fact that the curve $A_r(Y_r)$ does exist, and that its slope with respect to Y_r is smaller than that of the curve $D_r(Y_r)$. That A_r is (nearly) horizontal follows from the fact that economic theory does not show that the time rate of desired supply of entrepreneurs depends on national income; but since D_r does depend from Y_r, the slope of A_r must necessarily be smaller than that of D_r.

[2] Patinkin, "Mathematical Appendix," p. 6.

[3] For a convenient graphical analysis of Pigou's position see Don Patinkin, "Price Flexibility and Full Employment," *American Economic Review*, XXXVIII (1948), pp. 543–64, reprinted, with some modification, in *Readings in Monetary Theory*, ed. by F. A. Lutz and L. W. Mints, London, 1952, pp. 252–83.

The importance of this device is, according to Patinkin, still further enhanced, since he attributes a second aspect to its economic meaning. Patinkin states [1] that there is full employment if Y_r is so large that suppliers can supply exactly as much as they desire, *i.e.*, OT in Fig. 2. This means that point ${}_{FE}Y_r$ represents the full-employment level of real national income: ${}_{FE}Y_r - {}_{E}Y_r$ is therefore a quantitative measurement for unemployment. Moreover, this unemployment can now be qualified as "involuntary," since suppliers do not act "freely": they are not all of them on their behaviour equations. In this way the difficulties which Patinkin ascribed to "traditional Keynesian economics" seem to be overcome.

So far we have only been summarising the trend of Patinkin's argument. Let us now see whether his solution is valid.

I think that Patinkin's statement that ${}_{FE}Y_r$ represents the full employment level of real national income implies a jump in the argument. He has obtained his "desired-supply function" A_r by adding up the Walrasian supply functions of all individual entrepreneurs: however, there seems to be no reason why entrepreneurs should "desire" self-evidently to engage all workers available at the prevailing wage-rate. In other words:

PROPOSITION I: *The difficulty involved in the model of Fig. 2 is that it purports to discuss full employment and involuntary unemployment—which are characteristics of the labour market—without explicitly including the labour market in its analysis.*

It is not very difficult to fill up this lacuna. In order to do this, we should start with the supply curve of labour (curve II in Figs. 3 or 4). If $A_r = {}_{FE}Y_r$ represents the full employment level of real national income, then the value of A_r is the value of Y_r in the production function

$$Y_r = Y_r(N, \bar{K}_r) \quad (2.5)$$

(where N = employment and $\bar{K}_r$ = stock of real capital of firms, which is a given magnitude), which value is obtained if the value of the *supply* function of labour

$$N = N_{FE}(w, p) \quad (2.6)$$

for any given set of w = wage level and p = general price level, is substituted into equation (2.5).

Therefore A_r now represents the time rate "people" *desire* to supply (in real terms) at a given set of w and p, the stock of real capital being given. "People" here means suppliers of

[1] Patinkin, "Involuntary Unemployment," section 9, p. 370.

finished goods plus workers; the supply curve of finished good obtained in this way—which we may call "the Reinterprete Patinkin Supply Curve"—is, of course, fundamentally differen from the familiar one which is implicit in the conventional theor of the *firm* only.

The A_r-curve intersects the 45°-line again at point P; th

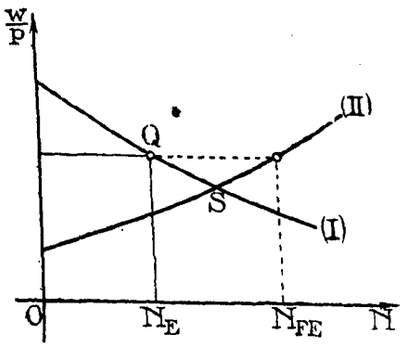


FIG. 3

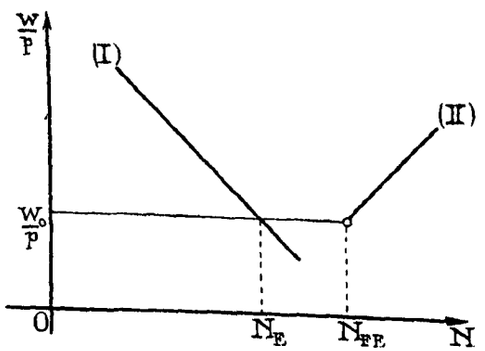


FIG. 4

(I) = demand curve for labour.
(II) = supply curve for labour.

ordinate through P meets the horizontal axis at a point $_{FE}Y_r$. This point $_{FE}Y_r$ now indeed defines the full-employment leve of real national income, as was required by Patinkin.

Quantitatively unemployment is now sharply defined b the interval $_EY_r$ $_{FE}Y_r$. Qualitatively, this unemployment i involuntary, since not all "supplying people"—especially no

[1] The Reinterpreted Patinkin Supply Curve may or may not be horizonta It will be horizontal in so far as w and p $\left(\text{or } \frac{w}{p}\right)$ remain constant with increasin Y_r. The problem whether real or money wages are relevant in Keynesia economics will not be discussed here.

the workers—are on their behaviour equations (*i.e.*, their Walrasian supply equations), as can readily be seen from Fig. 3, where point Q is not on the supply curve.[1] But this applies also to the more typical case of Fig. 4, where a number of N_EN_{FE} workers are not on their behaviour equations.

§ 3. The Keynesian Supply Function: Dillard's Interpretation

PROPOSITION II: *Patinkin's complaint that the supply side of the system would have been neglected in traditional Keynesian economics is not legitimate. In the first place, Keynes himself combined an "Aggregate Supply Function" Z(N) with his*

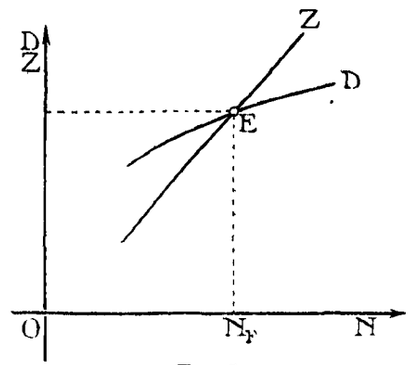


FIG. 5

Dillard's graphical presentation of the Keynesian "Aggregate" Demand and Supply Functions.

"Aggregate Demand Function" D(N); and their point of intersection—which is the point at which the entrepreneurs' expectation of profits will be maximised—is the point of effective demand, giving the volume of employment.[2]

Now this passage in Keynes is not very lucid, since it fails to define very sharply *how* this pair of functions is supposed to determine effective demand. It seems therefore that any attempts to comment upon this question must necessarily contain an element of speculation as to Keynes's own intentions. Such an attempt is made by Dillard.[3]

He plots the two functions in a graph—see Fig. 5—and assumes

[1] See also L. R. Klein, *The Keynesian Revolution*, New York, 1947, pp. 74, 37 and 203.

[2] J. M. Keynes, *The General Theory of Employment, Interest and Money*, London, 1936, pp. 25 *et seq.* The magnitudes $D = D(N)$ and $Z = Z(N)$ are expressed in money terms; we define here $D = p \cdot D_r$ and $Z = p \cdot Z_r$.

[3] D. Dillard, *The Economics of John Maynard Keynes*, New York, 1948, pp. 30 *et seq.* Italics in the subsequent quotation are added.

that each of them slants up toward the right. The point of intersection, E, is the point of effective demand.

His verbal interpretation of the two concepts is as follows. "The aggregate demand 'price' for the output of any given amount of employment is the *total* sum of money, or proceeds, which is expected from the sale of the output produced when that amount of labor is employed." The curve D represents the aggregate demand function. "A certain minimum amount of proceeds will be necessary to induce employers as a whole to offer any given aggregate amount of employment. This minimum price or proceeds which will just induce employment on a given scale is called the aggregate supply price of that amount of employment." The curve Z represents the aggregate supply function. Some pages further on Dillard declares that the aggregate supply price is the same as the total costs of entrepreneurs.[1] Hence, we may now write:

$$F = Z(N) \quad . \quad . \quad . \quad . \quad . \quad . \quad (3.1)$$

where F represents aggregate total costs.

Dillard also says that at the point of effective demand E entrepreneurs maximise their expected profits. But evidently this is not possible in the Dillard version. For in E it holds good that:

$$D = F \therefore D - F = 0 \quad \therefore$$
$$\therefore \quad P = 0 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3.2)$$

i.e., that in E entrepreneurs' net profits P are exactly zero, whilst for lower values of N the value of P is positive. Hence:

PROPOSITION III: *The Dillard version of the Keynesian Aggregate Supply and Demand Functions cannot possibly yield an exact picture, since the condition that profits are at their maximum at the point of intersection of the two curves is not fulfilled, though this is required by Keynes*[2] *himself and also by Dillard.*[3]

Dillard seems not to have noticed this inconsistency: he does not speak about it anywhere.

There is an easy way out of the difficulty involved by Dillard's interpretation: this way has been pointed out by the Belgian authors Pinxten and Declerq.[4] In order to do full justice to their position, it may be useful to remind the reader of the ambiguity of the term "aggregate" in economic literature. As a matter

[1] Dillard, p. 37.
[2] Keynes, *General Theory*, p. 25, middle of page.
[3] Dillard, p. 32.
[4] K. Pinxten and G. Declerq, "De effectieve vraag, kernstuk van Keynes' General Theory" (*Effective Demand, Core of Keynes's General Theory*) in the Dutch monthly *De Economist*, XCIX (1951), pp. 721–35, especially p. 728.

of fact, questions of merely verbal terminology are seldom relevant. However, even such a point can become important if it seems to be the source of a pitfall in economic reasoning. At first sight, it does not seem impossible that this may be the case here, and it seems worth while therefore to analyse the term "aggregate." This term is used in two different senses:

(1) The Robinsonian sense,[1] where "aggregate cost" is related to "marginal cost," since "marginal" cost is the first derivative of "aggregate" cost with respect to output. Mrs. Robinson opposes her concept of "aggregate" cost to "total" cost, where total cost means the sum total of fixed and variable cost. "Aggregate" and "total" cost may coincide, but they do not necessarily do so; this follows from the fact that one may write:

aggregate fixed cost + aggregate variable cost = aggregate total cost.

(2) The Keynesian sense, where "aggregate" means the same as "macro-economic": the "aggregate" demand function is the sum total of all micro-economic demand functions.

It is certain that Keynes had "macro-economic" demand and supply functions in mind when he spoke of "aggregate" functions: he used the term in the second sense. That he chose to use the word "aggregate" for this concept is, of course, merely a matter of taste—however, I shall not follow him here, since Mrs. Robinson had already used the word with another meaning. But did Keynes also use it simultaneously in the "Robinsonian" meaning?

Dillard thinks so, but we have seen that on his hypothesis the condition that profits are at their maximum at the point of intersection of the two curves is not fulfilled (see Proposition III). So I come to a new Proposition which I take from Pinxten and Declerq.

§ 4. THE KEYNESIAN SUPPLY FUNCTION: PINXTEN AND DECLERQ'S INTERPRETATION

PROPOSITION IV: *Dillard's interpretation of the Keynesian* D- *and* Z*-functions should be modified: the condition that profits are at their maximum at the point of intersection of the two functions*

[1] Joan Robinson, *The Economics of Imperfect Competition*, London, 1933. In the theory of the firm, she is very careful to distinguish "aggregate cost" from "total cost" (pp. 134 and 48, respectively, of her book). One might well plead for an imitation by other authors of this very useful terminological precision, since it has proved to be very convenient for students.

will be fulfilled only if these macro-economic functions are interpreted in a marginalistic sense.

This Proposition implies that the Robinsonian sense of the term " aggregate " does not apply here : only the first derivatives of Dillard's D- and Z-curves with respect to N are relevant. Let us call these curves the D'- and Z'-curves. I suggest that the Z'-curve may be called, verbally, " the Pinxten and Declerq Supply Function."

PROPOSITION V : *The idea of Pinxten and Declerq that nevertheless the diagram of Fig. 5 can be left unchanged is, however, not generally valid : the behaviour of the Pinxten and Declerq Supply Function should generally be depicted as in Fig. 6.*

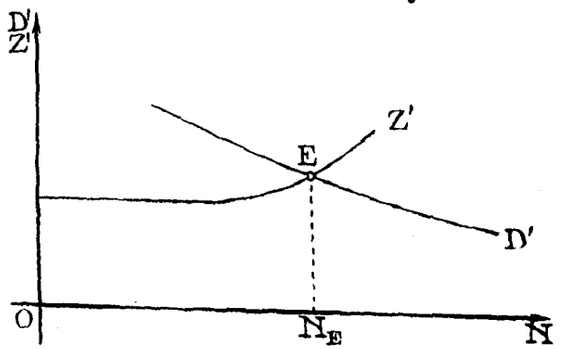


FIG. 6

A new graphical representation of the Pinxten and Declerq macro-economic Demand and Supply Functions.

Indeed, assuming for the sake of simplicity that factor cost involves only labour cost, the Pinxten and Declerq Supply Function can be written as follows :

$$Z'(N) = \frac{d(wN)}{dN}(N) \quad . \quad . \quad . \quad . \quad (4.1)$$

In the special case of depression-economics, where w is assumed to remain constant over a certain range of low values of N (see also Fig. 4), this becomes :

$$Z'(N) = w(N) \quad . \quad . \quad . \quad . \quad . \quad (4.2)$$

This fact is represented in Fig. 6, where Z' is horizontal for low values of N.

§ 5. THE KEYNESIAN SUPPLY FUNCTION : FALLACIES IN THE INTERPRETATIONS BY DILLARD AND PINXTEN AND DECLERQ

It is clear that the Pinxten and Declerq Supply Curve and the Reinterpreted Patinkin Supply Curve are not identical : the one

is not even a transformation of the other. This may readily be seen if we transform the one so that it can be plotted against the other in one and the same system of co-ordinate axes : the two curves do not then coincide. The curve F_r in Fig. 7 depicts a transformation of the Pinxten and Declerq Supply Curve of Fig. 6 inserted into the system of Fig. 2. Some commentary on Fig. 7 may follow here—but let us first of all agree upon a *strictly* Robinsonian use of the term " aggregate " in the subsequent text, in order to avoid confusion. (I repeat, that the attachment of just this meaning to this term is mainly a matter of taste and, up to a point, a matter of convenience.) Therefore, the word " macro-

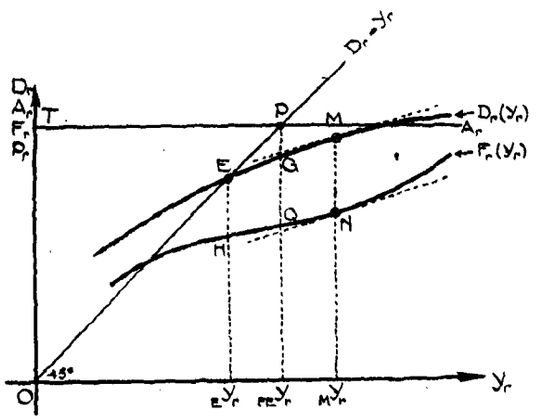


FIG. 7

A Comparison of Some Concepts of Supply in Current Keynesian Economics.

economic " will in the subsequent commentary be substituted for " aggregate " in the Keynesian sense. Figs. 2 and 6 have one common feature, *i.e.*, the macro-economic demand curve. However, this demand curve is drawn in each diagram in a different way : first, Fig. 6 runs in money terms, whilst Fig. 2 runs in real terms ; secondly, real national income is measured along the horizontal axis of Fig. 2, whilst employment is measured along that of Fig. 6 ; thirdly, the macro-economic demand curve of Fig. 6 is a *marginal* demand curve, whilst that of Fig. 2 is an *aggregate* demand curve. The latter point means that the easiest transformation procedure is obtained if we do not start from Fig. 6 but from Fig. 5 : it is easy to see that $D_r(Y_r)$ in Fig. 2 is a transformation of $D(N)$ in Fig. 5, since Y_r is a function of N (see the production function (2.5)), and since $D = p \,.\, D_r$.

$Z(N)$ in Fig. 5 may in a similar way be transformed into a

curve within the cadre of Fig. 2. The latter curve should be the picture of an equation

$$Z_r = Z_r(Y_r) \quad . \quad . \quad . \quad . \quad . \quad . \quad (5.1)$$

It follows from equation (3.1) that in the Dillard version $F_r = Z_r$, where F_r stands for macro-economic aggregate real cost; hence (5.1) may be rewritten as follows :

$$F_r = Z_r(Y_r) \quad . \quad . \quad . \quad . \quad . \quad . \quad (5.2)$$

which implies the inverse of the macro-economic production function : (5.2) is a macro-economic aggregate (factor) cost function in real terms. We need not concern ourselves here about the empirical behaviour of that function; [1] let us simply draw it as the curve F_r in Fig. 7. One thing, however, is clear : there is no reason why F_r should entirely coincide with the Re-interpreted Patinkin Supply Curve A_r in Fig. 2, which curve is copied in Fig. 7. In abandoning Fig. 6, we lose the Pinxten and Declerq point of effective demand depicted in it (point E in Fig. 6); it now becomes necessary to allow in Fig. 7 for the condition of maximal extrepreneurial profits in a different way; this is done by means of a pair of parallel tangents to the D_r-curve (in point M) and to the F_r-curve (in point N). Point ${}_MY_r$ in Fig. 7 now represents the value of real national income where entrepreneurial profit expectations are at their maximum : this point is analogous to point N_E in Fig. 6.

It strikes one that the points ${}_MY_r$ and ${}_EY_r$ in Fig. 7 do not necessarily coincide. In other words :

PROPOSITION VI : *The Point of Effective Demand, defined by Pinxten and Declerq* (see point E in Fig. 6 and point M in Fig. 7) *is not identical with the Point of Effective Demand or National Income as this is determined by the equality* S = I, *according to Keynes himself*, e.g., *on pp. 64 and 84 of the* General Theory (see point E in Fig. 1, where $S = I$, *i.e.*, point E in Figs. 2 and 7).

Here is a case of trespass against the *principium identitatis*. If this proposition be accepted, then the conclusion must necessarily follow that one of the two definitions of the Point of Effective Demand must be erroneous. Since we have already noted in § 1 that the two widely known summaries of Keynesian Economics by Lerner and Harrod concentrate fully upon point E in Figs. 1, 2 and 7, and that they do not introduce any Supply Function,[2] it is on the surface that we should expect to find an

[1] Nor do we allow for the special assumptions introduced by Don Patinkin in his " Mathematical Appendix," as has been pointed out before.

[2] The same point applies, *e.g.*, to Klein's *Keynesian Revolution*.

error leading to the conclusion that point M in Fig. 7—*i.e.*, point E in Fig. 6—should be a definition of the Principle of Effective Demand.

Closer scrutiny reveals that the latter argument, which stems from Pinxten and Declerq and—one step farther back, as we have seen—even from Dillard, does indeed involve fallacies. Keynes rightly says on p. 77 that " the volume of employment (and consequently of output and real income) is fixed by the entrepreneur under the motive of seeking to maximise his present and prospective profits," and on p. 55 he informs us that the entrepreneurial profit is due to the macro-economic demand function " taken in conjunction with the conditions of supply "; but these correct statements do not necessarily imply that the point of intersection of macro-economic marginal demand and Pinxten and Declerq supply functions, depicted by point E in our Fig. 6, where the *sum total* of *all* entrepreneurial profits is assumed to be at its maximum, must be the point which is actually reached in this way by entrepreneurial actions (as Pinxten and Declerq do, however, state to be the case). Or :

PROPOSITION VII : *In familiar marginal analysis it is assumed that every individual firm endeavours to maximise its own (micro-economic) profits, but this assumption does not necessarily imply—in the short run, at any rate—that the sum total of all expected profits* (i.e., *macro-economic profits*) *must also be assumed to be at its maximum.*

The validity of this proposition may very briefly and comprehensively be suggested by means of two simple instances, both of them implying heroic abstractions.

First, consider a closed economy with only two firms A and B forming together a heteroduopoly (a duopoly with heterogeneous, *i.e.*, differentiated, products). Both duopolists will aim their strategies at maximising micro-profits. It is conceivable that A makes a move on the economic chess-board which makes A better and B worse off than before, since buyers go over from B to A. Let us assume that in the meantime real national income Y_r remains constant. Now it by no means follows that macro-profits—*i.e.*, the sum total of A's micro-profits and B's micro-profits—have not changed either. The result may very well be that macro-profits have risen, since the increment of A's micro-profits has been larger than the fall of B's micro-profits. Whether or not this result will be achieved depends from the situation and curvature of the micro-economic cost curves of A and B respectively. But whether or not the result mentioned

above comes about, micro-profits of A and B are at their maximum *in the given situation* both *before* A made his move and *since* that time. It follows that maximum values of micro-profits at a given level of Y_r and a given distribution of demand over A and B do not at all imply that macro-profits at the same level of Y_r are also at their maximum: a shift of demand from B to A may cause macro-profits to rise.

Secondly, let us assume that in a closed economy every firm belongs to one of two industries A and B, both producing final products, while the market situation in each industry is pure competition. Let us label the sum total of the micro-profits of all firms in any one industry the semi-macro-profits of that industry. Now within any one industry i ($i = A, B$) micro-profits and semi-macro-profits of i move up and down jointly in the short run when demand for i's product rises or falls.

The distribution of macro-economic demand over A and B is in this case, where we have assumed pure competition, not influenced by entrepreneurial strategies: it is merely determined by consumers' scales of preferences, which in their turn are determined by consumers' taste patterns, prices of A and B products respectively and micro-economic money incomes. Let us assume consumers' taste patterns to be constant; changes in consumers' scales of preferences are then determined by changes in prices and money incomes only—that is, by micro-economic real incomes only. Since the distribution of national income among households is a function of the level of national income, we may regard consumers' scales of preference as determined by the level of real national income Y_r (consumers' taste patterns being given). That is, the distribution of macro-economic demand over A and B is a function of Y_r; this function must be regarded as stable, since we have assumed consumers' taste patterns to be constant.

Now, what will happen to the distribution of macro-economic demand if Y_r *is allowed* to rise continually, starting from a certain low value of this variable? The income elasticity of demand for A will generally not be the same as that of the demand for B. The demand for A may rise faster than that for B. With rising Y_r, semi-macro-economic profits in A and B may continue to rise, though perhaps not equally fast, and macro-economic profits will then continue to rise also.

If we assume as a special case that for very high levels of Y commodity B tends to become an inferior good, it is conceivable that the rise of the demand for B will gradually peter

out and that it even begins to fall with further rising Y_r. Up from $Y_r = {}_M Y_r$ the decline of B-profits may overcompensate the rise of A-profits, so that macro-economic profits begin to fall. Fig. 7 may be regarded as a picture of this special case; for $Y_r = {}_M Y_r$, macro-profits are at their maximum.

The important point which should be borne in mind is that during the entire rise of Y_r *micro*-profits are *everywhere and at any moment* at their maximum—a maximum which is for any individual firm conditioned by its demand and cost behaviour at that moment. It appears therefore that maximum values of micro-profits in no way imply a maximum value of macro-profits. This is exactly what Proposition VII states.

As a matter of fact, however, in the situation depicted by Fig. 7, real national income Y_r cannot rise as far as ${}_M Y_r$. Its equilibrium value is ${}_E Y_r$: point E is the point of effective demand, since it is the point of *monetary equilibrium*, while point M is not relevant. But even for $Y_r = {}_E Y_r$, micro-profits are at their maximum. Hence:

PROPOSITION VIII: *The Pinxten and Declerq version of the Principle of Effective Demand is fallacious: in the picture of Fig. 7, it assigns point* M *as the Point of Effective Demand, whilst in fact point* E *is the Point of Effective Demand. Point* M *is a useless concept.* In other words: Proposition IV is not relevant.

Thus the suggestion made by Pinxten and Declerq fails to rescue the Dillard version. Moreover, it must be conceded as an undeniable fact that Keynes himself uses his macro-economic concepts of D and Z in the *Robinsonian-aggregate* sense.[1] So far as this point is concerned, Dillard is certainly right (cf. the concluding paragraph of § 3), whereas Pinxten and Declerq are not. However, the result of accepting the latter conclusion is that the difficulty pointed out in § 3, viz., that profits in the Dillard version are exactly zero at point E in his diagram (*i.e.*, our Fig. 5), arises once more in its full sharpness. Closer scrutiny reveals that where Pinxten and Declerq have gone wrong is following Dillard in supposing that macro-economic aggregate supply price can be translated into macro-economic aggregate cost. Essentially the same error is made by A. H. Hansen, in *A Guide to Keynes*, New York, Toronto and London, 1953, p. 28. Dillard makes this statement[2] without chapter and verse; but

[1] See, for instance, pp. 29 and 44–5 of the *General Theory*.

[2] Dillard, p. 37: "Losses will result in either case because the proceeds received by entrepreneurs will be less than sufficient to cover the *total costs* (*aggregate supply price*) of the higher level of employment." Italics added.

in fact, Keynes contradicts it in the most explicit and lucid manner on p. 24, where he says quite definitely that by supply price he means "the expectation of *proceeds* which will just make it worth the while of the entrepreneurs to give that employment," [1] whilst he defines *proceeds* as "the aggregate income (*i.e.*, factor cost *plus profit*) resulting from a given amount of employment." [2] That is to say, by supply price Keynes means cost *plus profit*. Furthermore: "The entrepreneur's profit . . . is . . . the quantity which he endeavours to maximise": [3] we must therefore take macro-economic aggregate supply price as the sum total of micro-economic aggregate factor cost *plus* the sum total of micro-economic profits, where the latter are everywhere in the economy at their maximum, which is conditioned by the behaviour of demand and cost functions as seen by individual entrepreneurs.[4] This is the genuine meaning of the Keynesian Supply Curve $Z(N)$ in Fig. 5. In short:

PROPOSITION IX: *The Dillard version of the* Z(N) *function is erroneous, since it does not allow for the sum total of maximised micro-profits included in the genuine Keynesian Supply Function.*

Let us now focus once again point E in Fig. 5 when this point is taken in the genuine Keynesian sense, and let us try to translate it into the language of Fig. 7. We denote again aggregate factor cost by F and aggregate profits by P; we write the sum total of all maximised micro-profits which are conditioned by the micro-economic sales and supply functions at any moment as P^{max}.

In point E in Fig. 5 it holds good that

$$D(N) = Z(N) \quad . \quad . \quad . \quad . \quad . \quad (5.3)$$

that is, in Fig. 7:

$$D_r(Y_r) = Z_r(Y_r) \quad . \quad . \quad . \quad . \quad . \quad (5.4)$$

Since

$$Z_r \equiv F_r + P^{max}_r \quad . \quad . \quad . \quad . \quad . \quad (5.5)$$

we can rewrite (5.4) as

$$D_r(Y_r) = F_r(Y_r) + P^{max}_r(Y_r) \quad . \quad . \quad . \quad (5.6)$$

where $P^{max}_r(Y_r)$ is the sum total of all maximised micro-profits at the demand and cost conditions regarded as given by the entrepreneur under pure competition for *any* value of Y_r. The function $Z_r(Y)_r$ indicates the volume of Y_r which entrepreneurs will produce for any value of $Z_r \equiv F_r + P^{max}_r$. The problem is now how to draw the curve $Z_r(Y_r)$ in Fig. 7.

[1] Italics added. [2] Italics added. [3] Keynes, p. 23, bottom of page.

[4] I pass over in silence the difficulties involved in aggregation problems. It is, however, clear that Keynes's reasoning on pp. 24 *et seq.* is macro-economic, since he states that Say's Law is depicted by the entire coincidence of D- and Z-curves; this statement can only make sense if the circular flow in the economy as a whole is allowed for.

National income consists of incomes earned by factors of production *plus* profits. Following Keynes in defining national income net of user cost, and denoting entrepreneurs' *expectations* of real national income by Y^*_r, we may write:

$$Z_r(Y_r) \equiv F_r(Y_r) + P^{max}_r(Y_r) = Y^*_r(Y_r) \quad . \quad . \quad (5.7)$$

Now in a strictly static analysis it holds good that

$$Y^*_r = Y_r \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (5.8)$$

so that (5·7) can be rewritten as

$$Z_r(Y_r) = Y_r(Y_r) \quad . \quad . \quad . \quad . \quad (5.9)$$

i.e. the 45°-line. It follows that in a strictly static analysis the 45°-line in Fig. 7 is a transformation of the curve $Z(N)$ of Fig. 5. Hence:

PROPOSITION X: *The statement made by Dillard* [1] *that the 45°-line in (our) Fig. 7 is not the same as the aggregate supply schedule* Z(N) *in (our) Fig. 5, is not generally valid. In a strictly static analysis, they are indeed the same.*

The vertical distance between the 45°-line and the curve $F_r(Y_r)$ in Fig. 7 indicates entrepreneurial expected profits $P^{max}_r(Y_r)$. The latter function shows the volume of output Y_r—and thereby the volume of employment $N = N(Y_r)$—which entrepreneurs will supply at any value of P^{max}_r.

The function $D_r(Y_r)$ shows consumption expenditures *plus* investment expenditures made at any value of Y_r, *i.e.*, the proceeds which entrepreneurs will *actually* make at any value of Y_r. The vertical distance between the D_r-curve and the F_r-curve shows therefore the profits P_r which entrepreneurs will *actually* make at any value of Y_r. There can be equilibrium only when for some value of Y_r, $P_r = P^{max}_r$; this is however only the case for $Y_r = {}_E Y_r$ in Fig. 7. "Thus," writes Keynes,[2] "the volume of employment is given by the point of intersection between the aggregate demand function and the aggregate supply function; for it is at this point that the entrepreneurs' expectation of profits will be maximised." It is clear that Keynes meant here by "profits," micro-economic profits. Perhaps an easier formulation might have run as follows: ". . . for it is at this point that the entrepreneurs' expectation of actual profits equals their maximised expectation of profit." We may now conclude:

PROPOSITION XI: *Keynes's analysis in pp. 24–25, as depicted*

[1] Dillard, p. 35 n. [2] Keynes, p. 25.

in our Fig. 5, comes exactly to the same thing as the nowadays widely known graphical analysis by means of the 45°-line, as shown in our Fig. 1.

The curve $Z(N)$ of Fig. 5, interpreted as

$$Z(N) \equiv F(N) + P^{max.}(N) \quad . \quad . \quad . \quad (5.10)$$

can be called *The Genuine Keynesian Supply Curve*. The 45°-line of Figs. 1, 2 and 7 is essentially a transformation of this curve.

If the comment on Keynes given above is correct, Proposition II appears to rest on firm ground. It may be useful to show the validity of the latter Proposition also for the case of a generalised static Keynesian model.

§ 6. Supply Functions in a Generalised Static Keynesian Model

Several such models have been presented by various authors.[1] I shall take here the one constructed by Don Patinkin;[2] this will provide an opportunity to see what he has to say about his own supply function in the generalised case.

Patinkin presents a generalised Keynesian model of nine equations and nine variables. He divides up the economy into three markets, viz., the market of finished goods including services (consumption goods and investment goods), the labour market and the money market; and within each market he presents two behaviour equations (one for the demand side and one for the supply side, respectively) and an equilibrium condition, as follows.

Market of finished goods :

$$\left.\begin{aligned} D &= E(Y, r, p) \quad . \quad . \quad (6.1) \\ Y &= Y(N_E, \overline{K}) \quad . \quad . \quad (6.2) \end{aligned}\right\} \text{behaviour equations}$$

$$D = Y. \quad . \quad . \quad . \quad . \quad (6.3) \quad \text{equilibrium condition}$$

Labour market :

$$\left.\begin{aligned} N_E &= N_E\left(\frac{w}{p}\right) \quad . \quad . \quad (6.4) \\ N_{FE} &= N_{FE}(w, p) \quad . \quad (6.5) \end{aligned}\right\} \text{behaviour equations}$$

$$N_E = N_{FE} \quad . \quad . \quad . \quad (6.6) \quad \text{equilibrium condition}$$

[1] For instance, F. Modigliani, "Liquidity Preference and the Theory of Interest and Money," *Econometrica*, XII (1944), pp. 45–88, reprinted in *Readings in Monetary Theory*, ed. by F. A. Lutz and L. W. Mints, London, 1952, pp. 186–239; see especially p. 188. This model derives from the work of O. Lange and J. R. Hicks. Fundamentally the same model is used by L. R. Klein, "*The Keynesian Revolution*," p. 199.

[2] Patinkin, "Involuntary Unemployment," p. 379. This model comes to the same thing as those of Modigliani and Klein, as can easily be demonstrated.

Money market :

$$\left.\begin{aligned} M_D &= L(Y, r, p) \quad . \quad . \quad (6.7) \\ M_S &= \overline{M} \quad . \quad . \quad . \quad . \quad (6.8) \end{aligned}\right\} \text{behaviour equations}$$

$$M_D = M_S \quad . \quad . \quad . \quad (6.9) \quad \text{equilibrium condition}$$

The nine unknown variables are : Y = national money income, r = rate of interest, p = price level, D = time rate of total money expenditures on finished goods, N_E = volume of employment determined by effective demand (*i.e.*, labour demanded by entrepreneurs or suppliers of finished goods), N_{FE} = full employment (*i.e.*, labour supplied by workers), M_D = stock of money demanded (for active and idle cash-balances), M_S = stock of money supplied (*i.e.*, money in circulation), and w = money wage level.

Equation (6.2) implies the production function. Patinkin now writes that by substituting (6.4) into (6.2) we obtain (what he calls) *the familiar aggregate supply function* (or in the terminology of the present paper: *the familiar macro-economic supply function*); and he has kindly pointed out to the present writer that this is precisely the traditional supply function which is implicit in the conventional theory of the firm. Consider a firm manufacturing one product and having one input (labour), maximising its profits subject to the restraint provided by the production function. This gives us two equations: one stating that the real wage is equal to the marginal physical productivity of labour; and a second, the production itself. We now have two alternatives: we can leave these two equations as they are—and this is what Patinkin has done in his model (see equations (6.4) and (6.2)); or we can obtain the "Familiar Supply Function" by solving out the time-rate of output as a function of real wages—and this is done, essentially, by substituting the demand function for labour (6.4) into the production function (6.2), as was indicated above.[1]

[1] In the simple model of Fig. 7, the Familiar Supply Function is represented by the inverse of one of its two component parts, *i.e.*, the inverse of the production function in real terms; see curve F_r. When he was discussing his "aggregate supply function" on p. 25 of *The General Theory*, Keynes must, of course, have had in mind the traditional theory of the firm. We may remember that the F_r-curve in Fig. 7 is implied by the genuine Keynesian Z-curve in Fig. 5. We can say that both the Pinxten and Declerq Supply Curve and one component part of the Familiar Supply Curve are depicted by $F_r(Y_r)$ in Fig. 7. Their analytical meaning is none the less essentially different: while in the Pinxten and Declerq interpretation this curve is used in order to let the equilibrium value of Y_r be determined by the maximum of *macro*-profits, its "familiar" use involves just to let the equilibrium value of Y_r be determined by the equilibrium condition $P_r = P^{max}{}_r$.

But this argument is essentially a more refined reformulation of, for instance, the passages which I have quoted in § 5 from pp. 77 and 55 of Keynes's book. I think that we are now justified in formulating the following Proposition, which is intended to fortify Proposition II:

PROPOSITION XII: *Keynes's* General Theory *implies the Familiar Supply Function: this is the second reason why Patinkin's complaint that the supply side of the system is neglected in traditional Keynesian economics is not legitimate.*

We may add to this the following, which intends simply to emphasise a point already brought forward by Patinkin himself; though the simplified analysis of Fig. 2 may help in getting across some of the basic ideas involved in Keynesian economics, a more generalised model—for instance, the one reproduced above—should be used for purposes of serious analysis. This model shows very clearly that Keynes followed Marshallian and even Walrasian–Paretian tradition in respect of his theory involving both demand and supply functions.

In summary, we have now distinguished six supply functions in Keynesian literature: the Genuine Keynesian Supply Function, the Original and the Reinterpreted Patinkin Supply Function, the Familiar Supply Function, the Dillard Supply Function and the Pinxten and Declerq Supply Function. However, only the Genuine Keynesian Supply Function, the Reinterpreted Patinkin Supply Function and the Familiar Supply Function appear to be valid concepts.

Only two problems now remain. First, what is the connection between the Patinkin Supply Curve and the "Familiar Supply Curve"?

Don Patinkin states[1] that this Familiar Supply Function differs from what I have called the Patinkin Supply Function only in this one respect, that it is now possible to drop one of the special assumptions made in the cadre of our Fig. 2:[2] that is to say, the two functions are essentially one and the same. If there were nothing more to it than that, the Patinkin Supply Curve would, according to Proposition XII, contain no fresh thought. There is, however, something more to be said, provided we understand the Patinkin Supply Curve in its "reinterpreted" version (see Proposition I and the subsequent text of § 2).

[1] Patinkin, "Involuntary Unemployment," p. 380.

[2] To wit, that the real wage level be constant. In § 2 I pointed out that Patinkin's special assumptions need not trouble us here, since they are not relevant to my argument. I showed also that a constant real wage level would cause the so-called *Reinterpreted* Patinkin Supply Curve to be horizontal (see Fig. 2).

We should remember that the Reinterpreted Patinkin Supply Curve was obtained in the simple model of § 2 by substituting the value of the *supply* function of labour (2.6) into the production function (2.5). Of course, the same procedure may be applied to the generalised model of § 6: in the latter model, the Reinterpreted Patinkin Supply Function is obtained—roughly speaking—by substituting the supply function of labour (6.5) into the production function (6.2). Hence:

PROPOSITION XIII: *The Familiar Supply Function and the Reinterpreted Patinkin Supply Function are fundamentally different: the Familiar Supply Function is obtained by substituting the* demand *function for labour into the production function, whilst the Reinterpreted Patinkin Supply Function is obtained by substituting the* supply *function of labour into the production function.*

Secondly, what is the usefulness of the Reinterpreted Patinkin Supply Function? It was shown in § 2 that in the simplified model of Fig. 2 this usefulness is threefold: (1) it is an expedient for defining unemployment quantitatively; (2) it is a device for defining *involuntary* unemployment qualitatively; (3) it makes the comparison of Pigovian and Keynesian economics somewhat easier.

In the generalised model of § 6, however, its usefulness is less obvious. A potentially existent unemployment has already been defined in (6.6), if and when this equation does not hold (the case of inconsistency of the model): (1) The volume of unemployment is defined by the difference between the numerical values of N_{FE} and N; (2) unemployment is qualitatively defined as *involuntary*, since the actual volume of employment is N_E and not N_{FE}, so that workers are not on their supply function (6.5); (3) the comparison of Pigovian and Keynesian economics is made fairly easy by use of the generalised model: Pigou states that potentially existent inconsistencies of the model will always be ruled out automatically under the influence of price- and interest-adaptations: whilst the position of Keynesian economics is that this result will generally not be accomplished, since price- and interest-elasticities are too small for this.[1] We may therefore conclude that:

PROPOSITION XIV: *The Patinkin Supply Curve, even in its*

[1] That is to say: this is the position of short-run Keynesian economics as it now stands. Keynes himself was perhaps slightly more optimistic about the interest-elasticity of the investment function; but he was not at all optimistic about price-elasticities.

" Reinterpreted " version, is a superfluous concept in the cadre of a generalised Keynesian model: it does not add anything new to the complete system of Keynesian economics. This is in full accordance with the statement of Proposition XII.

§ 7. Concluding Remarks

Propositions II, XI and XII may be said to constitute the major results of this paper. The other Propositions are of a secondary nature. They serve on the one hand as necessary preliminary remarks and comments on the way to the three main Propositions; on the other, they embody an attempt to evaluate other writers' positions in this difficult and obstacle-ridden field.

F. J. de Jong

The State University of Groningen,
The Netherlands.

RENT CONTROL AND HOUSING POLICY

1. The Government's proposals for the amendment of the Rent Restriction Acts and other Housing legislation, set out in a White Paper published as Cmd. 8996 of 1953, deal only with a limited number of the problems now existing. The policy of allowing increases in rent to offset the higher cost of repairs, increasing Local Authorities' powers to see that repairs are done and accelerating slum clearance should lead to some improvement in standards of maintenance of those houses which are still fit for use and to a more rapid rate of replacement of the remainder. The statutory deductions from gross rateable value, which are the basis of the increase of rent to be allowed, were described by the Harley Committee in 1931 as rather high, if regarded as solely for repairs (Cmd. 3911, para. 63), and increases equal to twice these deductions should fairly represent the rise in repair costs in most cases. The proposed ceiling to rents of twice gross rateable value will, however, make some of the actual increases less than 200% of the statutory deductions, and landlords who bought high-rented property for prices related to rents charged may still be unable to carry out repairs and receive reasonable net returns on their money investments. Generally, however, Local Authorities will probably feel that they can now use their powers to compel landlords to do essential repairs, and the stringent requirements which landlords have to meet before they can increase their rents, while they may deter some landlords from seeking to impose the increases authorised, should in other cases help to ensure that some of the more urgent work is shortly put in hand. The new provision empowering Local Authorities to take over derelict houses at site value, even though they cannot necessarily undertake to re-house the occupants within any stipulated time, is a useful addition to their powers, and should strengthen their hands in dealing with the minority of thoroughly bad landlords. The proposals relating to grants for improvements and conversions are another welcome feature of the new plans: it was never reasonable to expect landlords to spend money on unprofitable houses in return for increases in rent equal to 6% on their outlays, and the 8% now proposed is more realistic.

In short, if the Government proposals are regarded simply as measures designed to bring about some improvement in standards

of maintenance over the next few years, they appear to be reasonably adequate for this limited purpose. It is true that many anomalies will remain, but in view of the immediate need for action to check the deterioration of houses, and of the political objections to increases in rents not clearly related to the cost of repairs, it is difficult to see what better basis for an emergency increase could have been devised. But there are other, and equally urgent problems confronting us in housing to-day, and it is on the score of their inadequacy as a comprehensive long-term policy, rather than for their shortcomings as a rescue operation, that the Government proposals can legitimately be criticised.

2. The chief burden of criticism must be that the proposed reforms do not appear likely to do anything to reduce the existing misuse and misallocation of houses, which is an important by-product of control in its present form. If rents are controlled below the levels which would equate demand to supply in a free market, while landlords are free to sell their houses at uncontrolled prices when they recover possession, it is not to be expected that many empty houses will be available to let. When existing tenants are protected against eviction, but are unable to assign their tenancies to other persons, they will in these circumstances face considerable financial loss if they move. Thus the mobility of labour is reduced, relatively prosperous tenants live in cheap houses while poorer people pay higher rents for furnished accommodation or new Local Authority dwellings, and the actual cost of living for some workers is arbitrarily lower than it is for others. As time goes on, an increasing number of parents will suffer from the scarcity of houses available to let, while the number of protected tenants with dependent children must fall. Increasing the number of Local Authority houses does not provide an acceptable solution to this problem, for two reasons. In the first place, even if the present rate of building is maintained, it will be many years before new houses can be made available to all who require them. Secondly, it would be extremely wasteful to try to build new houses for all those who are likely to require houses to rent in the foreseeable future, since plenty of accommodation for them exists, or rather would exist if it could profitably be let. What is required is not a further increase in the rate of new construction, but a more economic use of existing houses. This will not be achieved by increases in controlled rents, unless they are raised to levels which would equate demand in a free market to the supply of houses available. Such an increase, which would be tantamount to decontrol, would be unlikely to commend itself to a democratic government interested in its re-election, and may therefore be ruled out for the present.

3. That the increases now proposed will still leave a wide gap between controlled rents and free-market levels is abundantly clear. The maximum increase to be permitted is one which will make the total rent of a house equal to twice its present gross rateable value. According to the White Paper, two-thirds of the houses at present controlled have gross values less than £20, while only about one million, representing something like one-sixth of the total number, are assessed at £30 or more. In rural areas there are large numbers of houses whose gross assessments are under £10. In the light of these figures, and bearing in mind that the imposition of the maximum permitted increase of twice the existing statutory deduction will leave many rents below 200% of gross rateable value, it is clear that controlled rents of the majority of privately owned houses will still be well under 15*s*. per week, while only the minority assessed at £30 or more will have rents equal to or greater than the subsidised rents of new houses built by Local Authorities. A high proportion of the houses in the higher ranges of rateable value are in the London area, and almost all of them are now occupied by middle-class tenants, and will inevitably be sold to owner-occupiers when they fall vacant, so that we may say with confidence that no houses of the type normally rented by wage-earners will have controlled rents comparable with the rents of new Local Authority houses.

An analysis furnished by the Ridley Committee in 1937 of the average rents of houses in urban areas of England and Wales outside London with rateable values within the compounding limits shows that 57% of these houses were then let for an average net rent of 6*s*. per week, while the average rent of most of the remainder was about 7*s*. 6*d*. Within these limits of rateable value, only 8% of houses, built after 1919, had average weekly rents as high as 10*s*. As no rent can increase by more than 80% of gross rateable value, and as actual rents usually exceeded rateable values before the war, the increases now proposed will bring these rents in most cases to between 10*s*. and 15*s*., the average being nearer to the former figure. Rents in London were rather higher than those considered by the Committee in forming their estimate, but rents in rural areas were considerably lower.

4. If increases in controlled rents larger than those now proposed are ruled out by political considerations, some further action will be necessary to restore mobility and encourage landlords to re-let houses which fall vacant. Some interesting suggestions

have been made since the war, notably by Mr. Harrod in his book called *Are These Hardships Necessary?*, published in 1947, and Professor Paish, in an article published in *Lloyds Bank Review* for April 1950. Mr. Harrod suggested that rents should be decontrolled, and that a tax of 100% should be levied on rent increments for a period of ten years, the proceeds being returned to existing tenants in proportion to the increases in their rents, whether or not they remained in possession. A man at present paying a controlled rent of 10*s*. per week would, if his rent were increased to 25*s*., receive a subsidy of 15*s*. per week for ten years. This would protect him from hardship and at the same time make it possible for him to move to another house at 25*s*. per week without loss, or to a smaller house at, say, 20*s*., with some financial advantage. This plan was criticised by Professor Paish on three grounds. First, it would do nothing for ten years to enable landlords to meet the higher cost of repairs. Secondly, it would perpetuate the existing random subsidy to tenants and, thirdly, it would make their privileged position more explicit, and therefore more objectionable, than it is at present. It may be questioned whether it is in fact better that positions of unjustifiable economic privilege should continue to be concealed than that they should be made explicit, but Professor Paish's other objections appear to have substance. Difficulties might also arise if, during the ten-year transition period, some rents rose while others fell: the proceeds of the tax would vary, and some tenants' subsidies might become inappropriate to their needs.

Professor Paish's own scheme, for allowing rents to rise to their natural levels and imposing a partial tax on increments in order to provide higher pensions and allowances and to reduce taxation on incomes other than rents, is also open to criticism. In the first place, any substantial addition to the already heavy burden of taxation and social expenditure is surely in itself a thing to be avoided as far as possible. Secondly, with the best will in the world, the scheme would be bound to work inequitably in many cases. Rents would rise more sharply in some areas than in others and, after all adjustments had been made, some people would find themselves worse off than they are at present. Owner-occupiers who have paid high prices for houses since the war would have good cause for complaint if they found themselves worse off after paying the new tax on their houses which, according to Professor Paish, they should pay to offset the increased social benefits they will enjoy in common with tenants.

The suggestion that controlled dwellings should be taken over

by Local Authorities has its attractions, but is not examined in this paper, whose purpose is to discuss possible methods of control of rent on the assumption that houses remain privately owned.

5. If these suggestions are unacceptable, other ways of achieving the same ends should be examined. The decontrol of houses when landlords lawfully recover possession has some advantages as a long-term solution; it would ensure that, over time, some privately owned houses became available to let, while no existing tenant would have his rent increased. But both the Marley and the Ridley Committees, which considered the question in 1931 and 1937 respectively, were of the opinion that this method of decontrol, which had been introduced by the Rent and Mortgage Interest Restrictions Act of 1923, had serious disadvantages. The Marley Committee thought it appropriate for large houses, which might be held for sale when they fell vacant, but found that it led to large increases in the rents of small houses and had an immobilising effect on their tenants. The Ridley Committee were of the opinion that decontrol by possession was wrong in principle, because the small number of houses normally falling vacant in any district over a limited space of time made it easier for landlords to exact scarcity rents, and this method of decontrol, which had ceased to apply to houses below certain limits of rateable value in 1933, was abandoned in 1938.

When the Marley Committee reported in favour of reinstituting control over the rents of small houses, they were influenced by the belief that control could be effectively maintained because houses of this class were not usually held for sale at the time (Cmd. 3911, para. 47). To-day, almost all empty houses are held for sale by their owners, and control over their rents can be effective only if steps are taken to prevent this happening. It would be possible to give Local Authorities statutory powers to acquire by compulsory purchase, at reasonable valuations, all empty controlled dwellings which they thought should in the public interest be re-let. Registers of controlled property could be compiled, and landlords required to inform Local Authorities when houses fell vacant before offering them for sale. Whether such a provision would in the long run work altogether to the public advantage must be a matter for judgment: there are objections to giving Local Authorities monopolistic powers in connection with the provision of housing. If regulations to enforce this policy were made, they should be applied only to houses in the lower ranges of rateable value, of a type appropriate to the needs of those who cannot afford ownership. If Government policy is aimed at encouraging all

who can afford to buy and maintain their own houses to do so, : seems pointless to attempt to force the re-letting of house suitable for middle-class occupation.

The latter consideration makes it difficult to agree with th Marley Committee in recommending the method of decontrol b possession for houses in the higher ranges of rateable value. landlords were able to choose between selling and letting suc houses in a free market, they would naturally choose the mo profitable alternative, and the number of houses offered for sa would be smaller, and prices higher, than at present. This woul be detrimental to the interests of most members of the middle clas who nowadays appear to prefer ownership to paying rent.

The method of decontrol by possession might, however, b applied to flats with some advantage. Flats are not usually sol outright when they fall vacant, but are more often furnished b their landlords and either re-let at uncontrolled rents or let their controlled rents to tenants who are willing to buy their co tents at rather optimistic valuations. People who prefer the own furniture would be better off if some unfurnished flats we available to let, even if rents asked were fairly high. There is al something to be said in favour of making existing controlled ren cease to apply to houses occupied by their owners. Most owne occupiers are not capitalist entrepreneurs who normally let hous for gain; the houses which they occupy are often their principa if not their only, capital assets. Some of these houses are mor gaged for amounts related to their contemporary market valu and their owners could no more afford to let them at pre-war mon rents than wage-earners could afford to work for pre-war mon wages. Owners of houses which have not previously been let a permitted to ask Rent Tribunals to fix reasonable rents for the houses, if they wish to let them, and there is a strong case f extending this method of control to all houses now occupied b their owners. Whether any house happens to have been let befo is not relevant to the determination of the rent for which its prese owner may reasonably be expected to let it without loss to himse

6. None of the above proposals would do much in the sho period to increase the mobility of those at present paying co trolled rents. Since it is clearly impossible to arrange that t supply of houses offered to let at pre-war rents should be equal the demand of people receiving post-war incomes, it follows th existing tenants will be able to move without financial loss only they are able to exchange tenancies with other persons or to assi their tenancies to third parties in return for sums of money whi

will compensate them for the loss of their present privileged position. Unfortunately, while tenants of controlled dwellings at present enjoy effective protection against eviction, no provision exists for the exchange or assignment of tenancies. While rents are controlled at uneconomic levels this is not unreasonable: the windfall profit which a landlord receives when his tenant dies or moves is some sort of compensation for losses incurred while his houses are let. But if controlled rents were raised to remunerative levels, landlords could reasonably be required to contract to let their houses for fixed periods and to re-let them at the end of those periods if the necessity for control remained. If tenants held leases, which they could assign to other persons either in exchange for leases of other houses or for money payments, their mobility would be effectively restored. It is therefore suggested that increases in controlled rents should be made conditional on landlords' willingness to offer their tenants new leases, conforming to certain statutory requirements. A standard form of lease agreement for controlled property might be drawn up, limited as to duration and containing provisions generally similar to the conditions now governing statutory tenancies. Such leases should not contain any restrictions on assignment, and landlords should not be allowed to evict tenants for breaches of conditions without the order of a Court. Future control might then take the form of giving tenants a right to the renewal of leases on expiry, unless otherwise ordered by the Courts. Control could be modified from time to time by varying the conditions on which the Courts could authorise changes in rents or conditions of tenure, and the grounds on which landlords might claim possession on the expiry of leases. Decontrol, if and when it became appropriate, would simply restore to landlords their ordinary right to possession of their properties when leases expired.

Tenants who did not wish to sign lease agreements should not be forced to do so, but should retain their existing rights as statutory tenants for the time being. Landlords should be permitted to recover possession from these tenants as houses fell vacant, as they now do. Most tenants who foresaw that they might wish to move at some future time would obviously find it to their advantage to sign leases: the lease of a house let for a rent below its market value is decidedly more of an asset than a liability.

7. Landlords who did not wish to grant new leases might be permitted instead to offer houses for sale to their sitting tenants at prices not exceeding either an appropriate multiple of the existing

rent, or net rateable value, or the valuation of an independent mortgagee. The latter condition would ensure that lack of capital would not prevent a tenant from buying his house, while the former would ensure that mortgage repayments were reasonably related to existing rents. Whether rent or rateable value affords the better criterion of value is a matter for judgment: one way would help to even out rental anomalies, and result in prices in some ways more fair to tenants, while the other would give landlords more exact compensation for loss of actual rent. When the new valuations for rating now being made become effective, these would probably afford the best criterion available.

Many controlled dwellings have in recent years been sold to their sitting tenants for prices well below their present-day market values with vacant possession, and it seems desirable to encourage this tendency. It has the advantage that tenants recover their mobility, and landlords receive compensation, on terms mutually satisfactory to both parties. Landlords who refused to make their tenants offers of either lease or sale on the conditions laid down should not be allowed to increase their rents. If they consider that they are better off as they are than they would be if they sold or leased their houses on terms such as those outlined above, they cannot be said to be suffering undue hardship from the present working of control, and can be expected to keep their houses in order in their own interests, since they must, if they are acting rationally in refusing to lease or sell houses to tenants, be looking forward to the time when they will recover possession and either live in the houses themselves or sell them in the free market.

8. Reform on these lines would have the advantage that tenants would receive something of value if their rents were increased, so that it could not be represented, as the proposal simply to increase rents has been represented in some quarters, as a partisan measure designed to benefit landlords. If, however, landlords are to be prevented from recovering possession of their houses, and holding them for sale, when tenants vacate the houses they now occupy, it will be more than ever necessary to adjust controlled rents in such a way as to remove the anomalies which now exist. These have arisen largely as the result of various schemes of partial and piecemeal decontrol between the wars, and also to some extent because valuations for rating have not kept pace with prices. The latter cause will make the controlled rents of many houses in rural areas inadequate in many cases, even when the proposed increases have become effective. Some rural cottages have gross assessments as low as £6, on which the statutory deduction which is the basis of the proposed increase is only £2. It has been pointed out in several quarters that an increase of £4 per year in the rents of these houses will not enable them to be kept in proper condition if their owners are to get anything out of them at all.

In their White Paper the Government refer to the new valuation for rating purposes now being made, and suggest that this may provide some guide to proper maximum rents in a future period if control remains necessary. As control over the rents of some houses was still regarded as necessary twenty years after the end of the First World War, which occasioned less destruction of property and was followed by a smaller degree of inflation than the Second World War, it seems optimistic to expect that the present necessity for control will disappear in the foreseeable future. Certainly it will not do so unless steps are taken to bring controlled rents up to levels reasonably related to present-day money wages and prices, and there is at present no sign of this being attempted.

If control is to be maintained, it is desirable that new standard rents should be fixed for all houses as soon as possible. The new valuation referred to is to be based on rents normally obtainable in a free market in 1939 and, provided that due care is taken to avoid weight being given to abnormally high or low rents resulting from the retention of control over some houses and the piecemeal decontrol of others on possession, should provide an acceptable basis for a more rational rent structure than exists at present.

9. The question of what is an appropriate relationship between current rents and rateable values based on hypothetical 1939 rents is slightly complex. If the Government adheres to its present policy of allowing increases only on account of higher repair costs or expenditure on improvements, refusing to countenance any general increase in landlords' net money incomes, the pre-war cost of repairs will presumably still have to be the basis of increment. The existing statutory deductions may not, however, be satisfactory for this purpose. The revision of assessments will clearly entail some considerable changes in rateable values, and the consequent changes in statutory deductions, which are based on a sliding scale, will not be proportional. To the extent that the Government are justified in their assumption that existing deductions did in fact correspond to the actual cost of keeping houses in repair in 1939, a distorting factor would be introduced if assessments were changed unless appropriate changes in the scale of statutory deductions were made at the same time.

The present scale allows deductions in respect of repairs varying from one-fifth of gross rateable value for houses assessed at £50 per year or more to approximately two-fifths for those assessed at £20 or under. Actual rents charged generally exceeded gross rateable values in varying proportions, and the Marley Committee estimated that the average incidence of repair costs on the rents of small houses was about one-third. They found that the average cost of repairs in 1931 was equal to about 50% of 1914 rents (Cmd. 3911, para. 65). Rents of houses which remained controlled had been increased by 40% under the Act of 1920, while a number of small houses had become decontrolled after 1923, and their rents were on average about 25% higher than the rents of similar houses remaining under control. If new rateable values were calculated on the basis of actual rents charged, the present allowance of 40% would be nearly correct in the case of houses whose rents were still controlled in 1939, but would be excessive in the case of most of those which had by that time been freed from control, especially in the London area, where the increase in rents on decontrol appears to have been rather higher than in the provinces. The Ridley Committee found that rents of decontrolled houses whose rateable values fell within the compounding limits had an average range of 12*s*. 6*d*. to 13*s*. 0*d*. in Greater London, compared with an average of 8*s*. 6*d*. to 9*s*. for houses remaining under control. Outside London the comparable figures were 7*s*. to 7*s*. 9*d*. for decontrolled houses in urban areas as compared with 5*s*. 6*d*. to 6*s*. 2*d*. for controlled houses, and 5*s*. 9*d*. to 6*s*. compared with 4*s*. 6*d* to 4*s*. 10*d*. in rural districts. If we take the figures for the uncontrolled houses as representing rents normally obtainable in a free market at the time, since this is supposed to be the basis of the new assessment, it is plain that an allowance of one-third comes nearer to representing the existing statutory deductions of £4 to £6 per year allowed on most of these houses than would an allowance at the present rate of two-fifths. As the cost of repairs is now about three times what it was in 1939, it follows that rents of small houses should exceed their average 1939 rents by about two-thirds, rents of larger controlled houses being increased in smaller proportions on a sliding scale. The figures provided by the Ridley Committee suggest that the new rateable values of the smaller pre-1914 houses would range from about £22 to £34 in Greater London, from £14 to £21 in other urban areas of England and Wales and from £11 to £16 in rural districts if the revised assessments were based on actual rents charged, the lower figure being slightly higher in each case if the rents of those houses which

remained controlled were scaled up to correspond with rents charged for decontrolled houses of the same type. Small houses built between the wars would have slightly higher assessments, the average net rent of those in urban areas outside London being in 1937 about £26.

Increases equal to two-thirds of these gross values would correspond roughly with the actual rise in maintenance costs outside London, but if applied to the more expensive houses of this type in Greater London would appear to be rather high for our present purpose, involving, as it would, increases of £22 per year for some of the London houses compared with a range of £10 to £14 in other urban areas. It would therefore seem appropriate to restrict the maximum increase of two-thirds to houses whose 1939 rents did not exceed £25, which would include most of the smaller and older houses in the provinces and some of the less-expensive ones in London, and begin to scale down allowances at this point. An increase of 50% might be appropriate for houses with 1939 rental values between £25 and £40, falling to 40% or less for the larger houses.

10. It might seem more rational to increase statutory deductions to make them represent the actual cost of repairs to-day, instead of attempting to reduce them so that they do not exceed estimated costs in 1939. But it should be clear that, if this were done without similarly scaling up gross values, net rateable values would be sharply reduced and would in some cases fall to zero. The objection to scaling up gross values is that, if controlled rents are to be related to these values, the result would be an equiproportional rise in all rents over their average 1939 levels, which is contrary to present Government policy. If public opinion could be persuaded that houses owned by private landlords are different from gilt-edged securities, the simplest way to go about the problem would be to double the new assessments, when they are made, and make these new gross values the controlled rents for all future lettings, adjusting the scale of statutory deductions so as to allow for the cost of repairs to-day. An increase of this sort would leave both the net real incomes of landlords and the proportion of wages spent on controlled rents considerably lower than they were in 1939, while retaining the existing proportionality between rents of houses of different types. The later point is important if it is hoped to bring about a situation where people living in unnecessarily large or well-situated houses will have adequate incentive to move to other dwellings, so as to leave large houses and houses in industrial districts free for large families and industrial workers.

The slight increase in landlords' net money income, though it would not fully compensate them for the decline in the purchasing power of money since 1939, would give them a better incentive to keep their property in order without continual pressure from Local Authorities, and so might be expected to produce higher standards of maintenance. Obviously, the greater the proportion of his rent a landlord is expected to spend on repairs, the more reluctant he is likely to be to spend it. A 100% increase in average 1939 rents would considerably narrow the existing gap between controlled rents and rents of Local Authority houses, and make the restoration of free-market conditions much easier. It would also be an advantage in that it would protect untypical landlords, who are always likely to suffer from nicely calculated adjustments based on the case of typical landlords, from the injustice of having their net money incomes left lower than in 1939. The fact that a house may have been let at a rather high rent in 1939 does not necessarily make its present landlord an extortioner : he may have bought it from an earlier landlord for a price related to its actual rent. The guilty party, if there can be said to be one, is the landlord who originally raised the rent, but it is hardly possible to start looking for him after the lapse of perhaps a quarter of a century.

11. If action on the lines suggested above were taken, it should be possible for existing privately owned rented houses to be kept in repair while they last, and for a large number to be kept available at rents which wage-earners can afford to pay. It cannot be supposed, however, that any considerable number of new houses for letting will be built by private enterprise, in competition with subsidised building by Local Authorities. If large-scale building by Local Authorities for letting is continued, most people within the next generation will find themselves faced with a straight choice between buying a house or renting one from their Local Authorities. At present, tenants of Local Authority houses are subsidised, while owner-occupiers have to pay income tax on the net value of their houses. The continuation of this form of taxation, so far from raising revenue, is likely to prove a source of loss to governments in the future, since anything which increases the cost of owning a house will tend to increase the numbers applying for subsidised accommodation. A policy of subsidising some houses and taxing the remainder might be rational in a community divided clearly into two groups, consisting of poor people whose cottages ought to be subsidised and rich people whose mansions should be taxed, but the existence of a middle class makes it inappropriate. In order to keep the cost of providing subsidised

accommodation within bounds, we should do everything possible to keep down the cost of owning and occupying a house. If houses are necessities, regarded as proper objects for a subsidy, their ownership should not be taxed unless they are let for gain. If it is thought proper to continue to tax luxury houses owned by rich people, a deduction from gross rateable value should be allowed, equal to the economic rent of an unsubsidised house of the type now built by Local Authorities. This would at any rate ensure that wage-earners who preferred to own their houses were not penalised for failing to take advantage of the subsidy available to tenants.

12. The objection that a scheme on the lines suggested would enable existing tenants to make money in undesirable ways, by disposing in the free market of leases and houses acquired either for nothing or at controlled prices, is less serious than might be supposed. Most people doing this would have to obtain other accommodation for themselves, and would be unlikely to make any substantial money profit on the whole transaction. People who move to smaller or less-convenient houses ought to make some money profit, if good use is to be made of existing housing. It might be wise, however, to provide that leaseholders applying for re-housing to their Local Authorities should hand over their leases, and that owner-occupiers should similarly offer their houses for sale to Local Authorities at an independent valuation. In addition to preventing people from securing money profits at the expense of tax-payers, this provision would make it possible for Local Authorities to provide additional housing at rents generally lower than the economic subsidised rents of new houses, with some advantage to the poorer applicants. Relatively prosperous tenants, and large familes, could then be re-housed in new dwellings by their Local Authorities, their old houses being made available by the same bodies to poorer people and those with smaller families.

13. The proposals contained in this paper may be summarised as follows :

(i) Rents of controlled houses should be increased only where landlords are willing either to make their tenants offers of sale at controlled prices, or to offer new leases conforming to certain statutory requirements designed to protect tenants.

(ii) Tenants should be free to assign their leases to other persons, but tenants applying for subsidised municipal accommodation should be required to surrender their leases to Local Authorities.

(iii) While control remains necessary, tenants should have the right to the renewal of leases when they expire.

(iv) Rents of flats should be decontrolled when landlords recover possession, and reasonable rents for houses at present owner-occupied should be determined by Tribunals, whether or not the houses have been let before.

(v) When the new valuations for Rating are complete, new standard rents based on these valuations should be fixed for all houses which it is proposed to retain under control. Some changes in the scale of statutory deductions from gross value will be necessary when the new valuations become effective.

(vi) It would make for a more economic use of housing if new rents were fixed by scaling up the revised valuations in a fixed proportion.

(vii) To prevent the burden of housing subsidies from becoming excessive in the future it will be desirable to take measures, such as exempting owner-occupiers from Schedule A Income Tax liability, designed to keep the cost of owning a house as low as possible.

J. L. CARR

University of Reading.

THE INTERPRETATION AND APPLICATION OF THE COMPENSATION PRINCIPLE [1]

THE postulate, first advanced by Kaldor [2] in 1939, that a policy shall be deemed socially desirable if the gainers from the policy can compensate the losers and have something left over of their gains, has been the cause of much discussion and the source of much confusion in economic literature since that time. A number of peculiarities concerning its operation have been pointed out, and some ambiguities uncovered as to just what is meant by it. The purpose of this paper is to treat the subject of compensation systematically, and to emphasise certain essential aspects of it which have either been taken for granted or overlooked completely in previous discussions.

Throughout the discussion the conventional assumptions will be held to with regard to the convexity of indifference curves and of production frontiers; similarly, it will be assumed, in the production cases, that the amount of effort supplied, or the amount of leisure retained, remains constant. That is to say, indifference curves are assumed to be convex to the origin, and the production frontiers to be concave to the origin; and the production frontiers, or opportunity cost curves, are supposed to represent those that would obtain for a constant supply of the factors of production. The adoption of more general assumptions would greatly complicate the argument without altering its substance; and in this connection it should be kept in mind that the examples used are purely illustrative.

It is suitable to take as a point of departure the treatment of the question of a social optimum given by Pareto.[3] Pareto observed that at a position where the optimum conditions of exchange and production were not being met, some or all consumers could be made better off without any being made worse

[1] I wish to thank Prof. Carl Christ for his advice and criticism during the preparation of this article. The conception of much that is in it arose as a result of conversations with Prof. Arnold C. Harberger.

[2] N. Kaldor, "Welfare Propositions in Economics," ECONOMIC JOURNAL, Vol. XLIX (1939), pp. 549–52. The same postulate was implicitly argued by Hotelling in "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," *Econometrica*, Vol. VI (1938), pp. 257 ff. Kaldor was, however, the first explicitly to raise it to the status of a "principle."

[3] V. Pareto, *Manuel d'Économie Politique*, 2d Ed. (Paris: Giard, 1927), pp. 148–9, 151, 354–5, 362 and 617–18.

off; whereas at a position where these conditions were being met no one could be made better off without making someone else worse off. For example, in Fig. 1, which represents a pure exchange situation,[1] at a point such as A, where the marginal rates of substitution between the two commodities X and Y are not the same for both consumers, some movement is possible such that both can be made better off: namely, a movement to any point in the striped area. At point B, where the marginal rates of substitution are equal, no such movement is possible. Pareto declined to discuss any movement by which one consumer was made better off at the expense of the other. This restriction implies that A can be compared with any point in the striped area (and found to be inferior), and B can be compared with any

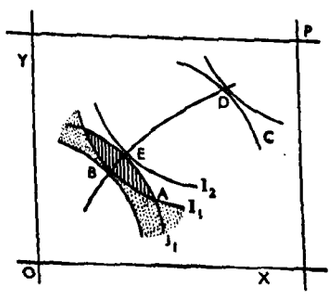


FIG. 1

point in the stippled area (and found to be superior);[2] but neither A nor B can be compared with either C or D, which are outside these areas.

What has so far been said amounts to the well-known fact that if any two individuals differ in the relative valuations of any two

[1] Fig. 1 is a familiar Bowley "box diagram" representing two individuals: the first individual's income in X and Y is referred to the origin O, as are his indifference curves I_1, I_2, etc.; the second individual's income is referred to the second origin P, as are his indifference curves J_1, etc. Any point in the diagram represents a particular distribution of goods between the two individuals; for example, at point C the first individual has an amount of X represented by the abscissa of C, measured along OX, and an amount of Y represented by the ordinate of C, measured along OY. At C the second individual has an amount of X represented by the difference between C's abscissa and that of P—that is, the horizontal distance from C to the right-hand side of the diagram; and he has an amount of Y represented by the vertical distance from C to the top of the diagram. The second origin P thus represents the total amounts of both goods received as income by both individuals, as referred to the first origin O. (For the present these total amounts are assumed not subject to change, by changes in production or the like.)

[2] In both cases the boundaries of these areas—the indifference curves passing through the point in question—are included as being comparable.

commodities, a trade can be arranged that will be mutually beneficial to both. After the manner of the principle of comparative advantage in international trade, an intermediate rate of exchange for the two commodities can be found lying between the two differing relative valuations placed on them by the two individuals; and both will benefit by trade at that rate. This procedure will be pushed to the point where the two individuals' relative valuations are the same (unless someone runs out of the commodity he is offering in trade, which would put them on the "border" of the diagram); beyond such a point further trade cannot benefit both. A point at which the relative valuations are the same will be referred to as an "optimal" point. Similar arguments apply to a situation which includes both production and exchange.

Kaldor's compensation principle is designed to make possible the comparison of points not comparable under the above reasoning; for example, we may now adjudge point D to be superior to point A, since the person gaining by this movement could compensate the loser to the point E on J_1 (at which the loser would now be indifferent to the change) and still retain the improvement represented by the movement from the gainer's indifference curve I_1 to his indifference curve I_2. Similarly, points B and E can be found superior to point C. By this reasoning, it can be seen that every position satisfying the optimum conditions of exchange can be found to be superior to every position not satisfying them.

Mention must now be made of comparing non-optimal positions, such as A and C. It is in such comparisons that complications arise as to the meaning of compensation; for it can be seen that if A and C are compared as "positions," in terms of which we have so far been speaking, then A and C can be found to be mutually superior. A movement from A to C can be compensated by a movement from C to the optimal point E, which is superior to A: hence C is superior to A. A movement from C to A can be compensated by a movement from A to the optimal point D, which is superior to C: hence A is superior to C, and hence a contradiction.

This result is a natural extension of what was said in the previous paragraph: namely, we have already seen that in a "non-optimal" position, *i.e.*, one in which the two individuals' relative valuations of the two goods are not the same, a trade can be arranged benefiting both. Since this applies at both of two non-optimal positions, and since we have placed no restriction

on the movements across the diagram referred to as "compensation," we can always find a point superior to any non-optimal point to which to move by way of compensation. It can be seen that this is the whole basis of the supposed contradiction which has just been obtained. Since, on the other hand, no point "superior" to an optimal point can by definition exist, no contradiction will arise in comparing an optimal point to a non-optimal point: the optimal point will always be judged to be superior.

This "contradiction" in comparing non-optimal points is conceptually indistinguishable from the one developed in a more complicated model by Scitovsky,[1] and represented in Fig. 2. Here the two individuals are given the opportunity to trade with the outside in the direction and extent of PP', with the internal

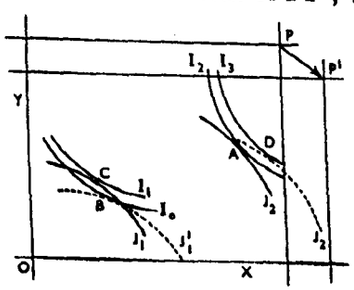


FIG. 2

effect of changing income distribution so as to make the total movement a movement from A to B (the shift in J's origin causing the shift down in J's indifference curves). In comparing the positions A and B, we find that J can compensate I from B to the neighbourhood of the point D, and thereby induce him to accept the trade with the outside, whereas I can compensate J from A to the point C, and thereby induce him to refuse the trade with the outside. It can be seen that positions A and B are both non-optimal, since trading in the direction AD represents an improvement from A, whereas trading in the direction CB represents a worsening from C; these opposite results derive from the fact that the slope of the tangency at A of I_2 and J_2 is steeper than PP', whereas the slope of the tangency at C of I_1 and J_1 is equal to the slope of PP'. Given the opportunity to trade along PP', C and D are optimal positions: at the income

[1] T. de Scitovsky, "A Note on Welfare Propositions in Economics," *Review of Economic Studies*, Vol. IX (1941–42), pp. 77–88. See also E. J. Mishan, "The Principle of Compensation Reconsidered," *Journal of Political Economy*, Vol. LX (1952), pp. 312–22, especially p. 315.

distribution represented by C, no-trade would be optimal; whereas at the income distribution represented by A, trade from P to P' with final distribution D would represent one possible movement to an optimum. As in the previous case of a closed system of two individuals, the possibility of a contradiction has arisen when we have undertaken to compare two non-optimal positions, and for exactly the same reason—*i.e.*, a point superior to any non-optimal point can always be found.

If we inquire about to what extent such contradiction is possible—for example, would it arise in the comparison of *any* two non-optimal positions?—we shall find that our answer will depend on what is meant by compensation, and more particularly on what is meant by "comparing two positions." We shall find that a very common-sense restriction on the notion of a "position"

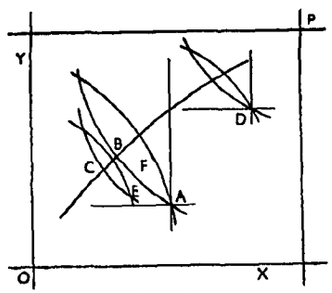


FIG. 3

to which compensation can lead us will narrow down the field of contradictions considerably; it is to this aspect of the matter that most of the remainder of this discussion will be directed.

Consider first of all what might be meant by a compensatory movement. In Fig. 3, would the scope of "compensation" include movements from A to F, from A to E, and from A to D, or would it be restricted to the last? It can be seen that the movement from A to F is an exchange by which both parties benefit; the movement from A to E is still an exchange, but one party gains while the other is made worse off; whereas the movement from A to D (or any movement into the first or third quadrants from A, considered as the origin) is a unilateral transfer, which necessarily makes one party better off at the expense of the other. If compensation is meant to include all three types of movement, then it would follow that every non-optimal point and every other non-optimal point (including itself) are mutually superior; this nonsensical result would tend to indicate that the "compensation principle" is of no help at all in comparing non-

optimal positions. (The result would still stand that every optimal position is judged by the compensation criterion to be superior to every non-optimal position.) A tidier result is obtained if compensation is taken to exclude movements such as A to F (or A to B), from which both parties benefit, but to include all other movements. It would then follow that all non-optimal points not directly comparable by the Pareto criterion would be mutually superior to each other; for directly comparable points the familiar Pareto result would be unaffected. If compensation is taken to include only unilateral movements, such as A to D or D to A, the domain of possible contradictions is restricted somewhat, but not in any substantial amount nor in a way that can be considered helpful or meaningful. In short, as long as comparisons are being made between "positions" (such as A and D) without further restriction, it can be seen that the compensation principle is of little if any help for comparisons of non-optimal positions.

Some recent articles on the problem of policy evaluation have thrown considerable light on the compensation question,[1] and in particular suggest a more precise definition of the notion of compensation which will make the whole matter considerably more meaningful. In particular, the distinction needs to be drawn between "position" and "policy situation," the latter defining a whole set of possible positions that might freely be achieved by exchange (or production-and-exchange) by individuals, within a given institutional framework, starting from all possible distributions of income (or resources). If this distinction is made, and if the scope of compensation is restricted to movements consistent with the given framework of policy and social institutions, it will be found that the "contradictions" spoken of up to this point will largely vanish, with only a few meaningful uncertainties remaining.

Fig. 4 represents an attempt to illustrate the "situation" notion in relating to the compensation problem. It is assumed that two individuals may be selected as "representative" of all

[1] Simon Kuznets, "On the Valuation of Social Income—Reflections on Professor Hicks' Article," *Economica*, N.S., Vol. XV (1948), pp. 1–16 and 116–31; J. R. Hicks, "The Valuation of the Social Income—A Comment on Professor Kuznets' Reflections," *ibid.*, pp. 163–72; J. de V. Graaff, "On Optimum Tariff Structures," *Review of Economics Studies*, Vol. XVII (1949–50), pp. 47–59; Paul A. Samuelson, "Evaluation of Real National Income," *Oxford Economic Papers*, N.S., Vol. 2 (1950), pp. 1–29. These articles discuss changes in the production frontier (and/or in the "utility possibility" function), including possible "twists," such that the new frontier is higher than the old in some places and lower in others (see below, pp. 50–1).

pairs (or groups) of individuals trading in a large competitive market, where the two individuals chosen find that the amounts they want to trade are just matched at the going market rate of exchange.[1] Their total initial incomes of both commodities X and Y are represented by the point P, and the distribution of initial incomes is represented by the point E. If the market rate of exchange is the slope of EF, both individuals will be satisfied by the transaction moving them from E to F. The locus AB shows all the possible points of mutual satisfaction, for various market rates of exchange, given suitable starting distributions of income. The "situation" as so far described is one of free trade of two individuals within a market situation.

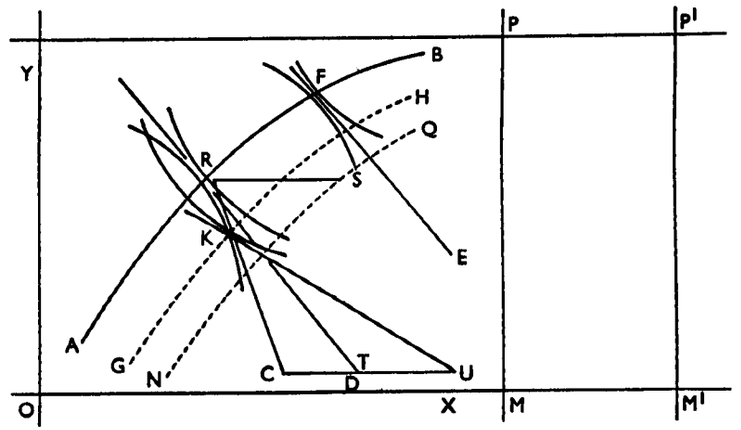


FIG. 4

Now suppose that the initial total incomes were at P' rather than P, with a distribution shown by the point U (Fig. 4), and suppose that a foreign invader imposes a tribute, or reparations payment, on this total market community, of which the two individuals are a part.[2] Further, suppose that the way in which this tribute is exacted is by an excise tax on trade in Commodity X, represented by the difference in slope between the lines UK

[1] The awkward device of selecting this "representative pair" of individuals was necessary in order to make satisfactory diagramming possible; the diagram is purely illustrative, as it can be seen that the basic argument is independent of this selection of a special pair of individuals.

[2] This represents a new situation entirely—the previous argument having been used merely to define the "contract curve" AB. Again a special restriction has been used, for the sake of diagramming, in supposing that the same two individuals may be used to represent all the alternative situations presented—whereas in general, of course, it could not be presumed that any pair of individuals could actually be found that would be matched as shown for even one of the situations.

and KC. Assuming that the amount collected in tax is MM' of X, so that in the course of trade the second individual's origin moves from P' to P and his initial income point correspondingly moves to C (so that $CU = MM'$), the final equilibrium distribution of commodities still remaining after trade in the two-individual system may be represented by the point K. All final situations of equilibrium between these two individuals in which the amount of total income remaining between them is represented by P are represented by GH, the locus of points at which the difference in marginal rates of substitution corresponds to the rate of excise tax. For a higher rate of excise tax (but the same amount of total collection—which would be the case if the initial distribution of incomes were suitably nearer the locus of final equilibria) the corresponding locus might be NQ.

Now suppose that the X-sellers of the community could persuade the invader to take his tribute in the form of a head tax of UT (equals CT) per person of X; the X-sellers could then "compensate" the Y-sellers by a gift of, say, TD of X per trader, and if the new market rate of exchange were DR, the equilibrium at R would leave the Y-trader shown just as well off as before, and would make the X-trader better off. Similarly, (if no "gift tax" were imposed) a change from a higher to a lower rate of excise would make possible the achievement of some point on GH instead of on NQ; and a compensation payment after the manner of TD would make it possible for someone to be better off without any being worse off.[1]

The substance of the results now obtained has a large element in common with that of the earlier discussion in connection with the Pareto criteria: an excise tax on one commodity necessarily has the effect that the relative valuations of the taxed and untaxed commodities are at equilibrium different for different individuals—a long-familiar fact. Hence removal of the tax, without changing the total amounts of commodities possessed by members of the community, will make it possible for some to be made better off without any being made worse off. But what we are now doing is comparing points (along GH) for which the excise tax holds with points (along AB) for which it does not; or, in the second case, we are comparing points for the higher rate of tax with points for the lower rate.

However, the set of alternative circumstances shown in Fig. 4 now sheds light on the previously mentioned notion of a "situation" and of admissible compensation. A "*situation*" may be defined to be *the set of institutional circumstances* (in this case a competitive market plus one or the other forms of paying tribute) *under which trade takes place.* "*Compensation*" may be defined to be *a transfer* (usually a unilateral one) *which does not violate the assumed institutional circumstances*—that is, compensation must not be such as to take the traders to a point which could not be achieved by (non-zero) trading, within the given institutional framework, from *some* possible initial income distribution. For example, without this restriction it might be argued that if an increase in the rate of excise (but with the same total collection as before) changed the initial income distribution and changed the equilibrium point from K to S, then the X-traders could compensate the Y-traders by the payment SR (after trade, rather than before it—something like an all-or-nothing bargain). Thus, since R is superior to K, it might be argued that S is superior to K. This gives a contradiction, since there is also some point better than S on the GH locus, which could be arrived at by (admissible) compensation from K, so that K is superior to S. The new restriction rules out this contradiction, and assures that as long as the locus of non-optimal positions achievable within one given "situation" does not cross the locus corresponding to another, then no contradiction will arise when the compensation principle is applied.[1]

No special difficulty attaches to extending this analysis to the case of production and exchange, shown in Fig. 6*a*. Here it is supposed that two individuals have transformation functions ST and UV.[2] If the individual with origin at O is a sufficiently

[1] It can be seen that since this argument holds for any given amount of tax collected, it holds in general; the amount collected must, of course, be kept among the "other things equal."

[1] The conclusion just reached must be qualified, because of a possible ambiguity which is illustrated in Fig. 5. There is nothing in the shapes of indifference curves in general to prevent the loci GH and NQ from bending back on themselves, as shown, where each locus represents as before points of trading equilibria under a given rate of excise tax. (Again it is emphasised that equal amounts of tax are collected in all "situations" considered in the diagram.) In the case shown, if the two individuals trade along CM (as seen by the individual whose origin is O) the equilibrium point will be E for the lower rate of tax. If the higher rate of tax were imposed, it is conceivable that a market rate of exchange might be established such that the point S would be the new equilibrium position, which is better for both individuals than is E. However, in the case shown, it would have been possible by trading from U to arrive at the point T, where this apparent contradiction of our previous result would not hold. The problem remains of getting from C to U without paying tax on the transaction. This case has been mentioned for the sake of completeness, although it can hardly be supposed to be of much importance.

[2] It is supposed that the two individuals form an isolated community. The existence of a "perfect market" is not needed here, as it was in the previous case, and is therefore left out for the sake of clarity.

good bargainer to specify the indifference curve I which he is to achieve as a result of production and exchange, then the equilibrium position may be found by sliding UV along ST, keeping the two tangent, until the (equal) marginal rates of transformation (the slope of QW) are equal to the slope of tangency (RZ) of some

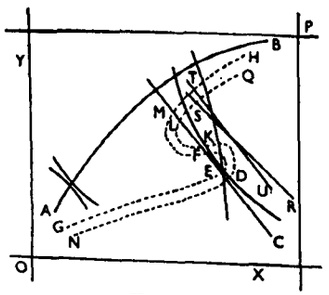


FIG. 5

indifference curve J with I, at R. At this combination of outputs it can be seen that the second individual will have the highest possible indifference curve for the given curve I of the first individual [1] (see *supra*, p. 39).

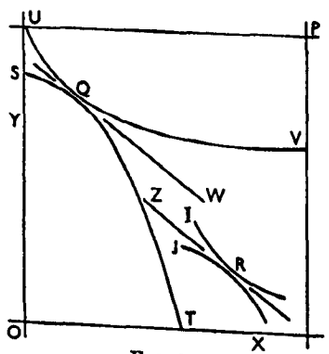


FIG. 6a

The comparative effects of an excise tax and a lump-sum tax are illustrated in Figs. 6*b* and 6*c*, respectively. If a tribute is exacted from these two individuals in the form of an excise tax on the production of Commodity X, then each of the production-possibility curves will in effect be shrunk in the X-direction by an amount proportional to the amount of X produced (Fig. 6*b*).

[1] It can be seen that if some other indifference curve than I for the first individual had been specified, tangency would in general have occurred at some other slope; hence the equilibrium amounts of production depend on the distribution of income. The "contract curve" would therefore *not* be the locus of tangencies of indifference curves in their present position in Fig. 6*a*, except at R.

For example, if the first individual (transformation function ST) produces the amount of X indicated by Q, his tax is QQ'; whereas if he were to produce OT' units of X (and no Y) his tax would be the larger amount TT'; and if he produced no X (at S) he would pay no tax. (Similarly, for MV as compared with UV.[1] $P'P$, or $V'V$, would be the total amount of tax paid by both individuals if the production equilibrium were at Q.) It can be seen that the consequence of this will be that the slope of the tangency at Q', which is the "production" slope as seen by the two individuals, will be different from the slope of the tangency at Q.

If, on the other hand, the tribute is in the form of a lump-sum tax of the same total as before ($P'P$, of which the first individual

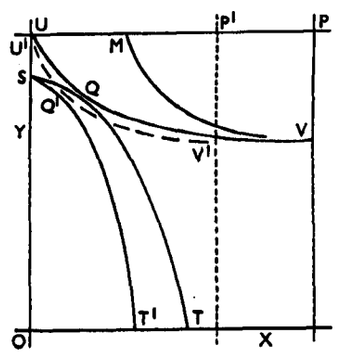


FIG. 6b

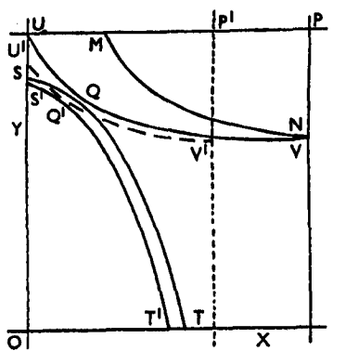


FIG. 6c

is assumed to pay QQ', as before), then the effect will be a horizontal shift of each production-possibility curve by the amount of the tax, without changing its shape (see Fig. 6*c*). Consequently, the slope of the tangency at Q' will be the same as the slope at Q, in this case.

If it now be supposed that the situation shown in Fig. 6*a* is that which obtains as seen by the two individuals when paying tribute in the form of a production tax on one of the commodities (as in Fig. 6*b*), the extension of our previous result concerning excise taxes is straightforward. As before, the slope of RZ must be equal to the slope of QW if the second individual is to have maximum satisfaction for the given satisfaction level I of the first. Now if the invader can be persuaded to take the same tribute in the form of a lump sum instead of an excise tax, the slopes of the transformation functions as seen by the individuals

[1] $U'V'$ is the position of MV after payment of the tax.

will be altered slightly because of the removal of the distortive effects of the excise (Fig. 6c as compared with 6b). The now existing possibility of moving from R along a line different from RZ, the line of the tangency of I and J, without altering the amount of tribute paid, means that the second individual can necessarily attain a higher indifference curve for the given curve I of the first individual. Hence, since this reasoning applies regardless of the particular income distribution arrived at by bargaining, and regardless of the particular rate of transformation and substitution at equilibrium, the familiar conclusion follows that the lump-sum tax is superior to the production excise.[1]

Within the framework of the above argument, "compensation" can be taken to mean any (usually unilateral) payment necessary, as a result of the change in the form of the tribute, to restore the first individual to the level of I.[2]

The whole argument up to here can be summarised in the following way: in using "compensation" as an analytical tool in the evaluation of public policy, it is of the greatest importance to distinguish between the comparison of "points" (of possible final equilibrium) individually, on the one hand, and comparison of *sets* of points defined by a particular policy or institutional situation. The former comparison gives nonsense results except in the comparison of non-optimal with fully optimal "positions" —but this comparison doesn't add anything to what is already known. The latter comparison can make sense, because no compensation is considered as admissible if it helps the community to evade the disadvantages, if any, of the policy being considered; comparisons are therefore made between the effects of one policy and the effects of another.

The possibility still remains, as has been pointed out by various writers,[3] that the locus of possible equilibrium points consistent with one policy may cross the corresponding locus for another policy. One case where this is *not* true is that of the

[1] This proof is similar to that given by Milton Friedman in "The 'Welfare Effects of an Income Tax and an Excise Tax," *Journal of Political Economy*, Vol. LX (1952), pp. 31 f.

[2] Compensation in this case would merely mean continued specification of the same indifference level for, say, the first individual. In the general case of a competitive market, to which the extension of this result is straightforward (see *ibid.*), compensation would restore everyone to the distribution which prevailed before repeal of the excise tax; trade would then be carried on from this point until a new equilibrium of production and exchange was established—which clearly would benefit some and harm no one.

[3] J. R. Hicks, *loc. cit.*; Simon Kuznets, *loc. cit.*; J. de V. Graaff, *loc. cit.*, pp. 49–50; Paul A. Samuelson, *loc. cit.*, pp. 11–17.

imposition of the "optimum tariff"; [1] but the above-mentioned writers seem to have agreed that one case where it might be true is that of "technical advance." But this supposition surely involves a confusion. Suppose that a community, Fig. 7, has an existing production frontier AB, and that a technical advance in the production of Commodity Y which involves external diseconomies for the production of Commodity X results in the possibility of having the new production frontier CD, inter-

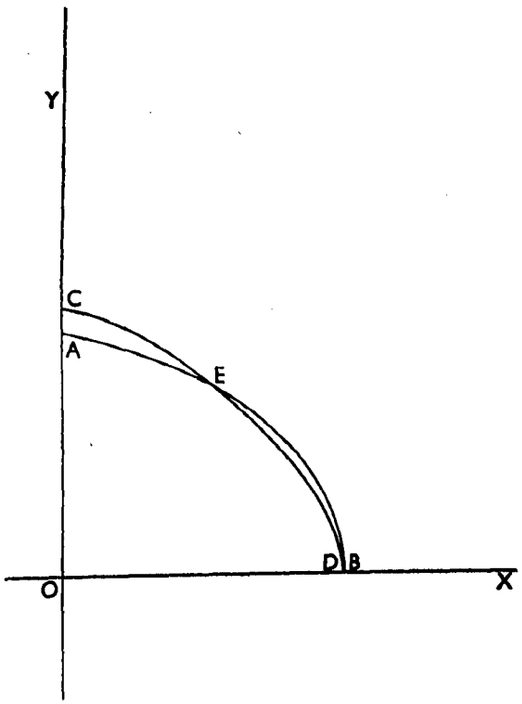


FIG. 7

secting the old one in E. In the *ex ante* sense it is surely true that the community now has the possibility of having the *envelope* of the two frontiers—that is, the segment CE plus the segment EB—particularly if the state or those who stand to lose are alert to the situation. For even in a *laissez faire* economy, those who stand to lose could bribe the Y producers *not to adopt the new method*, if the final equilibrium will occur in the range EB. After the investment has already been committed to bring about the

[1] J. de V. Graaff, *loc. cit.*, p. 57. That this point needs emphasis is evidenced by Prof. Scitovsky's apparent confusion on it: see Scitovsky, "The State of Welfare Economics," *American Economic Review*, Vol. XLI (1951), p. 311.

frontier *CD*, it might be supposed that the frontier *EB* could no longer be achieved, because of the capital losses involved in the change-over. But the same argument applies to any change-over in production: in the very short run no increase can be secured at all of any product's output; and movements along a particular production frontier must surely involve frictions and capital losses. But where the curves are defined in the long-run sense, such complications are presumably to be overlooked; by the same token, we may presume that the community can in fact always have the best of both worlds, *i.e.*, the production envelope *CEB*. The two exceptions would be those cases where investment decisions are fixed and irrevocable,[1] and those cases where there is a simultaneous technical advance and an earthquake or fire. It is safe to say, however, that these exceptions are not of the greatest importance.

On the other hand, there are, no doubt, policy problems of a much higher degree of complexity in their effects than those dealing with a simple excise tax or with a technical advance; and in the more complicated cases it is altogether reasonable to suppose that the loci of equilibrium points may cross. Such situations, however, are beyond the scope of the present article.

In summary, the "compensation principle," when applied subject to the restriction of a given framework of institutions and policies, often gives unambiguous answers to questions of policy;[2] although some genuine ambiguities may still remain. It has been remarked that the principle amounts to little more than an intermediate step in determining whether the Pareto criteria are satisfied; but however it is used, it should be adequately interpreted and not unnecessarily confused with spurious contradictions arising out of incomplete definition.

The Johns Hopkins University,
Baltimore, Md.

M. J. BAILEY

[1] See, for example, the well-known example given by Wicksell, *Lectures on Political Economy* (New York: Macmillan, 1934), p. 186.

[2] The best-known example is, of course, the judgment that a policy of no excise taxes (an "optimal" policy) is superior to any policy which includes excise taxes.

THE RELATION OF ECONOMIC GROWTH AND CYCLICAL FLUCTUATIONS [1]

SINCE the very beginnings of speculation on the problem of the Trade Cycle, the cyclical swings of the economic system have been regarded as being inherently connected with the essentially "dynamic" process of economic growth. For this there were two reasons. In the first place, with relatively unimportant exceptions (such as Jevons's sun spots), even the early writers on the trade cycle (like Marx, Aftalion, Spiethoff or J. A. Hobson) emphasised the key role of the investment process, and of the growth of productive capacity, in the generation of cyclical movements. Secondly, the close connection between the cycle and dynamic change was "visible to the naked eye"—inasmuch as the historical boom periods of the last 150 years were, in many cases, clearly associated with the exploitation of major technical innovations, such as the railways, electricity or the automobile.

At least one distinguished author—Joseph Schumpeter—put forward a trade-cycle theory which makes the cycle itself simply a by-product of economic progress—booms and depressions being "the form which progress takes in a capitalist society." This is because, according to Schumpeter, the realisation of major innovations must await a time when the general economic climate is favourable to them; the adoption of major innovations by the heroic innovating entrepreneurs is followed by a host of imitators giving rise to an investment boom; when the innovations are thus fully exploited (or over-exploited) the economy once more relapses into a depression, until the accumulation of new ideas creates the favourable climate for a new burst of "innovating" investment.

The trouble with Schumpeter's theory is that it is descriptive rather than analytical. Although it is easy enough to see how one particular part of the story follows from the preceding part, it is not possible to make the story as a whole into a "model" (meaning by a model the sum total of assumptions which are just sufficient —no more and no less—together to provide the necessary and

[1] A lecture delivered to the Institut de Science Économique Appliquée in Paris on May 23, 1953.

sufficient conditions for the generation of a recurrent cycle with a clear periodicity) without incorporating into it elements which would suffice by themselves to explain the cycle—without recourse to Schumpeter's own stage army of initiators and imitators, or even the very concept of technical progress. For the necessary " bunching " (in time) of innovating investment, which is essential to Schumpeter's theory, cannot be satisfactorily explained without bringing the Keynesian multiplier, and some variant of the output–investment relationship, to one's aid.

Indeed, the development of trade-cycle theories that followed Keynes's *General Theory* has proved to be positively inimical to the idea that cycle and dynamic growth are inherently connected analytically—to the idea, that is, that the cycle is a mere by-product of, and could not occur in the absence of, " progress." For it has been repeatedly (and in my view, conclusively) [1] shown that a few simple additions to Keynes's own model of a general equilibrium of production in the economy will produce the result that this " equilibrium " will take the form, not of a simple steady rate of production in time, but of a rhythmical movement of constant amplitude and period—in other words, a perpetual oscillation around a stationary equilibrium position. The necessary additions to Keynes's own framework of assumptions to get this result are few and simple. All that is required is to treat the investment demand schedule (Keynes's " marginal efficiency of capital ") not, as Keynes did, as an independent variable, but as a function of both the existing stock of capital and of the current rate of output, or simply of the ratio of output to the stock of capital. This is justified, if future profit-expectations can be regarded as being largely determined by the current rate of profit on capital. For the current rate of profit per unit of capital (or rather per unit of investment) clearly depends on the current relation of output to capital (at any rate if, as a first approximation, profit per unit of output can be taken as given) so that the rate of investment will increase with a rise in output and/or a diminution in the existing stock of capital, and *vice versa*.[2] Since

[1] Cf. my own paper " A Model of the Trade Cycle," ECONOMIC JOURNAL, March 1940, which, of course, drew heavily on earlier works of Harrod (*The Trade Cycle*, 1936), Kalecki (*Essays in the Theory of Economic Fluctuations*, 1938) and others. Since that time Richard Goodwin (*Econometrica*, January 1951, pp. 1–17) and Hicks (*A Contribution to Theory of the Trade Cycle*, Oxford, 1950) produced cyclical models which in the essential framework of assumptions, though not necessarily in technique, are identical.

[2] Some writers (notably Harrod and Hicks) prefer to exclude the stock of capital as an explicit variable, and treat instead investment as a function of the

current output depends (via the Keynesian multiplier) on current investment, whereas the current change in the stock of capital depends on past investment (and will be positive or negative according to whether investment in the previous " period " was greater or less than the necessary replacement of the capital goods currently used up in production), the mechanism will in itself produce a periodic fluctuation of constant amplitude (of the output/capital ratio, of the rate of investment and of the level of output), provided two additional conditions are satisfied :

> (1) a change in output (income) is associated with a greater change in the rate of investment than of savings, so that the stability conditions of the " Keynesian " equilibrium [1] are not satisfied for levels of output that imply a rate of investment that is higher than the possible minimum and lower than the possible maximum ; [2]
>
> (2) the rate of investment at any one time cannot exceed a certain maximum, or fall below a certain minimum, which implies also that the Keynesian stability conditions must be satisfied (partially at any rate) whenever investment is at the maximum or the minimum level.

The second condition must be satisfied by virtue of the fact that gross investment cannot be less than zero, and cannot be greater than the investment corresponding to full employment, or the capacity of the investment-goods industries, whichever is

change in the rate of output (the so-called " acceleration principle "). It is important to emphasise that the difference is more a matter of methodological and pedagogic convenience than of substance. It is perfectly easy to translate one technique into another without any difference in the results; though the acceleration method requires far more rigid assumptions as regards production techniques and time lags of adjustment (cf. my review article of Hicks's book in ECONOMIC JOURNAL, December 1951, pp. 837–41).

[1] The Keynesian stability conditions are simply that a rise in production should increase the aggregate demand for output by less than the value of the additional output (*i.e.*, the " aggregate supply price "). Since the marginal propensity to consume is less than 1 (*i.e.*, the additional demand for consumers' goods generated by a rise in income falls short of the rise in income), this condition will be satisfied if : (*a*) the rate of investment is invariant with respect to changes in output; (*b*) the increase in the rate of investment generated by a rise in output is less than the shortfall in marginal consumers' demand over marginal income—*i.e.*, savings out of marginal income.

[2] Actually it is sufficient for the model if this condition is satisfied in the neighbourhood of the hypothetical " long-run equilibrium " position, where investment = current depreciation. It is simpler to assume, however, that it holds for all levels of investment between a certain minimum and maximum.

less.[1] The first condition is likely to be satisfied on account of the fact that in situations in which an increase in output induces the creation of additional capacity, the value of that additional capacity is likely to exceed (perhaps several times) the value of the additional output per unit period; hence the additional rate of investment (per unit period) is also likely to exceed the additional savings generated by that additional output (the length of the critical "period" depends on the time taken to adjust current production to changes in demand).[2]

Properties of the "Static" Model

The above framework of assumptions yields a purely "static" model of the trade cycle—"static" in the sense that it accounts for a regular cyclical movement of constant amplitude and period, in the absence of any "dynamic" change, such as technical innovation, population growth or changes in the political or institutional framework, and in which the whole movement, its duration as well as its amplitude, is fully determined by the parameters of the system. It has strictly four phases—an upward

[1] The above statement may be open to criticism on two counts. First, it might be suggested that "full employment" does not set any genuine limit to the rate of investment (in *real* terms), since investment could be increased further at the cost of current consumption, through a process of monetary inflation. Now it is true that by means of inflation it is possible to reduce the proportion of real income consumed. But past experience has repeatedly shown that the extent to which an inflationary process succeeds in augmenting the real rate of savings of the community is very limited; and when, as a result of full employment, the increase in current output slows down, the urge to expand investment further is also reduced. However, there is nothing in the model to prevent an expansionary process from leading to a state of purely monetary inflation (in which case the monetary authorities would be forced to take restrictionist measures sonner or later); the point is rather that it does not make any real difference to the mechanics of the model whether inflation occurs in the course of it or not.

It might also be objected that in the absence of full employment the capacity of the investment-goods industries does not set a limit to the expansionary process either: since in that case there would be an urge to undertake investments to expand the capacity of these industries. That is true; but this second type of reaction might operate far too slowly to be of much consequence in relation to the cyclical process. Thus when the demand for new ships exceeds the capacity of the shipbuilding yards the first result is that order-books and delivery periods are lengthened. If this lengthening of order books went on for several years the shipbuilding industry would be induced to build new shipyards. It is quite possible, however, that before such major extensions get under way the boom is over.

[2] For a fuller explanation of these conditions cf. my paper in Economic Journal, March 1940, cited above, particularly the Appendix, pp. 89–92. As explained there, the advantage of assuming non-linear co-efficients is that it makes it unnecessary to rely on time-lags or to introduce exogeneous stocks of any kind in order to account for a cyclical movement of constant amplitude.

phase, a boom phase, a downward phase and a depression phase, the first and third of which may be relatively short in duration in relation to the second and the fourth. Contrary to the general belief (including my own previous views) that under such "static" conditions the duration of the depression phase would necessarily be very much longer than that of the boom phase (owing to the simple fact that capital goods take much longer to wear out than to build), I now believe that the relative duration of the boom phase and the depression phase is simply a matter of the relationship of the output capacity of the investment-goods industries to the normal annual depreciation of the capital stock. If this output capacity were twice as large as normal depreciation, the duration of boom and depression phases would be identical; if it were more than twice as large, the depression phase would last longer than the boom phase, while if it were less than twice as large, the depression phase would be shorter than the boom. Hence, without introducing any "dynamic" change, it is possible to construct models in which the depression phase is short relative to the boom phase rather than the other way round. The length of the boom phase depends on a complex set of factors: the annual output capacity of the equipment-goods industries, its relation to the capital stock at any one time (which *does* depend both on gestation period and service-life), the "critical" degree of excess capacity which causes entrepreneurs to abstain from adding to capacity further; and finally, the Keynesian multiplier, which determines the extent of utilised capacity at boom and depression levels, respectively. The duration of the depression phase depends on the rate at which existing capacity is reduced by scrapping; and it can be assumed, of course, that it is always the oldest and most obsolete plant which is scrapped. If we suppose that the service-life of equipment produced in any given period is uniquely fixed by technical factors, the equipment which disappears during any given depression phase is the equipment that was created in the earliest of the boom periods which was still extant at the end of the preceding boom phase; and the period required for its disappearance (assuming both a fixed and a constant service-life for equipment) would depend on both the length of that earlier boom phase and the age-distribution of the capital stock at the end of the previous boom. If the life-time of plant or equipment is not rigidly determined, we cannot take it for granted that the discontinuity in building periods will be reflected in a similar discontinuity of scrapping periods, though in so far as the life-time of equipment can be extended only at

a gradually increasing operating cost, there will be an economic motive for keeping obsolete equipment in existence during boom periods and to concentrate the scrapping of equipment on depression periods. Finally, if we suppose that, for purely technical reasons, there is a fairly wide spread in the service-life of the equipment created in any given period (both because equipment is of different kinds and also because equipment of any particular kind has a probability-life-distribution rather than a fixed service-life), the disappearance of old equipment will tend to take place at a more or less steady rate in time, irrespective of the discontinuity in building periods; and it may not show much variation as between boom and depression phases. In each case, however, the length of the boom phase in relation to the length of the cycle as a whole will depend simply on the relationship of the average annual depreciation of the capital stock—during the cycle as a whole—to the annual output of capital goods during the boom. If the latter were twice the former, the boom phase would take up one-half of the full cycle-period and so on.

The inter-relation of the various factors could be made clearer in terms of a simple numerical example. Let us suppose that the capital stock consists of ships, while output consists of shipbuilding (investment) and shipping services (consumption); that ships take one year to build and the capacity of the shipbuilding industry is 1 million tons, so that 1 million tons represents also the maximum output of new ships per annum. Let us further suppose that at the boom-level of income (*i.e.*, when the shipbuilding industry is fully utilised), the demand for shipping services requires a minimum of 12 million tons of capacity and at the depression level of income (when no new ships are built), a minimum of 8 million tons; and finally, that shipowners order new ships whenever the current demand exceeds 80% of their current capacity. On these assumptions the shipping park reaches a maximum of 15 million tons at the end of the boom (125% of 12 million tons) and a minimum of 10 million tons at the end of the depression (125% of 8 million tons): in each case because, at those levels, demand tends to fall below, or rise above, the critical 80% utilisation of capacity. If we now suppose that the service-life of ships is a fixed period of 25 years, the duration of the boom will be 5 years, and the duration of the depression will also be 5 years, since in 5 years the 5 million tons created in the last but three of the building periods (25 years ago) will be scrapped. If we supposed, other things remaining unchanged, the maximum shipbuilding capacity to be 2 million tons, the duration of the boom would be reduced to 2·5 years,

but by the same token the duration of the depression would be lengthened to 7·5 years—since, given the size of the shipping park at boom and depression levels, as determined by demand, the age distribution of ships would be such that there would be no ships due for scrapping in the first 5 years of any depression period, and the scrapping would be concentrated in the last 2·5 years of the depression phase, when the 5 million tons of ships built in the boom phase of 25 years before would disappear. Again we could assume that the service-life of ships is 35, 45 or 55 years instead of 25, with similar effects on the relative duration of boom and depression phases; though if the life-time were supposed to be less than 15 years the cyclical mechanism could not go into operation at all unless we also amended some of the other assumptions—*e.g.*, either the minimum demand for shipping services would have to be assumed to be less than the above 8 million tons or the maximum shipbuilding capacity would have to be assumed to be greater than the above 1 million tons per annum.[1]

If we now supposed (again, other things remaining unchanged) that while the *average* service-life of ships is 25 years, there is a fairly wide frequency distribution around that average, ships may be assumed to be scrapped at a (more or less) constant rate of 0·5 million tons per annum both during boom and depression phases (corresponding to $\frac{1}{25}$ of the *average* capital stock of 12·5 million tons). In that case the boom phase will last for 10 years (since, with an annual output of 1 million tons, it will take 10 years to *raise* the shipping park from 10 to 15 million tons), and the depression phase will also last 10 years (since, with a fixed rate of scrapping of 0·5 million tons, it will take 10 years for the shipping park to be reduced from 15 to 10 million tons). The period of each phase, and of the cycle as a whole, would thus be doubled, as compared with the situation in which (for technical or economic

[1] I am conscious, of course, of the fact that in the above numerical examples the figures were so chosen as to avoid the need for any overlapping as between the building periods and the scrapping periods. Assuming that the service-life of ships is rigidly determined by technical factors, this can be the case only when: (*a*) the boom phase takes up one-half or less of the cycle; and (*b*) the service-life of ships is an integral odd-number multiple of the period of the boom. Thus, if in the above example the service life of ships were assumed to be a rigid 20 years, there would necessarily be overlapping between building and scrapping periods, which would cause the boom to be prolonged to 15 years, followed by a depression phase of 10 years; if it were to be assumed to be a rigid 30 years, there would be a boom period of 15 years, followed by a depression phase of 20 years; and there may be other more complicated patterns. On the other hand, if the life-time is not assumed to be *narrowly* determined by technical factors—say, in the above example, ships are scrapped when they are over 20 but less than 25 years old—overlapping would be avoided as a result of the operation of economic factors, since there would be an incentive to keep old capacity in existence during the boom, and thus to concentrate scrapping in times of slump.

reasons) the actual disappearance of equipment is concentrated on depression phases; but otherwise the mechanism would operate in the same way.[1]

The most important factor in the whole mechanism is the capacity of the capital-goods industries, which, given the service-life and gestation period of capital goods, determines the rate of capital accumulation during the boom periods. The greater is this factor, the shorter the duration of the boom phase (both absolutely and relatively to the depression phase) and the greater the amplitude of the cyclical movement. The capacity of the capital-goods industries relative to the consumer-goods industries may in turn be assumed to depend on the proportion of income saved at full-employment income levels—in other words, on the short-run savings function. For supposing that maximum investment, as determined by this capacity, were initially less than full-employment savings, there would be an inducement, in each successive boom, to enlarge this capacity, relatively to the rest of the economy, until the deficiency was eliminated. Similarly, if this capacity in relation to the rest of the economy were initially greater than the proportion of income saved at full employment, some part of the capacity of the capital-goods industries would become permanently redundant—not being utilised even at the peak of the boom—and would thus tend to disappear. If, however, entrepreneurial expectation in the capital-goods industries were more sluggish than in the consumption-goods industries, it is quite possible that the capacity of the capital-goods industries was maintained at too low a level to secure full employment in boom periods, and the cyclical movement itself might be weak in amplitude and the booms relatively long in duration.

Looked at in another way, the mechanism depends on the assumption of a short-run savings function which, though it may be represented as being linear, must contain a negative constant. In other words, it is assumed that while the marginal propensity to save is constant, the average propensity to save is a rising function of

[1] It is important to emphasise therefore that this particular model is in no way dependent on the so-called "echo-effect"—*i.e.*, the bunching of replacement demand in time resulting from past discontinuities in building periods. If there is a wide scatter in the actual service-life of plant and equipment, discontinuities in building periods need not result in corresponding variations in the rate of scrapping—any more than annual fluctuations in the number of births tend to be reflected in corresponding variations in deaths a generation later. But even if the scrapping of equipment is perfectly continuous, there will be a bunching of investment in time as a result of the operation of the multiplier and the "accelerator."

income in the short period. Hence there is a minimum depression level of income at which (gross) savings are zero and a maximum boom level of savings which is attained when income reaches the full-employment level. If we ignore the fact that, for reasons stated above, the maximum rate of investment during a boom (as determined by the actual capacity of the capital-goods industries) may be consistently less than the investment needed for full-employment output, we can simply say that the amplitude and the character of the cyclical movement (*i.e.*, the relative duration of boom and depression phases) is determined simply by the character of the short-run savings function.

Cycle and Trend

The static model outlined above has no trend—which shows that it is not necessary to assume economic growth or dynamic change in order to account for the existence of fluctuations. Each depression phase lasts precisely as long as is required for the capital stock to fall to the same extent as it had risen in the previous boom; the capital stock, as well as the output, in the corresponding phases of successive cycles are identical. As a pure cyclical model it has therefore little resemblance to the cyclical fluctuations in the real world, the most characteristic feature of which has been that successive booms carried production to successively higher levels; while the creation of capital in boom periods has exceeded many times the net capital depletion in depression periods.

The significant point is, however, that a trend can be "incorporated" into the above framework of assumptions without upsetting the mechanism; and thus by this simple device it is possible to produce a model whose features show a far better resemblance to the observed phenomena. The model is capable also of absorbing "random shocks" of all kinds, such as wars, revolutions or revolutionary technical changes caused by major inventions, with no more consequence than of displacing (in time) the operation of the cyclical movement. It strongly suggests therefore that economic growth, as well as other dynamic and erratic changes, should be treated rather as the cause of aberrations from the pure rhythm of the static cycle than as the *sine qua non* without which the basic phenomena could not be accounted for.

The simplest way of introducing a "trend" is to assume a linear percentage growth in population over time. This will mean that the amount of capital created in each successive boom will be higher than in the previous boom (since in each case the ex-

pansion would tend to go on until full employment or full capacity in the investment-goods industries is reached; but in this case the capital-goods industries would themselves tend to be enlarged in each successive boom), while the capital used up in the succeeding depression-phases will be consistently smaller than the capital created in the previous boom-phase.[1] It is not certain (because it has not yet been worked out) how the introduction of a logarithmic trend affects the duration of the cycle or the length of the various phases relative to each other. My hunch is that a *logarithmic* trend might leave both these unaffected. While there is more capital created in each succeeding boom, there may also be assumed to be a greater capacity of investment-goods production to create it, so that the length of the boom could remain unchanged; while there is less capital (as a proportion of the total stock) destroyed during the depression, the rate of disappearance of "old" capital is also less (since a greater proportion of the capital stock is of more recent creation), so that the length of the depression phase would also remain unchanged. If this is correct, long booms and short depressions, or *vice versa*, would be promoted by an accelerating or de-celerating trend, rather than by the existence of a trend as such.

It is possible also to make technical progress (in the shape of a linear time-rate of growth in the productivity of labour) the cause of the trend; and so long as this technical progress is assumed to be "neutral"—*i.e.*, leave the ratio of capital and output in production unaffected—its effect on the model is no different from that of population growth. In fact, these two factors are additive—given both "neutral" technical progress and population growth, the trend will be the resultant of the two, since the rate of increase of full-employment output will be the sum of the rate of increase of productivity and of population. It would also be possible to assume that technical innovation is, on balance, capital using (*i.e.*, involving a net substitution of capital for labour) or else capital saving, though the precise consequences of this on the properties of the model are difficult to work out. Finally, it is possible—as Mr. Goodwin had done in one of his "models"[2]—to neglect the

[1] To explain this, it is necessary to assume that savings are a function of income per head, rather than total income—*i.e.*, that the savings function also "shifts to the right" with the rise in full-employment output, so that savings always fall to zero when actual output falls to a certain percentage of full-employment output. Alternatively, it could be assumed (as Hicks assumed) that there is some long-range investment which is autonomous and not responsive to changes in current output, and which is growing at the trend rate.

[2] Cf. "A Model of Cyclical Growth" paper presented to the Oxford meeting of the International Economic Association, September 1952.

replacement of capital altogether, and assume, in effect, that all capital, once created, is permanent. In that case the introduction of a trend would still create a cycle which is basically no different from the other models (though there would be no cycle, of course, in the absence of a trend). The accumulation of new investment opportunities over time would give rise to a periodic boom, in the course of which these opportunities were exploited. The savings-investment mechanism (or shall we call it, the multiplier–accelerator mechanism) would still ensure that investment does not proceed at a steady rate, but is "bunched" in time. The fundamental reason, which is thus common to each variant, is that: (*a*) the output capacity of the investment-goods industries is greater than the current rate of accrual of new investment opportunities—and it does not make any difference whether these new investment opportunities reflect the using-up and scrapping of old equipment or the growth of population, technical progress or anything else; and (*b*) that the economic system possesses no short-run stability at levels of investment which are below a certain maximum or above a certain minimum. Further, it is possible to introduce endless complications into the model which would tone down its sharp edges and crudities—as, *e.g.*, that investment is influenced by finance, monetary policy or rising production costs, etc.; that new inventions take the form (in part) of the creation of new industries satisfying new "wants," which would explain why some investments would go on even during a depression, etc.—though it is doubtful whether in our present stage of knowledge the laborious task of working out the consequences on the model of any particular type of complication would be really worth while.

It is thus seen that all the "dynamic" models that were recently presented to the world—such as Kalecki's amended model,[1] Marrama's,[2] Hicks's[3] or Goodwin's[4] (which all contain the same basic assumptions outlined above)—are all variants of the same thing, and, essentially, all consist of the superimposition of a linear trend introduced from the outside on an otherwise trendless model without altering, in any way, its basic character. Some of the authors mentioned deny this. Thus Professor Hicks thinks that "it is on the trend rate of growth that the whole cyclical mechanism depends"[5] and that in the absence of the growth in autonomous investment the cycle could not get off the

[1] *Studies in Economic Dynamics*, London, 1943.

[2] *Review of Economic Studies*, Vol. XIV, p. 34.

[3] *A Contribution to Theory of the Trade Cycle*, Oxford, 1950.

[4] *A Model of Cyclical Growth, op. cit.*

[5] *Op. cit.*, p. 108.

floor—or, at any rate, not for an inordinately long time.[1] Similar ideas were expressed also by Mr. Goodwin.[2] This, in my view, is mistaken, and must be due to an insufficient appreciation by the authors of the properties of their own model.

Finally, there is the illuminating piece of algebra produced by Mr. Harrod [3] and Mr. Domar,[4] according to which, given the savings function, there is only one particular rate of growth that can be permanantly maintained—a rate that is entirely determined by the relation of the savings function to the technical relationship between capital and output, and which is thus independent of the trend as given by the assumed rate of growth of population and of productivity. In the present context this need not detain us for long, since—as the two authors would themselves be prepared to admit—this " dynamic equation " is relevant only for determining the trend of a cycle-less economy, and not the trend rate of growth of an economy which does not actually maintain a moving equilibrium of growth, but proceeds by a series of investment booms, interrupted by slumps.[5, 6]

[1] *Op. cit.*, p. 105, note. Hicks's analysis suffers also from a confusion between the idea of " autonomous " investment (*i.e.*, investment which is *not* responsive to changes in current output) and the idea of " new " investment opportunities due to the growth of population and technology. There is no reason whatever why these two should overlap. It is perfectly possible for there to be no autonomous investment in Hicks's sense, and yet be a trend, due to the above factors; equally there could be autonomous investment in a trendless economy. In Mr. Goodwin's recent model, on the other hand, the trend is the direct outcome of the underlying growth in population and productivity, and not of the growth of " autonomous " (in the sense of " non-induced ") investment.

[2] "A Model of Cyclical Growth," *op. cit.*

[3] Harrod, "An Essay in Dynamic Theory," ECONOMIC JOURNAL, March 1939, and *Towards a Dynamic Economics*, 1949.

[4] *American Economic Review*, March 1947.

[5] In other words—to put the matter in Mr. Harrod's own terminology—the *actual* trend resulting from successive booms and slumps reflects the " natural rate " (*i.e.*, the growth of population and productivity) and not the " warranted rate." The " warranted rate " (interpreted, as it should be, as the rate of growth at *full-employment savings*) determines, *inter alia*, the duration of the boom, and also the length of the cycle, but not the trend rate of growth. This assumes, of course, that the " warranted rate " is higher than the " natural rate " —but this may be taken as a basic feature of capitalist society. If the " warranted rate " were *less* than the " natural rate," new investment opportunities would accrue faster (in time) than they are exploited through current investment; new investment would thus become steadily more profitable; and it may be supposed that the economic system would gradually evolve the institutional conditions necessary—by raising the profit rate and the amounts set aside out of profits—for a faster rate of exploitation, *i.e.*, for the " warranted rate " to rise. Indeed, the independent role accorded to the savings function in Mr. Harrod's and Mr. Domar's method of approach is one of the criticisms that one can make against their method as a tool for the analysis of *long-run* problems.

[6] Cf. also Joan Robinson, "The Model of an Expanding Economy," ECONOMIC JOURNAL, March 1952, pp. 52–3.

Mr. Harrod makes no claim, in his recent analysis, to put forward a complete model of the cycle; in his view, however, the " dynamic equation " provides the key to the existence of the cycle, since it is the peculiarity of any " equilibrium of steady advance " that it is surrounded, on each side, by " centrifugal forces." If it could be shown that a moving equilibrium of growth is necessarily unstable, while its static counterpart, the stationary equilibrium, is stable, this would indeed provide an inherent connection between the cycle and economic growth. But if our own analysis is correct, this is not so. Exactly the same assumptions which make the moving equilibrium of a growing economy unstable, will produce the same " centrifugal forces " around the stationary equilibrium of a trend-less economy;[1] in fact, the latter can itself be looked upon as a special case of the " dynamic equilibrium " where the equilibrium-rate-of-growth happens to be zero. Hence there is nothing in the assumption of a positive rate of growth as such (such as the assumption of a growing population, or technical progress) that serves as an *explanation* of the tendency to oscillation that could not equally be explained without it.

THE PROBLEM OF ECONOMIC GROWTH

So far, so good. But is this situation, from an intellectual or analytical point of view, wholly satisfactory? The trend itself is not " explained "; it is introduced as a datum. There can be no pretence, therefore, of these theories providing the basis for a theory of economic growth. Yet the very fact that different human societies experience such very different rates of growth—in fact, differences in rates of growth in different ages or in different parts of the world in the same age are one of the most striking facts of history—in itself provides powerful support for the view that technical invention and population growth, the two factors underlying the trend, are not like the weather or the movement of the seasons, that go on quite independently of human action, but are very much the outcome of social processes. The growth in population, in particular, is as much the consequence of economic growth as the condition of it. This is true both of situations of the Malthusian kind, where it is merely the consequence of a higher rate of survival brought about by an improvement of the means of subsistence, and where population growth is merely the

[1] On this point cf. also my article in ECONOMIC JOURNAL, December 1951, pp. 842–3.

passive consequence, or accompaniment, of economic growth; as also of situations where the acute shortage of labour resulting from rapid economic expansion directly stimulates the growth in numbers—as, *e.g.*, in America after the Civil War, or in England in the course of the Industrial Revolution.[1] The same is true of technical invention or innovation. Though new ideas, looked at in isolation, are the spontaneous product of the workings of the human brain, the kind of ideas that come forth, and their frequency, is very much a matter of environment. Few would deny that the greatly accelerated growth of the last 200 years, which is associated with the rise of modern capitalism, was essentially the product of forces endogenous to society; while the vast flow of technical innovation and of population growth, which accompanied this process and which alone made its realisation possible, were themselves the products of these basic social forces and not the initiating causes of it.

Where, then, are we to look for the ultimate factors responsible for the rate of economic growth in human societies? The English classical economists—if one can epitomise their views in a single word—thought they found it in Thrift. The basic factor responsible for growth and progress is the Rate of Capital Accumulation (which in the classical view was responsible for the growth of population as well as material capital); and capital accumulation, on their view, was largely a matter of the habits of thriftiness of the population—its willingness to forsake present enjoyment for future gain. At the present time we are not willing to accord such an important role to the propensity to save. This is not because—or not mainly because—we have learnt, since Keynes, that saving can be a positive impediment of progress, and not always a promoter of it. It is because it is now increasingly realised (perhaps also under the influence of Keynesian ideas) that the proportion of income saved in the community is not so much the result of basic psychological attitudes and propensities, as of the institutional framework of society, which is itself continually (though slowly and gradually) adapted to social requirements. The re-investment of the profits of business enterprise always has been, and still is, the main source of finance of industrial capital accumulation; we are now aware that the rate of accumulation is at the same time one of the main determinants

[1] The fact that in Western European societies in the last fifty to seventy years the increase in population so markedly lagged behind the economic growth potentialities (owing to widespread birth control and the control of immigration) should not blind us to the force of this generalisation as a broad historical tendency.

of the amount of profits that is thus available for financing.[1] Saving and Capital Accumulation therefore are in no different position from Technical Progress and Population Growth, as being one of the features that characterise progressive societies rather than as the ultimate stuff and substance which *makes* societies progressive.

The most plausible answer to the question why some human societies progress so much faster than others is to be sought, in my view, not so much in fortuitous accidents, like major discoveries, or in favourable natural environment (though no doubt all these are important as conditioning factors) but in human attitudes to risk-taking and money-making. The modern business-man or "entrepreneur," as featured in economic textbooks, with his distinctively speculative bent and his interests and energies concentrated on profit making, is clearly a product of capitalist society. But the rise of modern capitalism, in turn, cannot be explained except as the result of the growth of mental attitudes which find in risk-taking and money-making the means of giving expression to the individual's *ego*. Economic speculation here trespasses on the fields of sociology and social history; and the most that an economist can say is that there is nothing in economic analysis as such which would dispute the important connection, emphasised by economic historians and sociologists, between the rise of Protestant ethic and the rise of Capitalism.

An economy, which, over longer periods, shows a relatively high rate of growth is almost certain to be one which keeps "bumping against the full-employment ceiling" fairly regularly, and with reasonable sized bumps. It is an economy which, once set upon the path of rapid expansion, does not stop expanding until it comes up against the physical limitations of capacity or labour; and it is in the strength of the incentives to overcome such limitations that we must look for the main motive force for long-term dynamic growth. Scarcity of labour, as we have argued, directly stimulates population growth—both through immigration into a particular area and through stimulating a higher effective rate of natural growth. But prolonged scarcity

[1] That distinguished pupil and critic of English classical economics, Karl Marx, has seen this clearly; and this is perhaps one of the main aspects in which, on a purely analytical level, his doctrine departs from Ricardo's. Marx, however, (as far as I understand him), would regard the continuous growth of knowledge as regards the techniques of production—which goes on, in a sense, independently of society, but which shapes and determines the social relationships between men and the institutional framework of society—as the main "independent variable" of economic growth.

of labour is also the most powerful incentive to the invention and introduction of labour-saving devices,[1] just as shortages of physical capacity provide the incentive to the creation of new capacity.

The conclusion which emerges from this is that so far from the trend rate of growth determining the strength or duration of booms, it is the strength and duration of booms which shapes the trend rate of growth.[2] It is the economy in which business-men are reckless and speculative, where expectations are highly volatile, but with an underlying bias towards optimism, where high and growing profits are projected into the future and lead to the hasty adoption of "unsound" projects involving over-

[1] The fact that the productivity of labour in American industry, over the last eighty years appears to have risen at about twice the annual rate as in European industry, could be satisfactorily explained (in my view) only through the fact that the higher expansion-mindedness of American business created prolonged periods of acute labour shortage in the economy, which stimulated both the high rate of immigration prior to 1914 and also the invention of labour-saving devices, such as the belt-line assembly, the single-purpose machine tool, the methods of mass-production generally, and far-reaching standardisation. On the other hand, the sudden slowing down of population growth in the 1920s (largely the result of the immigration laws), by reducing the trend rate of growth, must have been a major cause of the severity of the depression in the 1930s.

[2] It is essential, of course, to suppose for this that the "boom"—implying a state of affairs where production is confined by physical limitations and not by effective demand—is a matter of some duration and not only a fleeting momentary phase in the course of the cycle. I believe that to have been the case with the "strong booms" of history (though not, of course, of all booms); and one reason for my dislike of the use of the "acceleration principle" as a device in trade-cycle theory is that it automatically excludes this possibility. With the acceleration principle, output "bounces back as soon as it hits the full-employment ceiling" in much the same way as a tennis ball when it hits a wall. (This is because in a simple acceleration model the adjustment of the capital stock to the change in output is assumed to take up the same length of time as the adjustment of output to the change in demand. Professor Hicks has attempted to relax this condition in his own model by providing for a *series* of acceleration coefficients, thus allowing for a change in output in a given period to give rise to investment in a whole series of future periods. However, his equations make no allowance for the related fact of a back-log of desired investment accumulating as a result of the investment industries becoming clogged up with the uncompleted investment orders of the past, in which case the rate of investment ceases to have any definite relation to the rate of change in output. It is implicit in Hicks's equations that *all* the investment that is profitable to be undertaken at any given level of output has either been completed or else is in process of building as soon as that level of output is reached. Thus if we applied his equations to our numerical example on p. 58 above, they imply that 5 million tons of new shipping is either completed or in the process of building at the moment when the expansion reaches the full-employment ceiling. But if the capacity of the shipbuilding yards is only 1 million tons, clearly not more than 1 million tons can be in process of building at any one time; and since the maximum expansion of output is reached when shipbuilding attains the rate of 1 million tons, there must be a large back-log of desired investment by the time the "ceiling" is reached, which would prolong the boom well beyond the "two periods" allowed for in his equations.)

expansion, which is likely to show a higher rate of progress over longer periods; while it is an economy of sound and cautious business-men, who are slow at reacting to current events, which is likely to grow at a slow rate. It is true, of course, that it is the very process of over-expansion during the boom which makes the ensuing slump inevitable. But the same cyclical force which causes booms to end after a time and be converted into slumps, also causes slumps to end and be converted into new booms; and the extent of the "over-expansion" in the previous boom influences to a major extent the degree to which the new boom surpasses the peak reached by its predecessor.[1]

This is not to suggest, of course, that the long-term trend of growth is *simply* a matter of the degree of recklessness of society's entrepreneurs. The external "conditioning factors" are still there—in the sense that there probably always is a *maximum* attainable rate of saving, a *maximum* attainable rate of population growth or a *maximum* attainable flow of new ideas. But the point is that the *actual* values of these variables, in any given society and at any given age, are not determined by their theoretical maximum values, but are capable of being slowed down or accelerated in accordance with the push or pull exerted by entrepreneurial behaviour. (Perhaps this idea could best be expressed in Mr. Harrod's terms by saying that while the "warranted rate" of growth and the "natural rate of growth" are two different things, they are not independent of each other, since the more the "warranted rate" tends to exceed the "natural rate," the more it will *bend* the "natural rate" in its own direction.[2])

Here at last we find the inherent link between trend and cycle that we were searching for. For if the above analysis is correct,

[1] This is particularly true of investment in investment-goods industries, such as steel capacity, etc. As mentioned earlier, expectations might be responsive to changes in current profits in the consumer-goods industries and yet be sluggish to respond to changes in demand in the investment-goods industries. In that case not only will booms tend to be weak, but the rate of growth in output between successive booms will also be small.

[2] Mr. Harrod seems to me to have drawn the wrong moral from his own analysis in suggesting that an excess of the "warranted rate of growth" over the "natural rate" will make "the economy to be prevailingly depressed," although "at first blush, one would suppose it to be a good thing that the line of entrepreneurial contentment should be one implying an attempt to push forward always at a greater rate than fundamental conditions allow" (*Towards a Dynamic Economics*, p. 38). Our own analysis would suggest that Mr. Harrod's "first blush" was right, and his subsequent analysis was wrong. What he did not allow for was that the "fundamental conditions" determining the natural rate of growth are not determined by Heaven—they are pliable (within wide limits) and can be pushed outwards or pulled inwards by the endogeneous forces of the economic system.

both the trade cycle and economic growth are the resultant of particular attitudes of entrepreneurs—more precisely, of the volatility of entrepreneurial expectations. As was stated at the beginning, the basic assumption underlying all recent models of the trade cycle is the dependence of long-term investment decisions on current profits: the speculative frame of mind which causes frequent and far-reaching adjustments of long-term expectations in the light of current experience. Without that no variant of the output–investment relationship, such as the "acceleration principle" or any other assumption, would work, and the system would tend to settle down to a stable long-term equilibrium. If expectations are responsive, but sluggish, we might get a moderate cycle, with weak booms and weak slumps and an equally weak trend. It is when expectations are highly volatile that the expansionary phase of the cycle is likely to be vigorous and sustained; that it will inevitably lead to a strong boom which will burst through the pre-existing "external frame" of the economy and carry it to a new and higher plateau. Once such a higher plateau is reached, the subsequent slump, though severe, will not mean a return to the previous depression-level; it will in time produce a new expansionary process from a higher "floor," leading to a new "ceiling." [1]

The same forces therefore which produce violent booms and slumps will also tend to produce a high trend-rate of progress; though the connection between the two is far too complex to be reducible (at present) to a simple mechanical model. And

[1] At first sight the proposition that higher volatility of entrepreneurial expectation as such promotes a higher trend rate of progress might appear paradoxical, since the stimulus provided by the greater optimism of the boom would appear to be offset by the greater pessimism of the slump. But my contention is that the effects of the two are not symmetrical. The worst that slump-pessimism can do is to interrupt the investment process altogether. But if the tide of boom optimism carried the economy to a higher plateau of productivity and of the standards of living, the cessation of investment in the subsequent slump will not mean a return to the "floor" of the previous slump—the "floor" will have risen—while the rise in the "full-employment-ceiling" as between successive booms is itself largely conditioned by the tide of optimism in booms. Of course, if entrepreneurial attitudes are in themselves assymetrical—if there is a consistent bias towards optimism—the stimulus to progress will be even stronger than if they are merely volatile.

The above view receives strong support from (and in fact is greatly dependent on) Mr. Duesenberry's analysis of consumption behaviour and saving in *Income, Saving and the Theory of Consumer Behaviour*, according to which once a higher standard of consumption is reached in the boom, the consumption function shifts, and the subsequent fall of consumption in the slump is less than it would have been otherwise. Equally, it supports the view that the maintenance of consumption in slump periods by means of anti-cyclical fiscal devices, unemployment pay, etc., must tend to accelerate the trend rate of growth of the economy.

Schumpeter's hero, the "innovating entrepreneur," whom we dismissed so summarily and rather contemptuously at the beginning, is found, after all, to have an honourable place, or even a key role, in the drama—even though we prefer to endow him with a rather more variegated character. He is a promoter, a speculator, a gambler, the purveyor of economic expansion generally, and not just of the "new" techniques of production.[1]

NICHOLAS KALDOR

King's College,
Cambridge.

[1] The conclusion that in a capitalist society—*i.e.*, in a society where investment decisions are made by a multitude of entrepreneurs in the light of profit-expectations—the trend rate of growth is likely to be all the greater the more powerful are the cyclical forces, is not to be taken to imply that progress must necessarily take the form of fits and starts, whatever the institutional arrangements of society. If investment were centrally planned and the consumption function continually adjusted to secure full employment (given the planned rate of investment) there is no reason, in theory, why progress could not take place at an even rate.

THE FINANCIAL ASPECTS OF TOWN AND COUNTRY PLANNING LEGISLATION

It is generally agreed from experience that no ideal solution to the problems of compensation and betterment can be provided in terms of relating gains to losses. Theoretical reasoning leads to the same conclusion. Two questions therefore confront us: why is this so, and what are the alternatives that remain?

Those unfamiliar with the compensation and betterment problem may care to think of it in the following terms. Town planning attempts to secure the best use of land, taking into account social as well as individual advantage. Any such interference provides for a land-use pattern different from that which would otherwise have prevailed, and disturbs income expectations and market values, occasioning for some landowners fortuitous gains, for others losses. On the view of equity most widely accepted, and from the standpoint of saving in compensation cost to the public, these gains and losses should be offset as far as possible. At the same time, however, it is also assumed that land should remain in private hands and be allocated to its permitted use through the medium of the market. These objectives conflict; the taking away of the gains from benefited landowners reduces market prices below effective minima, so that land is seldom made available for development; or if it is, only at such prices that after the payment of any levy the overall cost of development is prohibitive. The problem therefore is to construct a compromise between the minimising of compensation costs to the public on the one hand and the efficient operation of the market on the other. Several such compromises are in fact available; the ultimate question is which is the most satisfactory?

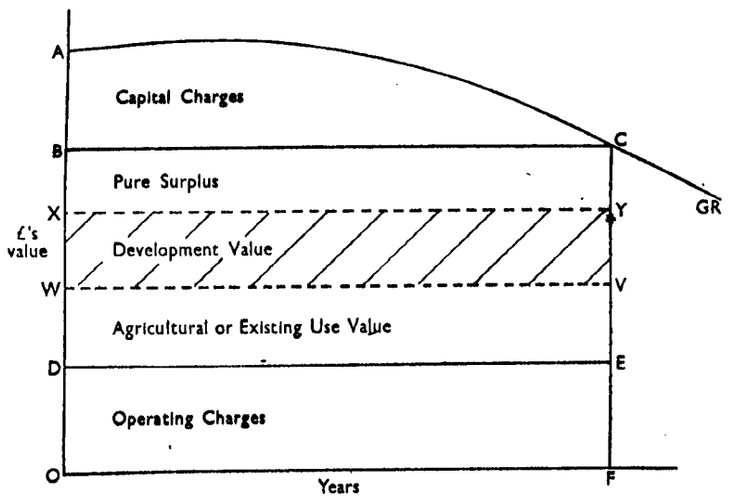
I

In the first part of this paper we are not dealing with the problem in its entirety but only with that part of it to do with the relating of the gains to the losses, without worrying about the requirements of the market. These are not mentioned until we discuss the various approaches that can be made to the problem in the second part of the paper.

It will help at the outset to have a clear picture of the land values to be mentioned. The accompanying diagram relates to

the calculations a builder might make in connection with a new project.[1] In it, *OF* measures the estimated economic life of the building; the ordinates of the curve *GR* measure the anticipated annual gross rental; the areas *ACB* and *DEFO* represent respectively the capital and operating charges associated with the building; and it is assumed that the builder's own opportunity cost is included in the capital charges *ACB*. This leaves the builder with the residuals measured between the lines *BC* and *DE* out of which to pay for the land.

The total capitalised value of all these residuals is the builder's reserve price for the site. This is the sum the builder will be



prepared to pay under the most pressing circumstances rather than be denied the site's use. We can think of it as being equivalent to the whole of the area *BCED*.

Market price is the amount of this reserve price the builder is required to surrender in order to exclude other builders from the site. Normally less than the reserve price, it is equal to it only in the hypothetical case of perfect competition. Market price is shown by the area *XYED*, the area *BCYX* is pure surplus.

Finally, market price is divided into agricultural-use, or existing-use, value and development value. Agricultural-use, or existing-use, value is the price the site would fetch supposing it to be restricted to its existing use, and development value is the increment attaching to it because it is eligible for development in a

[1] This has been adapted from the basic valuation formula given by Ratcliff in *Urban Land Economics* (McGraw-Hill, 1949), p. 357.

higher use. Agricultural-use value is shown by the area *WVED*, development value by the area *XYVW*. What we have to say is concerned mainly with development value.

The most convenient way of illustrating the points we wish to make is to start by re-examining critically the concept of " shifting values." The effect of planning provisions on development values, we are told by the Uthwatt Committee,[1] is not to destroy these values, but merely to shift them from one place to another. In the case of new development, if permission to develop is refused on one site but granted instead on another, the development value that would have crystallised on the first site is not eliminated, but merely transferred to the second. And similarly, in the case of redevelopment, where land users are required to move out from congested areas the loss of development values there is just offset by the new development values created as a result of the users settling elsewhere. So it is said the gains and losses resulting from planning provisions, theoretically, at least, balance out, and the claims for compensation for loss can be met wholly out of the gains.[2] In showing that this conclusion is false, that the gains and losses do not necessarily balance out, but that either one may exceed the other in an unpredictable fashion, we discover something of the underlying reasons why attention in recent years has been given to " once-for-all " as opposed to " continuing " solutions. Frustration in the attempt to adjust continuously the gains and the losses has led to the demand for a new approach. We are not dealing with the undefined practical difficulties in handling the gains and losses alluded to by the Uthwatt Committee, but with the underlying theoretical reasons that make nonsense of that Committee's suggestion that there is such a thing as the conservation of land values.

One reason why the gains and losses of development values resulting from planning provisions may not balance out has already been given by Sir Arnold Plant.[3] If permission to develop is refused on a particular site, it is possible that the development may not occur at all thereafter in this country. The builder may be entirely discouraged from undertaking his project, or he may transfer his activities abroad. In either case there will be a loss of development value but no corresponding gain, at least from the viewpoint of our own society. This is a valid argument, but not,

[1] Final Report of the Expert Committee on Compensation and Betterment 1942, Cmd. 6386, p. 15. [2] *Ibid.*, p. 23.

[3] Address to Chartered Auctioneers' and Estate Agents' Institute, March 3, 1949.

I think, an important one. For one thing the range of alte natives available to builders looks like being fairly wide; fc another, the development plans themselves are extremely flexibl Any inhibitive effect is unlikely to be large, and anomalies ca quickly be taken care of. It is far less serious than the inherer objections which can be brought against the concept.

To say that a particular form of development gives rise to th same development value wherever it occurs—and that is virtuall what the shifting-value concept as put forward by the Uthwat Committee says—apart from inferring infallibility on the part c the planner, is to imply two things: first, that there is a specia relationship between the development value attaching to a sit and the gross rental earned by the building standing upon it; an second, that a given quantum of social and economic activitie always gives rise to the same total of gross rentals, however thos activities are distributed. It can be shown that both of thes propositions are false.

Let us first consider the relationship between developmen value and gross rental. If there was anything special about thi (that is to say, if it was possible to predict what the developmen value associated with a particular building was likely to be fron the gross rental earned by it), then surely we would not expect t find the determinants which are peculiar to development value varying in the arbitrary way they do. Either their variation would follow a predictable pattern or the determinants them selves would be common to both development value and gros rental. This is not the case.

The first determinants, working down to development valu from gross rental, are the capital and operating charges associate with the building. These are affected not only by the form of th building but also by such factors as the physical properties of th site, its shape, topography and the nature of its sub-strata, th local cost structure of building labour and materials, the site' annuity of wind, rain and sunshine, which materially affect main tenance costs, of course, and the local rate burden. Then among the determinants of market price are such local variables as th number of sites available to the builder in the immediate vicinity the number of builders interested in these and the reserve price of these builders. Finally, development value is determined by the site's agricultural-use value, and this depends on the fertility of the soil and nearness to local agricultural markets. All of these factors are peculiar to particular sites, and do not necessarily have any significance for gross rental at all. On account of any or al

of them, therefore, it is possible for the development values attaching to alternative sites to vary even when the form of development associated with the sites and the gross rentals earned by them are identical. So for the gains and losses of development values resulting from planning provisions to balance out, all these factors we have just mentioned must be the same, or their differences compensating, in the case of all the sites associated with each shift in values. Neither of these possibilities can be considered seriously; nor, we suggest, is the amount of unbalance implied predictable.

What we have just said only disproves that there is a special relationship between development value and gross rental. It still remains true that gross rental is a fundamental determinant of development value. The other reason we give why the gains and losses of development values are unlikely to balance out turns upon this connection. It concerns the second proposition, that a given quantum of social and economic activities always gives rise to the same total of gross rentals, however those activities are distributed. The wider truth here is that the total of gross rentals, and hence the amount of development values, depends not only upon the quantum of social and economic activities, but also upon two further factors that vary considerably from one form of urban layout to another: the level of transport costs and a factor referred to as the friction of space introduced into the urban pattern.

The fact that the social and economic activities we want to perform in a single place cannot all be performed in that place, but must occur instead over a wide area, means that each of us in the conduct of our daily affairs is confronted with the friction of space. To overcome this, as a society we build at higher densities as far as other amenity and health requirements allow, and develop and improve the means of transport. The one involves higher urban rents, the other travelling costs. In a sense therefore, that part of gross rental which is attributable to the convenience of location, and that part of transport costs not incurred for the pleasure of travel or as a result of wanting to perform different functions in separate places, can be regarded as the components of the cost of friction. What is more, there is a special relationship between these components; a rise in the price of either convenient locations or transport facilities is likely to lead to greater dependence being placed on the other.[1] In the general case therefore the total of gross rentals will remain the same under planning provisions, given the quantum of social and economic activities, only if the relevant part of transport costs and the total cost of friction remain the same also. This is the second condition for a balance between the gains and losses of development values resulting from planning provisions. It is not merely a matter of judgment to say that it is unlikely to be satisfied; one of the main aims of the planner is to make sure that it is not, virtually so at any rate, since his major task is to reduce the amount and cost of friction in our unplanned cities.

[1] For a fuller account of this relationship see R. U. Ratcliff, *op. cit.*, pp. 371–3 and references there cited.

As an illustration, take the case of an industrialist who is directed farther away from a town than his present siting. Assume that the site he is directed to is identical in every way with the first from his own viewpoint, that it would earn the same gross rental when developed, and give rise to the same development value. On the face of it then, the planning provision has not affected the total of gross rentals at all, and there is a balance between the gains and losses of development values. But there is still to be taken into account the consequences of the change as regards the workers and the houses they live in. The increased friction of space confronting the workers in getting to their place of work imposes upon them an additional burden in the form of higher transport costs. At the same time, however, it makes the houses they live in less-convenient dwellings than before. If and when this last factor tells in the housing market it means that the workers will be able to pass on part of their initial burden in the form of lower gross rentals. In that event the total of gross rentals will be affected and the seeming balance between the gains and losses of development values upset.[1]

There are two inherent reasons then why the gains and losses of development values do not necessarily balance out. First, because there is no special relationship between development value and gross rental; and second, because a given quantum of social and economic activities can give rise to different totals of gross rental, depending upon how the activities are distributed. Moreover, if what we have said is true, without special knowledge of each case it is impossible to predict whether gains or losses will predominate. And as a corollary, two projects identical in form and enjoying the same advantages of location as measured by

[1] The fact that the friction of space is increased in this example is not necessarily inconsistent with what was said about the planner seeking to reduce this factor. This may well be the outcome of many individual decisions before the overall objective is achieved.

their gross rent-earning capacitites can give rise to different development values, depending upon local physical and market variations.

How does this affect the problem of compensation and betterment? As long as the concept of the conservation of land values was accepted, it was valid to think of a solution to the problem either in terms of the gains or losses singly, for it could be assumed that any identifiable gain, for example, matched a corresponding equivalent loss somewhere else. But now the situation is different. If a formula is drawn up in terms of the gains, it may well be that the contributions from benefited landowners will exceed the losses in some cases; if it is drawn up in terms of the losses there will be no saying whether the gains will always be sufficient to meet them; in either case, or with a conditional combination of both, developers undertaking seemingly identical projects can find themselves contributing disproportionately. On any reckoning therefore a solution would only need to meet the case of fairness and adequacy in matching the gains to the losses in one set of circumstances to secure that it failed to do so in many more. There could be no apportioning the loss either amongst benefited landowners or between benefited landowners and the public, in accordance with any predetermined ratio, the public would have to stand by as residual legatee to meet deficits and receive surpluses, and individuals' contributions would not stand comparison. In the light of this evidence we find reason for believing that a fair and practicable solution cannot be provided to the problem even in principle, and justification for the change in approach that was made to the problem by the Uthwatt Committee.

There is a further difficulty arising, not from shifting values but from floating values, which is worth mentioning because of its topical interest. It has been discussed again only recently in connection with the Government's latest White Paper. The question arises when it is decided to pay compensation in respect of lost development rights, at what price shall these rights be regarded—at their full market price as claimed by landowners, or at what is held to be a fairer price, namely their true actuarial value, or value to the State. For it is argued that because owners are given to optimism respecting the prospects of development settling on their own sites, as long as potential development value is still "floating," their claims *in toto* for compensation when development is prohibited over a large area exceed the true development value as calculated on an actuarial basis. That is to say the amount of development that would have taken place in

the area would not have been sufficient to fulfil all the expectations. So it is said that instead of the claims being met at their full market price they should be written down first to their true actuarial value. In stating our own misgivings about this final conclusion we will be illustrating yet another obstacle in the way of an entirely fair solution, and justifying once again an official change in policy.

A practical reason for doubting the wisdom of writing down the full claims has been recognised from the start. At best the written-down value can be only an intelligent guess. So care must be taken that a greater injustice is not done to landowners than that spared the State. We endorse this view fully, the more so since now it is possible to understand that the intelligent guess covers not only estimating the future demand for accommodation in the area, but also allowing for the entire gamut of factors we have mentioned in connection with the problem of shifting values. We would like to draw attention in addition, however, to a second unsatisfactory feature, which so far appears to have escaped notice.

Put briefly our point is this: the extent to which development values are over-estimated in total by landowners when development is prohibited over a wide area is not only a function of the innate tendency to optimism on the part of landowners, but also of certain quantitative relationships inherent in the phenomenon that vary considerably from one case to another. So that the degree of over-estimation is not everywhere the same; and in writing down the value of the development rights, as is done, uniformly, injustice occurs as between landowners in one place and those in another. The two main relationships we refer to are these: first, the ratio between the number of landowners in the prohibited area and the size of the prohibited area; and second, the ratio between the amount of land that would actually have been developed and the size of the prohibited area.

Regarding the first, it seems reasonable to suppose that the more owners there are to the acre making optimistic estimates, the greater will be the total effect of their optimism, and consequently the degree of over-estimation. There are three reasons for this. If it be accepted that optimistic estimates are made at all, then this must be due to the plurality of ownerships. For a single owner of all the land surrounding a town could not possibly overestimate the prospects of the anticipated development of the town occurring on his land; there is nowhere else for it to settle. Nor would he pay more than the true development value when pur-

chasing the land. Thinking in terms of a lottery, an individual would not buy all the tickets in it, and probably he would be unwilling to buy a half or even a third of them. Yet he is fully prepared to be optimistic about his chances when buying only two or three tickets. This suggests that the degree of optimism is determined amongst other things by the ratio between the speculative outlay and the prospective gain. Relatively smaller outlays, that is a larger number of speculators, would produce a greater amount of optimism. Secondly, accepting Professor Shackle's view[1] that expectations are based on potential surprise not numerical probability, it seems that the degree of over-estimation must increase with the number of owners because, in his terminology, the total focus gain is higher. For each owner the focus gain is determined mainly by the total anticipated development value, and is largely independent of the number of other owners making similar calculations. It is enough that each owner should know of no solid, identifiable reason why the development should not settle on his own site for him to attach a relatively high focus gain to the speculation. On this reckoning the focus gain exceeds the true actuarial value. What is more, the focus gain for each additional owner is related to the same total development value, if his holding is capable of accepting all the development, whereas the true actuarial value falls with each further subdivision of the land. So the total degree of over-estimation must increase with the multiplicity of ownerships, at least up to the point where each holding is just capable of receiving the whole of the anticipated development. Finally, it is probable that small speculators will be less well-informed that larger ones. If so they are more likely to be influenced by the gains that are made out of land speculation than the losses, since unless the latter are exceptional, they will tend to pass unnoticed. Regarding the second ratio, it is self-evident that the higher the proportion of the prohibited area that would have actually been developed, the less scope there is for over-estimation.

Therefore, the inflation of development values is likely to be more marked in some areas than in others, and a differential write-down is the only fair way to deal with them. But there is the difficulty, even supposing such a write-down was practicable how would landowners react to their differential and seemingly unfair treatment? Recognising the measure of real inequity introduced as between landowners by a uniform write-down and

[1] G. L. S. Shackle, *Expectation in Economics*, (C.U.P.: 1952), pp. 91–2.

the danger inherent in intelligent guesswork of doing landowners in general a greater injustice than that spared the State, we are inclined to believe that the Government is right in returning to the full value of the admitted claims as the basis for compensation for the existing development values, until those who argue to the contrary can put up a more convincing case.

II

So it is apparent, even from considering the compensation and betterment problem in its narrowest sense, that is, without taking any account of the requirements of the market at all, that an entirely fair and adequate solution cannot be provided. This being so, what are the alternatives before us, and the limitations attaching to these? Altogether we consider three views: no detail is intended, nor are we evaluating except in a limited economic sense. Our main purpose is to give a general impression of the various views of equity and lines of thought on different solutions that have run through the debate, so that finally it may be possible to appreciate the present position a little more easily.

The first view of equity we take is the most popular and also the most social that is held in connection with the problem. It is distinguished by the fact that it focuses upon the nature of the land values involved. Deriving initially from the real-cost theory of value inherent in the Ricardian theory of rent, and finding support in the unearned increment arguments of John Stuart Mill and Henry George, it argues that because development values arise primarily out of the natural growth of society they are unearned, and do not give rise properly therefore to individual claims at all, but only to social ones. Thus, in the event of their being lost under planning provisions, there is no real need to compensate for them, except perhaps in special circumstances; and those accruing fortuitously to benefited landowners are properly taxable, like all development values whether the outcome of a planning provision or not, at 100%. So it is concluded that the simplest and most equitable solution to the compensation and betterment problem is to vest all development rights in the State at once, and to arrange for their conditional sale or letting when developers wish to exploit them. The only need to pay compensation is in respect of development values existing at the date of the enacting legislation, which might have been acquired by their owners under a treaty of sale. In essence this was the conclusion reached by the Uthwatt Committee, albeit on the grounds

of expediency and out of appeal to Common Law rather than to the particular view of equity here described, and was the basis, principle of equity as well, for the solution introduced in the 1947 Act.

To the extent that it secures minimum compensation costs to the public it is a success, but otherwise there is little to be said for it on economic grounds. It is entirely inconsistent with the rest of our economic thinking, since it ignores the principle of opportunity costs, and inconsistent as well with the operation of a free land market. Acceptance means that, strictly speaking, we should attempt to identify the lowest use value of every other factor of production, declare all increments over and above these to be unearned, and tax them at 100%. Nor rightly could we stop there; since we are looking for the portion of value due to the growth of society, well nigh the whole of the lowest use value would be taxable as well. As for its inconsistency with the market, the trouble here is that it takes away from landowners all incentive to part with their land when it is required for development. To overcome this, either the principle of equity has to be compromised up to the point of leaving with landowners enough of the development value to induce them to sell their land when it is wanted; or the market must no longer be relied upon to perform the function of calling forth new supplies of land for different uses. The freehold must be vested in a public authority so that there is no question of the land being unavailable.

The second view we consider is the complete antithesis. Its distinction is that it focuses upon the function of private ownership. It is the job of the private owner to see that his land is put to the best use. This involves him in a period of waiting, and in the risk of loss in that he may ultimately be left with his land undeveloped or may have to accept a lower price for it than one previously offered. The value increment he receives is the reward for assuming this risk, and in an approximate way is commensurable with his sagacity and foresight. Thus development values are earned, not unearned, increments, and should properly be left with the landowner. So if they are lost under planning provisions they should be compensated for in full; and no tax should be levied on benefited owners, because they are only receiving their due. It is no strong argument to say that planning has eliminated uncertainty and therefore the need for risk bearing, for planners are not infallible and the plans themselves are flexible.

Virtually there is nothing to say about this view from an economic angle, except that it is entirely consistent with the rest of our economic thinking and accommodates perfectly of course the working of a free land market. But equally obviously, its main drawback is that the whole cost of compensation falls on the public, benefited landowners retaining all they receive. How far this is acceptable is a matter entirely for subjective evaluation. Presumably one would have to be satisfied that the cost of compensation was less than the social cost of disturbing the system of land tenure.

Finally, a third view standing some way between the other two as regards its social bias, considers the problem from yet another angle, that of the benefits conferred by the planning provision. It owes most to the betterment principle originally incorporated in the early Town Improvement Acts, and subsequently officially recognised by the Select Committee of the House of Lords on Town Improvements in 1894. It is perfectly true that individual landowners benefit from planning provisions to the extent that the development value of their land is enhanced, but so also does society benefit in the form of improved urban lay-outs and better living conditions generally. Therefore rather than benefited landowners bearing the whole cost of compensation, would it not be more reasonable for them to share the loss with the benefited public as well, the individual owners contributing not more than the measurable benefit they have received from the planning provision, and the public standing the remainder? This would involve the public paying the compensation as the loss occurs and collecting some part of the development value when it is realised.

This it will be recognised is a continuing solution; its success or failure from an economic view depends on three things: first, whether the part of the development value deriving as a direct result of the planning provision can be identified apart from the increment that would have accrued in any case as a result of the growth of society; second, whether the taking away of the appropriate portion of the development value would impair the functioning of the market; and third, whether valuation practice is adequate to recognise the separate values that would have to be identified uniformly and with certainty. As regards the first of these, it is hardly conceivable that the two components of development value are distinguishable, indeed it can be questioned whether the idea of a development value consisting of these two components is valid at all, for as the Uthwatt Committee pointed out, since there will be an over-riding power to say what shall and

what shall not be done with all land, in a sense all development value is attributable to planning decisions. On the second point, whether the levy made would impair the operation of the market, we can agree that it would not, only if first we accept that there is an element of absolute or pure economic rent in urban ground rents, and secondly, if the amount of the development value taken did not exceed this amount. As regards the third, the adequacy of valuation practice, it is only necessary to say that it is difficult enough ascertaining market price, let alone value components that might not be there. As a practicable proposition therefore this view will probably reduce itself to no more than this; development values would be restored to private owners, who would receive compensation for them in full in the event of their loss, and an annual planning levy would be imposed on all developed land, which for the want of adequate valuation techniques would have to be at a flat rate per acre low enough to secure that the poorest developers could pay it without feeling inhibited. The difference between what was paid in compensation and what was collected in planning levies would be regarded as the public's share of the loss. Its merit over the first view is that is does not disturb the system of land tenure and is consistent with the operation of a free land market. It does not, however, secure such a low compensation cost to the public. On the other hand, it secures a lower compensation cost than the second view without being any less consistent with the operation of a free market.

Briefly these are the alternatives before us and their relative strengths and weaknesses so far as our present interest goes. Let us finally look at recent legislation and policy recommendations in the light of what we have been saying.

All official policy in post-war years has stemmed from the report of the Uthwatt Committee, whose solution corresponded broadly with that at the end of the first view we described. However, there have been important differences and changes.

The Uthwatt solution, whatever may be said of its practical drawbacks, was at least internally consistent. While the development rights of undeveloped land were to be vested in the State, provision was also to be made for the public acquisition of land when it was required for development. It was consistent, too, in that it sought to make a betterment levy on all development values as they appreciated, not merely as they were newly realised. In the matter of compensation for the existing development rights the Committee came down on the side of those who argued for relating it to true actuarial value, not full market price.

The Town and Country Planning Act of 1947, without achieving anything more by way of securing a solution to the compensation and betterment issue than the Uthwatt Committee's Report, destroyed the latter's essential consistency. Proclaiming an even stronger social conviction, it relied to an even greater extent on the working of the market. The development rights of all land were vested in the State; claims for compensation for them were not admitted as a matter of right, but only as a means of avoiding hardship; whilst the recommendations to provide for municipal ownership were ignored, except with regard to land associated with comprehensive redevelopment. The ground was laid well enough for minimising the cost of compensation to the State; but no provision was made for securing that the supply of land was forthcoming at its proper price when required, except in one section of the Act, which it was hoped would not be frequently invoked.

This was the situation the present Government set out to retrieve in its White Paper[1] last November. It has done so at the expense of equity. To satisfy the requirements of the market it has compromised the principle of equity underlying the 1947 Act, not merely to the extent of leaving with landowners sufficient part of the development value to induce them to part with their land when it is wanted, but to the extent of leaving with them the whole of the development value. But this is so only in those cases where it has been decided to let the market mechanism operate, which is far from universal. The categories of land subject to compulsory acquisition are retained as in the 1947 Act, and in such cases the development value is not included in the purchase price. Thus if an owner is fortunate enough to find a private developer to buy his land he can realise the development value and keep it; if he is unfortunate enough to have his land compulsorily acquired he receives only the existing-use value plus any other value existing in 1947. The new proposals then, not only compromise the principle of equity embodied in the 1947 Act, but introduce a considerable measure of inequity as between the treatment of different landowners on their own account. And, of course, to the extent that no development charge is collected, they do not secure the minimum of cost of compensation to the public originally intended by the Uthwatt Committee and the sponsors of the 1947 Act. They are, however, workable.

May I conclude with a personal opinion. Having departed so far from any identifiable concept of equity, having settled for a

[1] Amendment of Financial Provisions, Cmd. 8699 (H.M.S.O., November, 1952).

higher compensation cost to the public than that originally envisaged through the vesting of development rights in the State, and having created so much inequity as between different landowners in order to make the variations on the Uthwatt theme workable, might it not be time for simpler thinking in this matter? If so a continuing solution after the kind indicated at the end of our third view might fit the bill—in brief the restoration of all development rights to private owners and the imposition of a flat annual planning levy on all developed land.

Liverpool University. H. R. PARKER

DEVELOPMENT CHARGES AND THE COMPENSATION-BETTERMENT PROBLEM

IN his careful and detailed analysis of the effects of the Town and Country Planning Act of 1947 on development as a result of the system of Development Charges, in the June issue of the ECONOMIC JOURNAL, Mr. Turvey rightly stresses "the allocational aspects." Indeed, he argues that "at least in recent years, more attention seems to have been directed to the distributional aspects than to the allocational aspect." [1] While agreeing that the allocational aspects are the most important, we may doubt whether it is in fact true that these have been neglected. The disagreement rather arises as to the norms by which the allocational aspects are to be judged. Mr. Turvey, without explicitly stating as much, lays great stress on the efficacy of the free market in land in allocating resources, whereas those responsible for the 1947 Act held a different, and equally tenable, doctrine. After dealing with this fundamental issue, we turn to some detailed points in Mr. Turvey's analysis of the market in land. It does not seem that his strictures on the doctrines of shifting and floating value are entirely justified, and he exaggerates the effect of development charges in preventing development. Many of these points seem to arise from his *a priori* assumption of the efficacy of the free land market.

DISTRIBUTIONAL CONSIDERATIONS

One *obiter dictum* of Mr. Turvey's on compensation can hardly be left unmentioned. He argues against compensation in terms of 1947 values on the grounds "that what is considered just must depend on expectations about the future movement of the general price level." [2] This does not seem so. If the Government on a given date says that it will buy up an asset at market prices ruling at the date in question, it acts perfectly fairly, and makes the asset "gilt-edged." People who keep such assets know perfectly well that in future they have a fixed money value, and if they prefer assets whose values fluctuate with the value of money, they can exchange them in the market. The determining factor is not expectations about the future course of prices, but the expectations induced by Government action. A similar argument applies to the precedents of the 1932 Planning

[1] P. 300. [2] P. 315.

Acts. Whether wise or not, by excluding compensation in certain cases, they gave notice once and for all that in future landowners should not expect more than a given value for their property; hence, except for those foolish enough to speculate on changes in Government policy, the values were destroyed once and for all.[1]

Town-planning and Social Costs

The main objection to a free market in land as a means of providing for the best use of land is that developers take account only of private costs, whereas social costs, both pecuniary and non-pecuniary, are far more important to the public as a whole. There would be no need for town-planning at all if there were not some discrepancy between private and social costs in this field. There will indeed be few who will dispute the need for some town-planning. The problem is rather the weight to be given to market values in determining the proper planning policy. Mr. Turvey adopts a moderate position in stating that he does not mean to imply—

> "that the current development value of the property is the only factor relevant to the decision whether to impose a restriction, but merely that it is one of the many factors which should be taken into account. *Ceteris paribus* the greater is the development value the smaller will be the gain (or the greater the disadvantage) of preventing or limiting the development whose prospect confers value upon the land in addition to that arising from its existing use." [2]

This is unexceptionable, but it may be questioned whether the implicit importance that Mr. Turvey gives to the *ceteris paribus* clause is not one-sided. At the one extreme would be those who argue against all town-planning at all, at the other extreme what we may call the "town-planning attitude," [3] that the importance to be given to development values is minimal. In this case, there are good reasons for distrusting the market mechanism, and thinking that the truth lies nearer the town-planning attitude.

The reasons for thinking that the land market does not reflect social values and that town-planners need pay its valuations

[1] See Mr. Turvey's arguments in note 1 on p. 316, and accompanying text. There may have been some unfairness in the delay between the passing of the 1947 Act and the assessing of the value of claims, during which period claims were virtually unsaleable. Similar problems have arisen in compensation for coal-mining assets. [2] P. 316.

[3] It may be that there are many town-planners who would adopt an attitude nearer the other extreme, but in general it would seem that the architects and town-planners tend towards this extreme.

little attention have in fact been given in the Barlow Report [1] and the various planning reports, such as those for London and Greater London, and for other large cities. Planning proposals for these regions do in fact involve a deliberate flouting of the pattern of land values that a free market produces, and it is generally accepted that this is desirable, on long-run social grounds, if not because of the pecuniary costs borne by public authorities that private developers do not take into account. Thus the Uthwatt Committee openly stated that "under a system of well-conceived planning the resolution of competing claims and the allocation of land for the various requirements must proceed on the basis of selecting the most suitable land for the particular purpose, irrespective of the existing values which may attach to individual parcels of land." [2]

Whether this attitude is right or wrong cannot be discussed here; it is clearly not a matter of economic theory, but requires a general social and moral judgment taking into account a wide range of social facts. Mr. Turvey never openly faces the issue, but implicitly introduces a series of assumptions as to the importance of the land market. Thus one of his criticisms of the present Government's proposals as given in Cmd. 8699 is that the compensation figure to be used in future, because it is to be based on 1947 values and not current values, will not be "useful in deciding whether or not the planning restriction in question ought to be imposed." Furthermore, he thinks that the fact that Local Authorities will not have to pay compensation for planning restrictions "*may* lead some planning authorities to impose too many restrictions." [3] In the case of acquisition of land by Local Authorities, where 1947 development values will have to be paid, a Local Authority may be led to buy a site that is cheaper to them, but "with the higher current market value and therefore, *cet. par.*, not the site which (from the allocational aspect) should be chosen." Again, "compensation at market-value would reduce the need for wisdom and make valuation for compensation less arbitrary." [4] This assumes, as in the discussion of the results of the Central Land Board's activities, that these effects are important, which might well be disputed by someone who had less faith in the allocative efficiency of the market in land.

It is perhaps because of his neglect of the "town-planning attitude" that Mr. Turvey adopts the attitude he does to the

[1] Cmd. 6153. Implicitly, if not explicitly.
[2] Cmd. 6386, para. 22. [3] P. 316. [4] P. 317.

question of shifting value. Of course "there is no economic law of the conservation of value," but it does not follow from this, as Mr. Turvey seems to assert, that planning inevitably destroys total values.[1] There are two possibilities: either there is a net loss of values as a result of planning interferences or there is a net gain. It seems that, whereas Sir Raymond Unwin undoubtedly stated a belief in a 100% shift of value, and the Uthwatt Report asserted that "aggregate values are not substantially affected, if at all," the more important issue is in the latter's assertion that "the public control of the use of land . . . does not destroy land values."[2] The truth of this assertion depends partly at any rate on a judgment about the efficacy of town-planning. It is quite possible that town-planning in general increases land values—indeed one would expect it do so. (But it is to be noted that, even if town-planning does reduce aggregate values, we are not committed to condemning it, as it may be valuable because of results which cannot be measured in money terms even if we could measure the value to Local Authorities of land-uses such as open spaces, museums, etc.). The original discussion arose not out of some academic theory as to the precise effects of town-planning restrictions, but because town-planners (perhaps optimistically) believed that betterment could (in theory) pay for compensation and that town-planning did not in fact lead to an actual loss of land values. The 100% shift theory was an attempt to rebut the pessimism of attitudes such as that implied by Mr. Turvey without asserting anything too immodest; but of course it was in itself untenable.

A Free Market in Land

(*a*) Let us first assume that all parties are aware of market conditions, and that uncertainty does not enter into the bargaining. A given site then has an upper limit of value represented by the maximum price a developer would pay rather than go without the land, and a lower limit represented by the value of the land in its existing use or the price other developers would pay for it rather than go without using it in its next most profitable use. We will call the former value "development value" and the latter "market value." If the developer is a single individual wanting the land for a unique use,[3] he will pay "market value," if there are several pieces of land he could equally well use, owned

[1] P. 301. The assertion is not made, but the examples are of cases where values are destroyed. [2] Para. 26.

[3] By unique use we mean the case of the "special buyer."

by different people, and he will receive as a surplus the difference between the market value and that price he would have just been ready to pay in order not to forgo the profits to be earned from the development, *i.e.*, development value. If he is bargaining with a monopolist landowner, the monopolist may extract all the surplus from the developer, or he may share it with the developer, but he will not prevent the developer from earning his necessary profit. If he does, all the surplus is lost.

If there is no such unique use, but only a series of competing uses, for each of which developers are ready to pay the same maximum price, the developers will bid against each other, and the full surplus will accrue to the landowner or landowners. Development value may therefore be equal to, or greater than, market value. On the other hand, market value may be greater or smaller than existing-use value; it will be smaller than existing-use value in the case where the existing owner has a unique use for the site that no one else shares. When developed the site has a value greater than the sum of development value and cost of development to the extent of the developer's profit.

(*b*) In fact, landowners and developers do not share a common mind about development values, and there is a wide range of possible values. As Mr. Turvey says, "Even in a pre-Act valuation of a property, say for sale, a divergence of up to 15% between the estimates of two valuers was no reflection on their competence."[1] This will obviously affect the distribution of the surplus between developer and landowner. A competing owner may sell land at a price lower than he could in fact have obtained from the market, or alternatively even with competition the developer may in fact be forced to give up some of the surplus he would normally receive to one of the landowners, if all of them have exaggerated views of the market value. In the case of the monopolist landowner, he might also be lucky in getting the land at less than market value, if the landowner had pessimistic expectations, though this is perhaps unlikely. How much of the surplus the monopolist can extract from him depends now on the accuracy of his insight into the expectations of the developer. It is likely that he will not be able to extract all the surplus from the developer. But at the other extreme it is even possible that he will hold out for a price which the developer thinks excessive, so that development is prevented. In a case where there are several potential developers, the landowner can always himself undertake the development, and he may have more exag-

[1] P. 308.

gerated expectations of profit from it than the developer. He may hold out against sale of the land without in fact undertaking the development, at least immediately. Thus the monopolist landowner may in fact prevent development that would occur if land was held under more competitive conditions.

Even under competitive conditions it is not inconceivable that development may be prevented, once we admit the possibility of uncertainties. One example of this is the case of "floating value." If we suppose that a number of landowners have land suitable for a unique prospective use, they may all suppose that their land will be chosen and hold out for a value higher than the market value, so that development of the second-best uses may be prevented.[1] Uncertainties as to market value may in any case make them ask a price above market value as a purchaser would envisage it, and thus prevent secondary uses, even without the problem of "floating value." Thus uncertainty reduces development below what it would be without uncertainty, even in a competing land market.

Floating Value

The problem of floating value arose because landowners around cities, seeing some development of housing estates taking place, demanded prices for their land such as an estate developer would pay. There is no reason to suppose, as Mr. Turvey postulates as part of the floating value doctrine, that "the average developer was over-optimistic and thus prepared to pay as a maximum too high a price."[2] The more natural assumption was that it was the landowner who was over-optimistic. Thus Mr. Turvey assumes the problem away by asking whether the Uthwatt report "meant (floating value) to indicate that *land changed hands* at prices which showed an over-valuation of the possibility of development."[3] The problem was not chiefly that anyone bought at too high a price, but that quoted prices were above "market value," so that second-best uses may have been prevented. Thus the Uthwatt Report talked of "values claimable by individual owners."[4] The real problem, as Mr. Turvey recognises, was the burden on Local Authorities when they wanted to purchase the land, and also, and perhaps more importantly, when they wanted to sterilise the land as part of a green belt. It was potential compensation claims

[1] The same may also occur, if the best use is not a unique use, in the sense that several developers would pay the same development value, which would equal market price.

[2] P. 302. [3] P. 301. My italics. [4] Para. 28, quoted on p. 300.

rather than actual payments made by Local Authorities on compulsory acquisition that deterred proper planning. Hence Mr. Turvey's suggestion of a modification of the rules for judicial compensation under the 1919 Act would not necessarily have met all the difficulties.[1] The other half of the problem could also have been met if the Government and the Local Authorities had been more ready to use their powers under the 1932 Planning Act, though it is doubtful if this would have been enough to prevent an excessive burden of compensation.[2]

There seems nothing surprising in a situation in which suppliers, *i.e.*, landowners, are holding out for prices at which demanders will take only a small part of the supply offered.[3] In this sense there is not the inconsistency between the doctrines of shifting and floating value which Mr. Turvey supposes[4] if shifting values are interpreted as values assessed on a global basis, taking into account the actual amount of development to be incurred, *i.e.*, minus floating value, and floating values are interpreted as values expected by landowners, who are presumed to be ignorant of the actual amount of likely development and speculatively optimistic.[5] It seems a not unreasonable assumption that this was the meaning of the doctrines of the original propounders, even if they were not aware of all the implications.

[1] Pp. 302–3. The discussion in the Uthwatt Report of floating value in paras. 21–5 and 28 refers both to compensation for acquisition and for planning restrictions, but most of the discussion seems to relate to planning restrictions. The same seems to be true of the discussion of the matter in the Barlow Report, which led to the setting up of the Uthwatt Committee (paras. 239–41, 249).

Redrawing of the rules for compensation for restriction of development would indeed have solved the problem if they had been clear enough to affect Local Authorities' expectations of the compensation bill. But this would have required an explicit statement that compensation was to be based on global assessment of the likely development around a given town.

[2] This matter was dealt with in Prof. Abercrombie's Dissentient Memorandum to the Barlow Commission Report (Cmd. 6153). "Planning authorities are, however, unwilling to take the risk of preparing really strong schemes, particularly with regard to built-upon or rapidly developing areas. Thus some schemes are weaker than the Minister would in fact be prepared to approve. . . . The Minister's discretion as to what is "proper and reasonable and expedient" in excluding claims for compensation is a wide one. . . . But he is hampered by directions under Section 19 of the Act" (para. 16). Powers were given to Parliament and to the High Court to disapprove of schemes, the latter if satisfied "that the interests of an applicant have been substantially prejudiced by any requirement of this Act" (First Schedule, quoted in para. 18).

[3] In time, landowners would have realised their mistake, but not soon enough to prevent the peppering of the "green belts" of towns with scattered development.

[4] Pp. 301–2.

[5] This interpretation of shifting value is consistent with the Uthwatt Report which refers to the case where "all the land of the country were in the ownership of a single person or body" (para. 27), which would preclude floating values. But the argument is not entirely clear.

Nevertheless, though the main problem was always that of Local Authorities, it is *possible* that developers did, in buying large sites for housing estates, actually pay "over-bid" prices. Mr. Turvey finds it "impossible to assess the conclusions (of the Uthwatt Committee) on this matter" [1] because of lack of the evidence they received. But the Uthwatt Committee was set up as a result of the report of the Barlow Commission, and the Barlow Commission did have some evidence bearing on the matter. They reported "in 1937 it was estimated that the amount of land zoned in draft schemes for residential development was sufficient to provide for a population of 291 millions," [2] though they rightly add that these draft schemes had not been approved by the Minister. The combination of the well-known megalomania of Local Authorities and the housing boom of the thirties would be sufficient to explain over-optimistic attitudes on the part of speculative developers, and may in fact have led some of them to excessive purchases of land, involving "over-bid" prices for the whole area involved. However, it is quite true that in many cases developers would have obtained land as a result of competition at prices below what they would have been ready to pay.

Development Charges

The aim of the development-charges system was to obtain for the public the difference between development value and existing-use value, with some few exceptions. In fact, as is well known, land, which should theoretically, according to the plan, have changed hands only at existing-use value, did not. Mr. Turvey clearly gives the reasons why this happened on pp. 307–9. One of these reasons was that the Central Land Board did not always charge the difference between development value and existing-use value, but sometimes took the difference between market value and existing-use value, where market value was below development value. Mr. Turvey, in his point (1) on p. 307, seems to exaggerate the extent to which the Board was ready to ignore the difference between market value and development value, as can be seen by the cautious statement in their Practice Notes that "they are not adopting to its full rigour special value to the special purchaser, though such value cannot be ignored in some cases." [3] Whether or not the Board extracted the full difference between development value and existing-use

[1] P. 302. [2] Para. 241, quoting evidence on which this is based.
[3] Para. 45, p. 15, summarising arguments on pp. 11–15.

value would not necessarily affect the allocation of land; with problems of distribution of this surplus we are not concerned.[1]

In what ways could the system of development charges have rendered unprofitable some development, that would otherwise have occurred?

(1) Because some kinds of development were not charged for. This allowed developers opportunities for surplus not allowed in other forms of development, and to some extent distorted development. This was deliberately done, because these cases largely involved small changes, except for agricultural improvements, where the advantages to the private owners were great and the potential losses to the public not great by this distortion of what would otherwise have occurred. It seems rather unnecessary to describe this as "arbitrary." [2] The only serious case would be where a developer was driven to choose a bombed site rather than a new site, which might have been contrary to desirable planning principles; this is a case where distributional considerations (the desire to cut down the compensation bill) may have led to serious distortions.[3]

(2) By giving no incentive for landowners to sell, so that developers were unable to buy land. This case Mr. Turvey mentions on p. 313. It could, of course, have been met by more vigorous compulsory purchase policies by the Board and Local Authorities. In some cases, however, the Central Land Board did allow some surplus by its "market value" principle and the general uncertainties of estimation, which could have been partly shared with the landowner.

(3) Because of the unfamiliarity and complexity of the administrative procedure, the uncertainty of the bargaining process with the District Valuer (discussed by Mr. Turvey on pp. 308–9), and perhaps because the organised land market did not want the system to work. It seems that it was in this field of red tape and administrative procedure that the main defect of the system resided; in other words "by upsetting the market

[1] The Government's objections to the development-charge system are clearly distributional in the main (see pp. 3–5 of Cmd. 8699), except in so far as the scheme has tended to keep land off the market, as we shall see later. Thus the White Paper says, "To the extent, therefore, that the existing use value basis is effective it has tended to keep land off the market; and to the extent that it has been ignored the cost of development has risen" (para. 13, see also paras. 12 and 17). This is true if it is assumed that formerly the developer was able to buy land below development value, as indeed often happened, and if "cost of development" is interpreted rather loosely. Such a redistribution of the surplus to the disadvantage of the developer would, however, have no effect on development. [2] P. 310. [3] P. 312.

in land for development." [1] Mr. Turvey might have laid more stress on these factors.

(4) Because the Central Land Board was more likely to misjudge the position of developers and the trends of development than private landlords, and therefore to hold out for development charges that made the developer pay more in total than his maximum price. There seems little reason to suppose that this was the case, particularly in view of the principle of allowing "market value" in some cases. But the Board may be expected to have extracted more of the surplus from developers than competing landowners would have done, though less than private monopolists might sometimes have done, if the Board followed its stated principles.

Otherwise, the Central Land Board would merely have taken away the surpluses accruing otherwise to landowners or developers. This would have had no effect on development at all. But Mr. Turvey seems to argue that somehow or other the Central Land Board extracted more than these surpluses (and not merely because of the uncertainties of estimation covered by our point (4) above), and thus "reduced the profitability of development and/or the price at which land could be sold for development." [2] This does not seem to be the case, if we define "profitability" to exclude the surplus, which would not affect development at all. Mr. Turvey seems to fail to do this. Thus he argues in the case of an owner-occupier contemplating development:

> "If the assessment of refusal value equalled the capital loss he would suffer if his property without planning permission were confiscated without compensation, and the assessment of consent value equalled the capital loss he would suffer if his property with planning permission for the contemplated development were confiscated without compensation, then the development charge would have completely removed all his incentive to develop." [3]

The conclusion follows only if development value is equated with developed value minus cost of development. The value of "property with planning permission for the contemplated development" is not the same as this, and the difference is precisely the profit that gives the developer the incentive to embark on the project of development. Mr. Turvey seems to assume that the Board calculated consent value in terms of developed value minus cost of development, and then admitted that the full rigour of this doctrine was abated to allow some profit to the developer (his point (2) on p. 307). But the Practice Notes make clear that this was not so, and the case mentioned in para. 60—"If it is necessary in valuing a Consent Value to use a breakdown' valuation, starting from the value of the property after completion of development and working downwards, proper regard will be had to the risks involved in carrying out the development under existing conditions"—this is an exceptional case.

[1] P. 313. [2] P. 314. [3] P. 306.

It seems to be, because Mr. Turvey ignores the distinction between the profit that the developer expects from the outlay of his capital in this particular form of enterprise and the surplus that accrues to him if he can obtain land at less than development value, that he is led to his conclusion, in the case where the developer had to acquire land, that "Development charges were liable to render some such development unprofitable, thus stopping it." [1] In fact, apart from the four cases mentioned above, there does not seem to be any other reason why development charges would have hindered development.

Even on the assumption that a free market gives a reasonable allocation of land, the four reasons above *might* be held to be relatively unimportant, though opinions would, of course, differ. If we assume that town-planning would improve the allocation of land considerably above what a free market would achieve, the price might be well worth paying, if the system in fact helped planning as it did by removing some unnecessary costs. There remains an arguable case that development charges, though they undoubtedly had some effect on the use of land, particularly by the uncertainties they created through their novelty, did not seriously distort the allocation of resources. It would seem that the case for their abolition is mainly to be found in distributional considerations. The return to market values for compensation that Mr. Turvey seems to desire would hamper planning, unless the problem of floating value were somehow disposed of by new compensation rules more drastic than he envisages, based on an explicit global assessment of likely development in a given town or region.

D. L. MUNBY

King's College,
Aberdeen.

[1] P. 313, point (1). The argument that leads to this conclusion is towards the bottom of p. 311 and in the last paragraph of p. 312, and seems to depend on the same fallacy. Thus on p. 312 the maximum a developer would pay is defined as what "he would have paid for the developed property rather than go without it minus the cost of the development operations" (does this cost include profit?). It does not seem clear why in this case the owner demands a price so much above existing-use value that with development charge the developer would be left with no profit, unless he rates the profits from development higher than the developer, and this case can equally sometimes occur under normal free-market conditions where uncertainty exists, as we have seen.

FURTHER NOTES ON ECONOMIC PROGRESS AND OCCUPATIONAL DISTRIBUTION

I

In the December 1951 issue of the Economic Journal there appeared an article by us which demonstrated that the widely held generalisation linking relative increases in tertiary employment with economic progress was untenable.[1] Two of the published comments on this article, from Professor A. G. B. Fisher and Mr. S. G. Triantis respectively, have appeared in the Economic Journal.[2] Professor Fisher defends the usefulness for economic analysis of the concept of tertiary production and the validity and significance of the above-mentioned generalisation; Mr. Triantis, whilst accepting our comments on the limitations of the usual statistical evidence, produces other statistics which are supposedly free from the objections we have raised.

In this article we discuss the principal points raised in these contributions.[3] In the process we hope that our further observations may be more generally useful for the study of economic growth, particularly in under-developed areas.

II

Professor Fisher argues that the concept of tertiary production provides a " useful tool of economic analysis "[4] which is particularly valuable " to facilitate a clearer understanding of the principles according to which the currently significant sectors of a growing economy can be identified."[5] We find that this defence of the concept is not convincing. We fail to see how the classification of economic activity into primary, secondary and tertiary elucidates any economic problem which is otherwise beyond the reach of ordinary tools of economic analysis, or throws light on any problem of analysis or of policy. Our scepticism would persist even if it were firmly established that, with rising incomes, labour is redistributed between primary, secondary and tertiary production according to some recognisable and predictable pattern.

[1] " Economic Progress and Occupational Distribution," Economic Journal, December 1951.

[2] A. G. B. Fisher, " A Note on Tertiary Production," Economic Journal, December 1952, and S. G. Triantis, " Economic Progress, Occupational Redistribution and International Terms of Trade," Economic Journal, September 1953. (Reference to these articles will be by authors' names.)

[3] We are grateful to Dr. A. R. Prest for useful comments on an earlier draft of this paper.

[4] Fisher, p. 820. [5] *Ibid.*, p. 828.

The analysis of the problems of economic change and occupational movements in any particular economy requires a search for the causes of the existing distribution of employment (including unpaid employment), and for the forces making for change or obstructing it. When the relevant facts of a particular economy are ascertained, they can usefully be analysed and interpreted, *inter alia*, in terms of relative factor prices, relative product prices, terms of trade, distribution of income, characteristics of demand for different products, opportunities for substitution between capital and different sorts of labour, demand for money income in terms of leisure or the fruits of unpaid effort and institutional rigidities.[1] The tools which are necessary are ones familiar to economists.[2] They help to elucidate the facts of a particular economy; also, they help to explain why the observed phenomena are different from (or the same as) corresponding phenomena in other economies. The fact that a particular economic activity is primary, secondary or tertiary, in the customary senses of those terms, does not seem to be relevant for the necessary process of analysis. The activity becomes no more amenable to analysis by being labelled primary, secondary or tertiary; and, particularly if it is labelled tertiary, the activity merely becomes obscured when it is treated as one of a collection of heterogeneous activities, united only because they possess a characteristic (being services) which is of no analytical interest to the economist. Moreover, while aggregation may be necessary and useful in some branches of economics, aggregation of economic activities and their division into three broad categories seem to be wholly misplaced in that branch of economics which is concerned with the structure of an economy and changes in the structure.

It should not be inferred from our present and earlier criticisms that we do not agree with some of the main themes which are developed in Professor Fisher's writings. In particular, we recognise the necessity and desirability of occupational shifts in a

[1] In the analysis of West African conditions in our article we laid too little stress on the effects of institutional rigidities in wage rates. Professor S. Rottenberg has emphasized the importance of wage rigidities in his interesting " Note on ' Economic Progress and Occupational Distribution ',' in *Review of Economics and Statistics*, May 1953.

[2] Of course, the study of the changing structure of an economy may require other tools in addition to those of the economist.

changing economy, and the importance of institutional impediments to such shifts, both in more-advanced and less-advanced economies. But the validity of his theses does not depend upon a tripartite classification of production; and the concept of tertiary production is not necessary or useful " for driving home the fundamental truth that there is no invariable natural ' balance ' between types of production, and that the relations between them require never-ending readjustment to changing circumstances."[1] The necessity and desirability of occupational shifts are independent of any correlation (or lack of correlation) between tertiary production and economic progress. If anything, the tripartite classification of economic activity, by appearing to neglect changes *within* each of the three categories, would seem to hinder rather than to help in the recognition of the causes, concomitants and consequences of economic change and growth. The formulation of some " inescapable "[2] relationship between labour in tertiary production and economic progress is apt to lead, however unintentionally, to those very ideas of some desirable or necessary balance between types of production of which Professor Fisher properly disapproves; moreover, the formulation is likely to bring about unfortunate confusion between effects and their causes.

Our earlier misgivings about the usefulness of the classification of economic activities into primary, secondary and tertiary are reinforced by Professor Fisher's recent discussion of tertiary production, notably by his reference to at least three (and possibly four) quite different criteria or approaches for identifying tertiary production, and by his observation that no " exclusive choice " in favour of any of these is necessary.[3] When, furthermore, the classification of the cultivation of strawberries and mushrooms as tertiary is supported on the grounds that those who " defend the interests of primary producers " do not have such products in mind,[4] we may doubt whether the concept has any " identifiable hard core of meaning ", let alone usefulness for economic analysis.

Professor Fisher's reluctance to define his concept is not helpful.[1] But though it appears that Professor Fisher does not want to commit himself to a rigorous definition, he nevertheless seems to incline to the view that production should be regarded as tertiary if the product has a high income elasticity of demand (presumably greater than unity). Hence, for example, the claim that the concept of tertiary production is useful as a guide for " recognising the ' growing points ' of a progressive economy."[2] This definition in terms of high income elasticity of demand or of " growing points " is quite different from the customary definition of tertiary production as the production of services (used, for instance, by both Mr. Clark and by Mr. Triantis); more important, the customary statistics of labour in tertiary production are presented on the basis of the latter and not of the former definition. Further, a definition in terms of high income elasticities of demand would reduce to a simple tautology the proposition that in a progressive economy there must be a shift towards tertiary *production*. But even then, for reasons given at length in our article, it would not follow that there must necessarily be a relative increase in *employment* in tertiary production.

The income elasticity of demand for a product is not the same in all countries; and it does not remain the same in any one country. A definition of tertiary production in terms of high income elasticity of demand for its products would require the statistician or economist to treat the same activity as tertiary in some countries and as non-tertiary in others, as tertiary in one period and as non-tertiary in another. The difficulties of international and inter-temporal comparisons are obvious. It would be purely coincidental if statistics representing the occupational distribution of labour compiled on customary lines should at the same time represent the distribution of labour compiled on the required basis of the income elasticity of demand for products. Yet Professor Fisher leans heavily on ordinary occupational census statistics. Indeed, he writes that " . . . census records all over the world afford abundant evidence of the practically universal tendency for rising average income levels to be associated with relatively larger employment in tertiary activities *however defined or described*.[3] This would seem to involve a degree of boldness in simplification and interpretation which is unusual even in the general field of international economic comparisons.

[1] Fisher, p. 833.

[2] The adjective is Professor Fisher's in a related context.

[3] Fisher, p. 829. He refers there to two criteria or approaches—income elasticity of demand for products and rates of technical progress. Elsewhere in the article he refers to the customary definition of tertiary products as services. He also suggests that the " services " might be subdivided to differentiate those desired by consumers for their own sake (tertiary) from those (presumably non-tertiary) which are necessary for primary and secondary production.

[4] *Ibid.*, p. 826.

[1] If Professor Fisher could indicate in what ways the different definitions would serve different purposes in economic analysis, his reluctance would be more understandable. In fact, he refers only to one use to which the " tool " may be put.

[2] Fisher, p. 827. See also his concluding quotation from Cannan on p. 834.

[3] *Ibid.*, p. 832, our italics.

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III

Mr. Triantis's article is perhaps the most ambitious published attempt to establish the existence of the connection between economic progress and tertiary production. The main part of the article is devoted to demonstrating that there is acceptable empirical evidence for the widely held view that "economic development has usually been accompanied by large increases in the percentage of the labour force employed in tertiary activities."[1] He attempts to demonstrate this indirectly without relying on occupational statistics, because he agrees that "the use of occupational statistics is subject to several imperfections and qualifications."[2]

Mr. Triantis divides services into three groups: services bought directly by consumers, services which facilitate production and public services. By referring to statistics, to historical experience and (in one important part of the exposition) to what is "obvious,"[3] he deduces that each group of tertiary activities tends to take up a growing share of the national output as the national output increases. Then, by referring generally to statistics of labour productivity, he states that productivity in tertiary industry has been increased less rapidly than productivity in other activities. Putting the two halves together, he infers that

[1] Triantis, p. 628.

[2] *Ibid.*, p. 628.

Nevertheless, after stating this, he refers to Indian and Egyptian occupational statistics in support of his argument that in under-developed countries tertiary activity is unimportant relatively to primary production.

[3] Thus Mr. Triantis says, "It is obvious that activities which facilitate the movement of goods through time and space and the transfer of factors of production expand *pari passu* with the development of specialisation and exchange, which is characteristic of economic advancement" (Triantis, p. 630). This may or may not be obvious; Mr. Triantis does not indicate how the rate of expansion of service activities can be compared with (and be found to be the same as) the rate of "the development of specialisation and exchange." But the statement, even if it is correct, does not meet the point, indicated and illustrated in our article, that an economy which is developing from a subsistence to an exchange basis may require a volume of services which is higher, in relation to national output, than the volume necessary to sustain a larger national output at a later stage of development. The statement ignores the fact that, depending on many factors, a given increment of services to facilitate production may be associated with widely varying increments of final output at different stages of development and in different economies. Neither *a priori* reasoning nor empirical observation suggests that what may be called the "services-content" of final output rises, falls or remains unchanged with economic progress. We would tentatively suggest that the "services-content" may be particularly high when the rates of economic growth and of structural change (inter-industry shifts) are rapid. Such changes may be more marked in some poor but developing countries than in richer ones.

the percentage of labour in tertiary production has risen with increasing national income.[1]

Mr. Triantis avoids reference, except incidentally, to occupational statistics. Instead he makes use, very largely, of statistics of family budgets and of labour productivity. However, he fails to note that the objections which we levelled against the use of occupational statistics apply equally to family budget statistics and to labour productivity statistics. Changes or differences in the degree of occupational specialisation, and shifts between unpaid and paid employment, create the same difficulties as before.

Mr. Triantis uses studies of consumer expenditure to derive the share of services in that part of the national output which enters into personal consumption.[2] According to Mr. Triantis "studies of consumer expenditure strongly suggest that economic development tends to be accompanied by a relative increase in the volume of output" of services bought directly by consumers. "Comparison of family budgets at different income levels in the same country, whether advanced or under-developed," is said to show that the larger the income the greater is the share of expenditure on such services.[3] However there is no need to examine this contention in detail. For the pattern of family *expenditure* gives an inadequate indication of *real consumption* of goods and services, and of the composition of the real national output, to the extent that transactions take place which do not involve

[1] The inference may be questioned. The conclusion is sound only in respect of a closed economy in which consumer expenditures on a product directly give rise to production of that product in that country. Mr. Triantis recognises the point (Triantis, p. 628, n. 3). It must be stressed that the existence of international trade undermines his approach. This is obviously true for primary and secondary products which can be imported and exported. It is also true, but perhaps less obviously so, of services. It will be purely fortuitous if the "services-content" of exports is exactly matched by that of imports, particularly (though not only) for countries which do not have their own shipping services or other services which are essential to foreign trade.

Moreover, special difficulties arise, from the point of view of Mr. Triantis's approach, in economies where the export of labour is an important generator of income spent domestically.

[2] A point of detail is of interest. Mr. Triantis argues (p. 629) as if consumer expenditures on "trade-union dues and other contributions, and insurance of all kinds (except life insurance, old-age pensions, etc.)" provide an index of activity producing services. But such expenditures represent, in large part, transfers of income. Studies of consumer expenditures do not indicate who are the net beneficiaries of such transfers, nor on what the transferred amounts are spent. The bulk of insurance premiums (excluding life insurance) eventually pay for replacement of assets and not for the consumption of services.

Moreover, it must surely be a slip to imply, as Mr. Triantis does (at the same place), that expenditures on "research" figure in family budget studies.

[3] Triantis, p. 628.

money expenditures (that is they occur outside the exchange sector of the economy). Similarly, *money* incomes are not an adequate measure of total income. This in itself would not vitiate comparisons between patterns of expenditure in different countries, or at different times, or for different income groups, if it were true that the excluded items of consumption and output were always the same in composition and in relative importance. But it is known that there are significant shifts between paid and unpaid activities; economic development involves a change from a subsistence to an exchange economy; and it is not likely (and it certainly has not been demonstrated) that incomes and expenditures which do not involve money payments are of equal importance for all income groups. Hence inter-temporal or inter-regional comparisons of family budgets give a seriously distorted picture of changes and differences in real consumption; and this may be true, too, of comparisons between the expenditures of families with different incomes in the same country.[1]

The weakness of the method of approach adopted by Mr. Triantis is even more striking in respect of his use of statistics of labour productivity. To measure labour productivity in a particular branch of industry it is necessary to have data of output and of the labour force in that branch. Statistics of labour productivity are necessarily based on statistics of the distribution of the labour force in different branches of economic activity, and therefore on the very statistics the use of which Mr. Triantis is striving to avoid. Thus a demonstration based on statistics of labour productivity is no more acceptable than the " proof " provided more directly by statistics of occupational distribution—statistics which Mr. Triantis regards as unsatisfactory for his purpose.[2]

[1] The shift of many economic activities from the unpaid to the paid category and the relative growth in importance of the money economy in the course of economic development often exaggerate the growth of national income as conventionally measured. For much the same reason the conventional national income calculations tend to exaggerate the discrepency in incomes between more-developed and less-developed countries. Attempts to make allowance for the production of services which do not enter the money economy are subject to large errors of estimate.

The shift between the unpaid and paid categories will not always be in the same direction as national income increases. But in certain phases of development, and particularly in the earlier phases, there tends to be a marked shift of activity (and consumption) from the unpaid to the paid categories. It is highly probable that the inclusion of unpaid activities in the reckoning (a matter involving rough estimates) would reduce the rate of growth of national income, and, even more, the rate of growth of tertiary activity.

[2] There are further criticisms of the use of statistics of labour productivity. Mr. Triantis does not discuss the difficulties of calculating and of interpreting labour productivity statistics (quite apart from the basic difficulties set out in the text above). These difficulties are acute when industry produces new products or when the composition of output changes in other ways; such changes are inevitable in growing economies.

Further, the argument of Mr. Triantis is based, implicitly, on statistics of labour productivity in *value* terms (*e.g.*, in order to translate consumer expenditures, via labour productivity data, into occupational distribution of labour). The available statistics generally refer to productivity in terms of *physical* products.

Mr. Triantis observes that " in discussions about the importance of tertiary industry in under-devloped countries considerable emphasis is usually placed on trade and domestic service. While these occupations might well account for a large part of those engaged in tertiary activity, closer examination might show that they employ relatively small percentages of the total labour force." [1] This suggests once more that some of the essential points in our article have been missed, namely, that the distinction between tertiary and other activities in relatively unspecialised economies is almost meaningless,[2] and that it is difficult to attach any useful meaning or measurement to the " total labour force " or subdivisions of it. The significance of these considerations is particularly obvious in the activities of the agricultural population. Many of the so-called farmers spend a large part of their time in small-scale transport, porterage and trade both during the farming season and much more so outside the season. Some members of the cultivator's family are engaged in tertiary activity intermittently throughout the year. It is impracticable to separate the time spent producing crops from that devoted to taking part of the produce to market and to selling it, or to processing it for consumption. But there is no doubt that in so far as any distinction can be drawn, the labour time involved in transport, trade and various forms of domestic service in many of these countries is a significant proportion of labour time devoted to total production, and much more so of that devoted to production for some form of sale.

IV

Our article did not attempt to show that labour in tertiary activities is relatively more important or more numerous in less developed than in more developed countries. It drew attention, by way of illustration, to the importance of tertiary activity in

[1] Triantis, pp. 631–2. Trade and domestic service are not the only important tertiary activities in poor countries. Transport is obviously important; and this activity should include the time and effort spent in many poor countries by people going to and from work, even if they do not pay (in money) for this transport.

[2] An illuminating discussion of this subject is presented in a forthcoming book, *The National Income of Nigeria 1950–51*, by Messrs. A. R. Prest and I. G. Stewart.

countries like West Africa—a phenomenon which comes as a surprise to those of us who have been nurtured on the belief that labour in tertiary activity is correlated directly with national income.[1] Moreover, an analysis of the reasons for the phenomenon, together with the fact that there is nothing in economic growth which necessarily or inescapably causes a relative shift in labour to tertiary production, led us to suspect this law, and, more important, its usefulness in the investigation of economic growth.

The difficulties of statistical measurement need not obstruct the investigation of the economics of less-developed areas or the implications of their economic growth. The inability to submit economic phenomena to quantitative measurement does not mean that the phenomena cannot be understood and analysed. It is not the case that quantitative analysis and measurement are always more precise and meaningful than qualitative analysis and assessment. There are important problems and topics of which the reverse is true, and in respect of which it may be misleading if discussion and analysis are confined to that part of the data which can conveniently be expressed in quantitative terms. The study of economic progress seems to include many such topics, of which the relationship between economic progress and the distribution of labour is one.

P. T. BAUER

Gonville and Caius College, Cambridge.

B. S. YAMEY

London School of Economics.

[1] Most of our detailed illustrations were drawn from a poor country. Professor Rottenberg, in the article referred to above, has furnished further evidence from another poor country.

It may be useful to point to an example at the other end of the scale. Subject to the limitations inherent in occupational statistics to which we have referred, Canadian data indicate that the proportion of the occupied population in the service industries declined between 1931 and 1941, and again between 1941 and 1948. Cf. statistics presented by Mr. A. Maddison, "Productivity in an Expanding Economy," ECONOMIC JOURNAL, September 1952, p. 588. The statistics quoted by Mr. Maddison are of added significance as they relate to a highly specialised economy.

The declining share of transport in the national income of the United States of America during the last thirty years is suggested by the estimates of Dr. H. Barger in *The Transportation Industries 1889–1946*, to which Mr. Triantis refers. Dr. Barger's estimates also suggest that labour productivity in transportation increased at a faster rate than labour productivity in manufacturing industry.

PRODUCTIVITY, THRIFT AND THE RATE OF INTEREST

1. THIS essay investigates the determination of the rate of interest in a market for a single security. The argument differs from previous treatments of the same topic in that it deals explicitly with both stock and flow aspects of the problem, and does not emphasise one aspect to the virtual exclusion of the other. The discussion is constructive throughout, since I have felt that a running appraisal of previous writings would only obscure the present exposition.

2. For the sake of simplicity, we deal with a market for riskless, perpetual bonds having a par value of $100 and yielding $1 per (some arbitrary) period to bondholders. This implies that the market rate of interest is the reciprocal of the price of bonds, so that the problem of explaining the determination of the rate of interest is effectively transformed into that of explaining the determination of bond prices.

3. The aggregate quantities of various assets existing in an economy in any given period of time are inherited from the past. These quantities can be altered only gradually as a result of future economic decisions, so that if we consider appropriately short time periods, current additions to (or depletions of) aggregate asset stocks can be ignored. On the other hand, the way in which existing stocks are distributed among individual holders (at the end of any period) is determined by current economic decisions. In particular, an individual will distribute his holdings in such a way as to equalise the marginal advantages of holding a dollars' worth of any one asset with the marginal advantages of holding an equal value of any other asset.[1] That is to say, given expected future prices and given the current prices of all other goods, an individual's demand for bonds will be a function of current bond prices.[2] Since, *ceteris paribus*, an individual will generally be more willing to purchase and hold claims to given future interest receipts the lower the current price of bonds in relation to the prices of other assets, the individual demand

[1] It should be emphasised that bonds are held rather than used; *i.e.*, while bonds may yield subjective satisfactions as well as interest payments, in every case "yields" are contingent upon possession.

[2] In the case of consumers, it is also implicitly assumed that the individual's asset holdings at the beginning of the current period are given.

curve for bonds will ordinarily slope downwards from left to right. Aggregating individual demands, therefore, we obtain a community demand curve for bonds (to hold) which will also be downward sloping. In general, this curve will be a function of all current prices other than bond prices, of all future prices expected by individuals and of the distribution of assets among individuals at the beginning of the current period.

4. Each bond outstanding in the economy must be held by someone; *i.e.*, the total stock of bonds must be held by individuals in the aggregate. But since any one individual is free to hold or not to hold bonds, as he sees fit, this implies that the market price of bonds must be such that individuals in the aggregate (via inter-personal exchanges of existing bonds) are willing to hold the

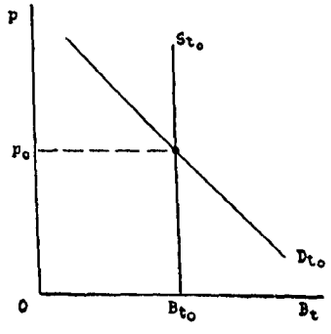


FIG. 1

existing stock. This description of the determination of *current* bond prices is illustrated graphically in Fig. 1. The supply curve of bonds at the beginning of period t_0 is represented by S_{t_0} (the existing stock of bonds being B_{t_0}). The demand curve for bonds (to hold) at time t_0 is represented by D_{t_0}. The price, p_0, at which individuals in the aggregate are willing to hold the existing stock of bonds is determined at the intersection of S_{t_0} and D_{t_0}.

5. The above theory of the *current* rate of interest is all very well as far as it goes; but it does not go very far. I do not mean by this that the theory does not tell us anything about the "nature" of the rate of interest; problems of this sort are not the immediate business of economists in any case. The real difficulty with our theory of the current rate of interest is that it does not permit us to answer questions concerning the economic roles of "productivity and thrift"; that it does not allow us to say anything about the reasons why the rate of interest "is what it is," nor to conjecture what will be the future course of the interest rate over any time interval. However, our theory can

be extended to deal with these problems. Briefly, what we have to do next is to examine those factors which affect the current stock of bonds and the current demand for bonds to hold.

6. The supply of *new* bonds forthcoming into the market during any given period of time will be a function of the same variables as the market demand for bonds to hold (viz., current and expected prices and the current distribution of assets). Individuals will ordinarily be more willing to assume obligations to make given future bond payments the higher the price which can be currently obtained on bond sales; hence, the supply curve of new issues will ordinarily slope upwards from left to right. Given the current market price of bonds as determined by the demand and supply of *old* bonds, sales of new issues (per period) will be pushed to the point on the supply curve where the supply price of the marginal seller of new bonds is equal to the existing market price.[1]

The supply of new issues is only one of the factors affecting the level of current bond stocks; bonds may be destroyed (technically or economically) as well as created. Thus, during any given period, some of the bonds outstanding in an economy will be lost or destroyed, etc. Depletions of this sort will be ignored here. More important, large quantities of existing bonds may be retired by original issuers during any given period. The motives governing reductions in current indebtedness are precisely the same as the motives governing increases in indebtedness, so that an individual will generally be more willing to retire an obligation to make given future interest payments, the lower the price at which the obligation is redeemable. Hence, the demand curve for the retirement of existing bonds (per period) will slope downwards from left to right. Given the current market price of bonds, the retirement of outstanding issues in any period will be carried to the point where the demand price of the marginal redeemer of bonds is equal to the current market price.

The previous argument is illustrated graphically in Fig. 2. Fig. 1 is here reproduced (with certain additions) as Fig. 2*a*. In Fig. 2*b* the supply curve of new issues is represented by $s_{(t_1-t_0)}$, while the demand curve for bonds to retire is given by $d_{(t_1-t_0)}$. If the current price of bonds is p_0, the quantity of new bonds issued during the current period will be b_0^s and the quantity of bonds retired will be b_0^d.

[1] Notice that the demand curve for bonds which confronts the "bond selling *industry*" is analogous to the demand curve as seen by an *individual seller* in a competitive industry.

The supply of new issues may or may not be matched by the demand for bonds to retire. If $b_t^s - b_t^d = B_{t+1} - B_t =$ the net increase in the stock of bonds in the tth period $= 0$, the current rate of interest will remain unchanged in all future periods unless some outside influence upsets the existing stock and flow equilibrium. If $b_t^s - b_t^d > 0$, the existing stock of bonds will increase in every subsequent period (and *vice versa* if $b_t^s - b_t^d < 0$). Thus, when $b_0^s - b_0^d > 0$, as shown in Fig. 2*b*, the stock of bonds will increase during period t_0 to, say, B_{t_1}. In period t_1, therefore, bond prices will fall to p_1, new issues will fall to b_1^s, retirement demand will rise to b_1^d, and the stock of bonds will increase in period t_1 by $b_1^s - b_1^d$, etc.[1]

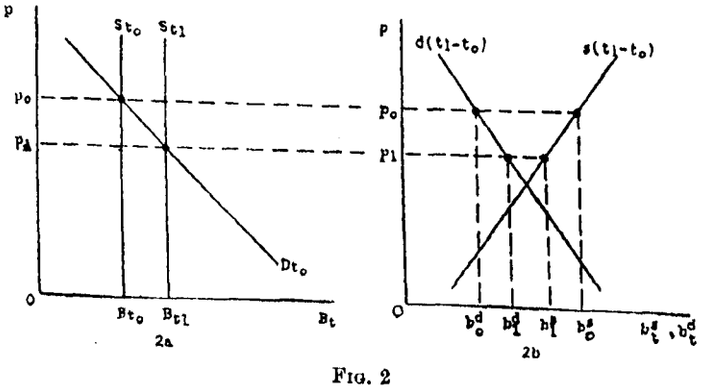


FIG. 2

7. The foregoing analysis provides the necessary tools for a discussion of the effects of "productivity" upon bond prices. If, for example, an increase in productivity (an innovation?) increases the current demand for money to purchase physical assets, this will be partially reflected in the market for perpetual bonds.[2] More precisely, there will be a rightward shift of the supply curve of new issues (greater willingness to borrow) and a leftward shift of the demand curve for bonds to retire (greater willingness to remain in debt). On both counts the time rate of increase of bond stocks ($b_t^s - b_t^d$) will rise; but since the current rate of interest is determined independently of the net supply of new issues, it is *a fortiori* independent of current *changes* in the net supply of new issues. Hence, productivity can play no *direct* part in the determination of the current rate of interest.

[1] It is implicitly assumed that the effects of increased bond stocks upon the D, s and d curves can be neglected.

[2] "Partially reflected," because the increased demand for money will be spread out over a number of security markets.

However, if changes in productivity affect bondholders' expectations of future prices (thus causing a shift in the D curve in Fig. 2*a*), productivity considerations will indirectly influence the current rate of interest.

As will be indicated later, in medium and long-run time periods a change in productivity, since it will affect the time rate of change of bond stocks, will partly govern the rate at which the rate of interest changes during various time periods; *i.e.*, productivity considerations eventually help to determine the future course of the rate of interest.

8. Turning now to the economic effects of "thrift," the argument of the previous section applies if a change in thrift leads consumers to increase their current indebtedness. Suppose, however, that the change in thrift involves a decrease in the demand for consumer goods. How will a change of this sort be reflected in the market for perpetual bonds?

A decrease in the demand for consumer goods—the emergence of excess supply in consumer-good markets—implies a change in consumer-good prices, and so a change in demand curves for assets. In particular, a change in consumer-good prices will affect the demand curve for bonds to hold. However, even a large current change in thrift, since its effects will be spread among a myriad of assets, will ordinarily have little effect upon the demand for any one asset. Moreover, in the short run any increase in demands for assets to hold will necessarily be small in relation to total (historically accumulated) demands, so that thrift can play no *direct* part in determining the current rate of interest. As in the case of productivity, the effects of thrift must be cumulated over a medium- or long-run period of time before they can directly influence the course of the rate of interest. However, the current rate of interest will be indirectly responsive to changes in thrift to the extent that such changes alter expected future prices.

9. Thus far, our discussion provides only an outline solution to the problem of what course the rate of interest may be expected to follow over an interval of time. A comprehensive examination of this problem, involving a treatment of interrelations among bond and commodity markets, lies outside the scope of this paper. However, a brief investigation into the dynamics of price determination in our selected bond market (conditions in other markets being held in *ceteris paribus*) can be undertaken here.

Suppose that the bond market is initially in stationary equilibrium, the price of bonds being established at a level such that the quantity of new bonds currently being issued is equal to the

quantity of previously issued bonds currently being retired. Then a " once-over " shift in the demand curve for bonds to hold (the *stock demand curve*) will create a condition of flow disequilibrium; new bond issues will currently exceed or fall short of bond retirements, and the current stock of bonds and the price of bonds will change in every subsequent period during which flow disequilibrium persists. At this point, therefore, the following questions naturally arise: Will the price of bonds gradually return to the stationary equilibrium level so that the bond market will be stable? If the market is stable, will the approach towards equilibrium be direct, or will it be characterised by oscillations of the current price about the stationary price level? What factors will govern the length of time which must elapse before stationary equilibrium conditions are re-established? In order to give clear-cut answers to these questions, we must first define an *excess flow demand curve* for bonds; this is a relation which shows, for each possible price of bonds, the amount by which the existing stock of bonds will increase or decrease during the current period (*i.e.*, when excess flow demand is positive, the stock of bonds will decrease during the current period; when excess flow demand is negative, the stock of bonds will increase during the current period). Such a curve is implicit in Fig. 2, above; it may be obtained explicitly by subtracting the supply of new issues from the demand for bonds to retire at each possible price, and relating the resulting *net* figure to its corresponding price.

Now, it can be shown that [1]:

(i) the bond market will be stable if the slope of the excess-flow-demand curve is less than twice the slope of the stock-demand curve (*both slopes being referred to the price axis*);

(ii) price will oscillate about the equilibrium price level if the slope of the excess-flow-demand curve is greater than the slope of the stock-demand curve;

(iii) price will approach the equilibrium level directly if the slope of the excess-flow-demand curve is less than the slope of the stock-demand curve;

(iv) the approach towards equilibrium will be less rapid the greater the difference between the slopes of the two demand curves.

It would require more space than is available to demonstrate all of these results in non-symbolic terms [1]; however, a typical diagrammatic example of the second result is presented in Fig. 3. The S and D curves shown in Fig. 3*a* are defined in precisely the same way as the corresponding curves in Fig. 1, above. The curve e in Fig. 3*b* is the excess-flow-demand curve for bonds; notice that it is drawn more steep (with reference to the price axis) than the stock-demand curve in Fig. 3*a*. For the purposes of this discussion, we assume that the horizontal scale is the same in the *a* and *b* parts of Fig. 3 (*e.g.*, if 1 inch equals 1,000,000 bonds on the horizontal axis of Fig. 3*a*, 1 inch equals 1,000,000 bonds *per period* on the horizontal axis of Fig. 3*b*).

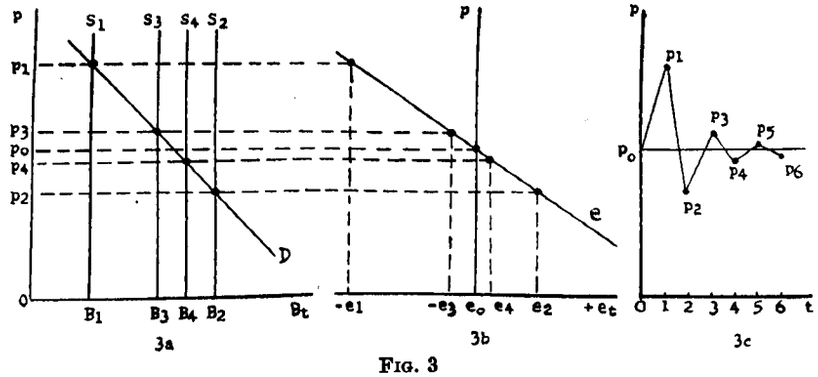


FIG. 3

The market illustrated in Fig. 3 will be in stationary equilibrium if excess flow demand is equal to zero; *i.e.*, if price is p_0 so that $e_t = e_0$. If the stock of bonds in the initial period is B_1, however,

[1] For small deviations from the stationary equilibrium price, p_0, the price of bonds at time t is given by the linear difference equation

$$p_t = \left(1 - \frac{e_{p_0}}{D_{p_0}}\right) P_{t-1} + \frac{e_{p_0}}{D_{p_0}} P_0$$

where e_{p_0} and D_{p_0} are the respective slopes of the excess-flow-demand and stock-demand curves in the neighbourhood of the equilibrium price. The solution of this equation may be written

$$p_t = p_0 + (\bar{p} - p_0)\left(1 - \frac{e_{p_0}}{D_{p_0}}\right)^t$$

where $\bar{p}$ is some arbitrary initial price. For stability, therefore, it is necessary and sufficient that:

$$\left| 1 - \frac{e_{p_0}}{D_{p_0}} \right| < 1,$$

or that $-1 < 1 - e_{p_0}/D_{p_0} < 1$. These conditions will be satisfied if $e_{p_0} D_{p_0} > 0$, and $e_{p_0} < 2D_{p_0}$. The nature of the approach towards equilibrium depends upon the size of e_{p_0}/D_{p_0}; the approach is direct if $e_{p_0}/D_{p_0} \leqslant 1$, oscillatory if $e_{p_0}/D_{p_0} > 1$. Obviously $p_t \to p_0$ more rapidly as $t \to \infty$, the smaller is $(1 - e_{p_0}/D_{p_0})$.

[1] Strictly speaking, our results hold only in the case of straight-line demand curves; but they are approximately true for more complicated curves so long as one deals with " prices " and " slopes " in the neighborhood of the stationary equilibrium price.

and if the stock-demand curve is D, the price of bonds will be p_1, e_t will be equal to $-e_1$, and the market will be in a state of flow disequilibrium. During period 1, therefore, the stock of bonds will increase by e_1 so that, at the beginning of period 2, B_t will have risen from B_1 to B_2 ($B_2 = B_1 + e_1$). Hence, price in period 2 will be p_2 (which lies below the equilibrium price, p_0), and in this period the stock of bonds will *decrease* from B_2 to B_3 ($B_3 = B_2 - e_2$). In period 3, therefore, price will be p_3 (which lies above p_0, but below p_1) and the stock of bonds will increase during the period from B_3 to B_4 ($B_4 = B_3 + e_3$). Price in period 4 will be p_4 (below p_0 but above p_2); hence the stock of bonds will decrease, etc. A time series illustrating the dynamic behavior of price in this model is shown in Fig. 3*c*; the approach towards the equilibrium price is oscillatory but damped. By using an argument similar to the above, the reader may easily convince himself of the validity of the remainder of the results set out earlier.

Now, the possibility of unstable or oscillatory market behavior cannot be ruled out on *a priori* grounds. However, in most real-world bond markets, the market period—the time which must elapse between the establishment of a price and its possible subsequent alteration—is likely to be very short; indeed, it may be no more than a matter of minutes in the case of highly organised markets. In such cases the excess-flow-demand curve will normally be extremely flat (referred to the price axis) relative to the slope of the stock-demand curve; this is because the slope of the former curve decreases as the length of the market period decreases, while the slope of the latter curve is independent of the period of analysis—a typical stock–flow relationship. Hence, to the extent that the four rules set out earlier can be applied to the real world, a bond market is not likely to be unstable in practice, nor even oscillatory, simply by reason of its structural properties; a movement away from stationary equilibrium is likely to be followed by a slow, but persistent and direct, return movement. The causes of the violent fluctuations which are sometimes observed in practice are probably to be sought in sudden changes in price expectations, or in changed conditions in markets which are less well behaved than security markets.

The foregoing discussion deals with the effects of "once-over" shocks to our model. More complicated situations are encountered in practice; *e.g.*, changes in productive techniques occur almost constantly, and individual expenditure patterns are subject to ceaseless development over time. If considerations of

this sort are introduced into the model, it is apparent that its behavior will be different from that outlined above. Bond prices will still *tend* towards a stationary equilibrium level, but the stationary equilibrium position will itself shift with the passage of time so that the market may "develop" indefinitely; in particular, the location of the stationary equilibrium price at any moment will depend in an essential way upon those forces of "productivity and thrift" which are negligible in the short run. This leads to the conclusion that the significance which one is justified in attaching to the factors of productivity and thrift depends primarily upon one's point of view. The forces underlying price determination in a bond market certainly cannot be appreciated in their entirety by looking simply at the day-to-day operations of the market; a sense of perspective is required which only the passage of time can provide.

10. If the present analysis seems novel in certain respects, this is because it deals simultaneously and explicitly with both stock and flow aspects of the determination of bond prices. The end result of this generalisation of established analysis is a more complicated, but also a richer and perhaps more realistic, theory of interest. Moreover, since the present method of approach can be extended to deal with the pricing of monetary and physical assets generally, some of the ideas and conclusions of this paper may be more widely applicable than is apparent at first glance. As it stands, however, the present essay is merely an introduction to a comprehensive treatment of the general theory of capital.

R. W. CLOWER

The State College of Washington,
Pullman, Washington, U.S.A.

PROFESSOR KEIRSTEAD'S THEORY OF PROFIT [1]

PROFIT has always defied the theoretician's endeavours to find a place and a duty for it in the more elegantly simple and coherent of his models. What precisely profit is and what it does in the economic life-process are questions which, until he had broken through several distinct and formidable barriers, he sought in vain to answer. These difficulties did not arise from the nature of things, but were inherent rather in the particular abstract model which the economist constructed of economic reality, the " general equilibrium " theory inspired by the science of mechanics. The assumption of perfect competition; the treatment of money as a mere go-between with no influence of its own on the course of events; the denial, at first, of any significant role to time in any of its aspects, and later the adoption of a concept of time which abolishes the distinction between past and future; the complete neglect of uncertainty; these made possible a wholly mechanistic account of the economic process where there was no place for the decision-maker, the person, that is, who makes the bricks of policy without the straw of " complete " data, the person whose very ignorance it is which gives him freedom to take this course or that, who is not a slave from moment to moment of the cost and revenue curves, who bridges by what we must acknowledge to be a sort of creative imagination the chasms of firm knowledge.

The term " static equilibrium " describes the situation at any moment in an economic system where all the economic variables adjust themselves instantaneously and perfectly to each other and to the non-economic governing conditions whenever there is any shift in the latter. Time-lags of adjustment being thus assumed away, there can never arise any endogenous oscillatory pattern amongst the economic variables. It seems further to be implicitly assumed in the literature that the persons in the system live as it were from moment to moment and do not concern themselves with the future. In such a model there are no expectations and no agreeable or disagreeable disappointments of expectations, no surprises pleasant or unpleasant. If we further assume perfect competition in the product and factor markets, the distribution of the total product amongst those who contribute the services of

[1] A review of *An Essay in the Theory of Profits and Income Distribution*, by B. S. Keirstead (Basil Blackwell, 1953. Pp. 110. 10*s*. 6*d*.).

themselves or their property to its production can be explained without any reference to a possible gap between the total of the contractual incomes paid to these factors of production and the total value of the product. There is thus in such a model no need or role for any " enterpriser," and we do not have to find an income for him; and there is no income arising from manœuvre, from venture into the uncertain, from good guesswork or sheer luck, whose disposal we have to account for.

Amongst the various departures from this model which have been proposed, the least radical is to relax the assumption of perfect competition while still considering only the momentary situation of an instantaneously self-adjusting system. Here there is the possibility of " monopoly profit," but this is secured by any firm simply by obeying the technical rule that output is to be such that marginal revenue equals marginal cost. There is here still no looking forward to an uncertain future, no reckoning with the possibility of change and seeking to take advantage of it, no *genuine decision-making* in the sense of choosing a course of action amongst many possible ones whose respective outcomes are unknown. We are still in a virtually timeless world.

It is when we bring in *time*, in each of its (at least) three senses of, first, a freedom for events or changes to occur in a realistic, non-instantaneous fashion (so that we can be interested in the movement from one situation to another and not merely in the comparison of the two situations), and second, of an expectational vista in which the imagination can move to and fro in detachment from current experience, and third, of a recorded sequence of past events, that we have a place in our model for the true enterpriser.

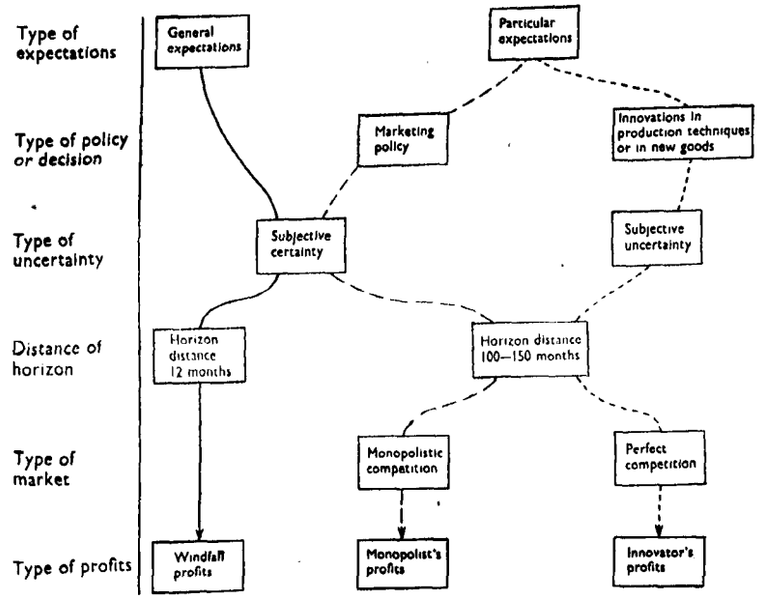
In all the evolution of theory in the past eighty years, one of the most interesting and curious things is the long time it took to discover the absolutely fundamental importance of the distinction which nowadays we refer to by Myrdal's terms *ex ante* and *ex post*. In the classical dynamics of the physicist, time is merely one variable in functional relationships of known form. It is true that he thinks of his particle as tracing out a path, but he regards that part of the path which, at any moment, the particle has not yet traced as having no less validly determinate a shape than the part which has already been run through. It is difficult not to believe that the economist was unconsciously influenced by this outlook. How else can we explain, for example, his emphasis on the *ex post* identical equality of aggregate net saving and aggregate net investment and comparative neglect of the idea that there is nothing which binds the total of individual intentions to save to any

equality with the total of individual intentions to perform net investment? It was the lack of the explicit *ex post–ex ante* distinction which mainly confused and frustrated the construction of a theory of profit: for it led men to speak as though the profit-hoped-for, which motivates the enterpriser, was the same in nature and in size as the profit-realised, which emerges as a share of actual aggregate income. Since the latter is a single scalar number, while the former is a bundle of vectors, there was no hope of illumination on this road.

It is, so far as I know, nearly a quarter of a century since last a book appeared in English explicitly on the theory of profit. O'Brien's *Notes on the Theory of Profit* was published in 1930, and I vividly remember how stimulating and exciting I found it. For O'Brien had gathered together excerpts from a number of authors, amongst whom Knight was naturally the most eminent, who concurred in suggesting that profit had something to do with risk. I am not sure now (with no copy at hand) how near O'Brien gets to the heart of the difference between expected and realised profit, but he does discuss the possibility that realised profit may usually be negative, and plainly he cannot have regarded a negative profit *simpliciter*, as an inducement to invest or produce. In this one matter it might even be said that the *General Theory* was a backward step from the *Treatise*, for the *Treatise* speaks openly of windfall profits, and of the diversity of opinion between Bulls and Bears, but the *General Theory* speaks, in its formal analysis, of the marginal efficiency of capital as though that curious phantom were a single precise number agreed upon by everyone. Profit theory has been out of fashion; for private initiative and competitive energy have been out of fashion, first in war-time and then during the construction of the Welfare State. The resurgence which began two or three years ago with a symposium in the *American Economic Review*, and has continued in other articles and doctoral theses since, has now been given shape and momentum by Professor Keirstead's brilliant *Essay in the Theory of Profits and Income Distribution*.

Professor Keirstead's essential achievement is to have stitched into the complex tapestry of concepts and theories three golden threads which bring dramatically to view a clear and intelligible pattern. Each of these threads links together a type of expectation, a type of policy, a type of uncertainty, a type (near or far) of time-horizon, a type of market and a type of profit; and there are three points where two threads join. In the accompanying diagram I have endeavoured to present this pattern visually

The first distinction is between *general expectations* whose subject matter is those "public" variables and circumstances, such as the size of the national income, the size of the flow of net investment, the political colour of the Government after a forthcoming election and so on, which, whatever they are *going to be*, will be the same for all firms and will constitute a background common to all the actors on the economic stage; and *particular expectations* whose subject-matter is the revenue, costs, etc., of each individual firm. There is a second reason for the term "general expectations," in that the business community often has concerning these a consensus of opinion; and a further distinction between the two types is that while general expectations are concerned with variables wholly outside the firm's control or even influence, particular expectations are largely about the consequences of its own various possible actions. Next Professor Keirstead divides the firm's field of action into the two parts—*marketing policy* and *technical policy*. A plan may envisage, for example, the increase of the firm's monopoly power by means of an advertising campaign; or the firm may aim to be first in the field with a new productive technique or a new product. The subjective uncertainty entailed by a technical innovation, Professor Keirstead thinks, is altogether more formidable than that involved by a sales campaign. The mental processes involved for the enterpriser will



be entirely different in the two cases, and while little more than a projection of recent experience may satisfy him regarding the outcome of an advertising campaign, a technical innovation will seem capable of bringing great gain or great loss, and the enterpriser will consider what is the worst and the best that can happen. Whether the firm's action is concerned with marketing or with technology, however, the advantage to be won *essentially* involves expectation and a plan looking forward over some stretch of future time. The length of this time, that is the distance of the " horizon," is the next matter on which general expectations differ from particular expectations. For the former, Professor Keirstead holds that the practical limit is one year, while for the latter the business-man is bound in the nature of things to attempt to " take a view " over some ten years. The hazards of innovation will be particularly insistent in perfect competition, and the fifth link in each of the three chains is the distinction between types of market. Finally, each of three kinds of profit is seen as the possible objective of policy and action : first, windfall profits result from sound " general expectations " concerning the circumstances that govern price-movements; secondly, monopolist's profit results from a well-judged and skilfully executed long-term marketing policy; and thirdly, innovator's profit is hoped for from well-timed adoption of new discoveries and inventions. Professor Keirstead shows more indulgence to the monopolistic competitor, reacting in what is, after all, a rational way to his environment, than most of the literature has accorded him; what he seeks, Professor Keirstead suggests, is security and, paradoxically, *increase* of scale rather than exploitive profit. The intensity of the need felt by all kinds of people in these days, enterprisers not least, for *security*, and the economic consequences of that feeling, are expressed and analysed by Professor Keirstead in some brilliant and moving passages of unmistakable sincerity.[1] Security surely ranks in importance, amongst the ideas which should concern the economist, with scarcity itself; but how different is its place in the theoretical literature.

With one notable exception, all the chief views which have been advanced by economists about the nature, origin and role of profit find their due and mutually harmonious places in this scheme. Profit was connected by F. H. Knight with uncertainty, by Schumpeter with innovation, by Keynes with movements of the general price level, and by Mrs. Robinson, Professor Chamberlin and Mr. Kalecki with the degree of monopoly power. When the word profit means something which induces people to take this action or that, this thing, being something imagined and hoped for, is what Professor Keirstead calls " objectively uncertain." There is in its nature, that is to say, no general or radical justification for anyone to treat it in any particular case as a unique known number of money units, and if he does so treat it, the justification must arise from special circumstances. Those, therefore, who insist on uncertainty as an essential characteristic of any situation where profit plays a part will find their view reflected in Professor Keirstead's scheme. He does, however, put much weight on a distinction which has been greatly neglected in the literature. If I may be allowed to try to interpret a little his double-barrelled technical term " objective uncertainty, subjective certainty," he has in mind, I think, the idea that *ex post* profit must always be attributed in some measure to luck, and there can plainly be no room for luck where there is no *objective* uncertainty. (I confess that the notion of an " objectively certain " prospect is one to which I can scarcely attach any meaning, and I should say that all situations, where decisions must be taken, are " objectively uncertain "). But it may well be that the instinctive human response in some contexts is to seize upon any clues which offer and to treat them *as though* they were sufficient to give *knowledge* of the outcome of some course of action. Thus Professor Keirstead thinks that " general expectations " will often be mere projections of trends treated as though they were established truth. This may very well be realistic psychology. Perhaps experience since 1945 is steadily building up such an attitude; but has 1929 and its " permanent prosperity " really faded already from men's minds?

Particular expectations are the basis of two types of action. When they are concerned with the possible results of marketing policy, they may also be " subjectively certain." But particular expectations of the outcome of technical innovation, especially under perfect competition, will be part of an altogether different attitude of mind, one which asks what are the extreme possibilities, within fair limits of plausibility, that a given course of action can lead to. Innovation, the seeking of some degree of monopolistic entrenchment and the attempt to trap windfall gains are in Professor Keirstead's analysis the three fields of action in which profit can be pursued, and his scheme thus accommodates the other views mentioned above. But there is here a unity also in diversity : all pursuit of profit involves the making of expectations

[1] See, for example, the first paragraph of page 41.

and of policies and plans, more or less detailed and more or less far-reaching into the future, based on the expectations; profit-seeking does not consist, that is to say, in merely watching the movements from moment to moment of the pointer on the "marginal revenue" gauge and the pointer on the "marginal costs" gauge, and adjusting the throttle-lever of output so that the two gauges give the same reading.

To have thus put upon one map, as it were, the widely various discoveries or conjectures about the origin of profit, and shown that like a river it can have many sources, and can arise from several quite different types of entrepreneurial action, is a most valuable contribution to economic theory, but it is by no means the whole merit of Professor Keirstead's book. The interest and importance of this book arise from the author's deep insight into entrepreneurial psychology, which the reader is led to trust because it is obviously derived from natural, easy and prolonged contacts with business-men themselves, something entirely different from the artificial and witness-box atmosphere of the formal interview method. Men who think that everything they say will be taken down and may be used as evidence to hang them or their industry are likely to put a gloss on their mental procedures and be at more pains to emphasise their high moral principles than to report upon careful introspections. I think that Professor Keirstead has been able to see into the hearts of his informants. In a book of high stylistic excellence one of the most striking passages deals with the complex of questions: What are the motives which underlie the enterpriser's decisions? Is it realistic in these days to argue as though a single person combined the functions of decision-making in face of uncertainty and of bearing the consequences of these decisions, or is the enterpriser typically a man whose reputation and self-esteem as a successful leader of business is the most important thing he has at stake, so that he is led to think of the firm as having interests of its own, with which he identifies himself, and which are quite distinct from those of the shareholders? Does he measure his own success both by the capacity of the firm to *earn* profits and by the scale which it can attain by ploughing back, rather than distributing, those profits?

Professor Keirstead himself would not suggest, I think, that he has given us a complete and final treatise of the theory of profit, its nature, origin and effects. What can be truly said is that in a book of high distinction, where a profound analysis is set forth in lucid and persuasive prose, he has drawn attention to a field of economic theory of first-rate importance which, except in works

that cut obliquely across the subject in pursuit of other central aims, has been almost totally neglected since before most of to-day's economists began their work. Let those who seek subjects for research and for doctoral theses, for lecture courses or books or examination questions, ask themselves whether the theory of profit does not merit their attention. Professor Keirstead's book will suggest a hundred interesting lines of further work, and for many of these it will provide an outline map ready to be filled in.

G. L. S. SHACKLE

Liverpool.

STUDIES IN NATIONAL INCOME AND EXPENDITURE

THESE publications,[1] here referred to as Stone and Chapman respectively, are two of the first three volumes to appear in a series of Studies issued under the joint auspices of the National Institute of Economic and Social Research and the Department of Applied Economics, Cambridge. The main objects of the series are to compile national accounts for each year from 1920 to 1938 and to construct and test econometric models on the resulting data. Stone includes a general review of the econometric problems in addition to detailed estimates and analyses of consumers' expenditure on food, drink, tobacco, rent, fuel and light; a second volume is to cover other items of expenditure. On the income side of the national accounts, the first estimates relate to wages and salaries, published in Chapman. Later publications in the series will cover other aspects of national income and expenditure.

This work of Mr. Stone and his colleagues is beyond adequate praise. The estimates are authoritative and, though nothing can ever be described as final, it is difficult to envisage any major revision. The analyses of the data use econometric techniques of recent development and the results, *e.g.*, on the elasticities of demand, are almost as important as the basic estimates themselves. The clarity of exposition in these volumes is only to be matched by the elegance of the production by the Cambridge University Press.

The moving spirit in this vast enterprise is Richard Stone himself, but he lays great emphasis, quite rightly, on the team work involved. In addition to the authors and "assistants" named on the title pages, many economists and statisticians have contributed—Durbin and Watson, Houthakker and Prais, Geary, Orcutt, Tobin and others—and their work is to be found in a growing list of separate publications. Mr. Stone notes with some regret that, except for an occasional and brilliant pioneer, no single individual can any longer expect to produce basic results in

[1] *Studies in the National Income and Expenditure of the United Kingdom.* Edited by Richard Stone (Cambridge: University Press, 1953):
Volume I. *The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom 1920–1938.* By Richard Stone, assisted by D. A. Rowe and by W. J. Corlett, Renée Hurstfield, Muriel Potter. Pp. xl + 435. 105*s*.
Volume V. *Wages and Salaries in the United Kingdom 1920–1938.* By Agatha L. Chapman, assisted by Rose Knight. [illegible]

applied economics. "The co-ordination of economic facts and theories involves . . . mathematical problems of formulation, statistical problems of estimation and the testing of hypotheses and problems of computation" (Stone, p. xxvi). Some may look upon this with apprehension, since it implies that the training of the applied economist and economic theorist alike must include more than a little advanced algebra and calculus, together with some aquaintance with modern computational techniques. The traditions of the Marshallian approach, and Keynes's concentration on economic policy, are not given up; it is simply that they must be firmly based on co-ordinated data and analyses of increasingly elaborate kinds. It is good to see it confirmed that Cambridge is to be numbered among the leading international centres of econometric work, if only to be sure that econometrics will consist of more than flights into mathematical abstraction.

The introduction to econometrics given in Stone is excellent, always to the point and full of that kind of accumulated wisdom which makes a reviewer wish he had thought of it himself. We have to be thankful for Mr. Stone's excuse that "in the present stage of development econometrics for everyman would be unintelligible" (Stone, p. xl); the subject has been brought at least one stage nearer everyman's comprehension. A general account of econometrics and its relation to economic policy (Introduction and Chapter XVII) is followed by an economic formulation (Chapter XVIII; Market Demand Relationships) and an elegant but mathematical account of the statistical problem (Chapter XIX; Statistical Procedures). Not all of this last chapter will be intelligible to an economist—since matrix algebra is not yet generally part of his equipment—but he can read §§ 1, 3 and 10 with great profit.

Mr. Stone's problem is to estimate parameters in a market demand relation, and he has only series of nineteen years for the purpose. His technique is to reduce the number of parameters to be found, first, by assuming results which might otherwise be verified *e.g.*, that the sum of price elasticities is zero (Stone, p. 328); and then by using budget data for the estimation of particular parameters (*e.g.*, income elasticity). He is therefore compelled to make a formidable set of assumptions, that budget data relate to the demand function of a single individual, that individual and market demand functions are of the same form and usually that all income changes are in proportion. More work in these fields is clearly necessary. There is also a question of changing tastes over time and the contrast between "carefully elaborated theory

of the influence on demand of income and prices " and " extreme vagueness about the way in which changes in tastes and habits affect consumers' behaviour " (Stone, p. 272). Among many comments on the problem of aggregation, Stone notes that the postulate of continuity should be made *after* the market demand relation has been formulated, but that it still needs to be made *before* aggregation (Stone, p. 256).

The statistical technique adopted by Mr. Stone is the single equation method based on least squares. Hence his excellent account of serial correlation and other problems is " in terms of various ways in which regression models may fail to satisfy the assumptions of the method of least squares " (Stone, p. 279). He stresses the important fact that, in contrast to the single equation technique, the method of simultaneous equations does give consistent estimates of parameters but only at the cost of high sampling variances. The paragraphs on tests of significance are masterly in the way they show the relations between the normal, t, χ^2 and F distributions (Stone, pp. 241–4). There can only be minor objections to his exposition, as when he writes a relation on p. 255 which is not explained until p. 263, and when he introduces a prime to indicate a logarithm (*e.g.*, $p' = \log p$) which tends to be confused with his notation Δ' for backward first differences.

The statistical estimates of basic series are most carefully derived both in Stone and in Chapman, and the amount of work must have been prodigious. There are such conceptual problems as the treatment of pensions and pension funds in wages and salaries, and numerous decisions to be made on definitions and distinctions. The most welcome feature here is that everything is described; none of the inevitable limitations of the estimates is hidden or disguised. By no means all problems can be resolved; for example, should the earnings of share-fishermen, taxi-drivers or ticket-takers at football matches be included in wages and salaries? An extensive table in Chapman codifies the reliability of all the pieces of data used in estimating the wages and salaries bill. For example, estimates of numbers and average earnings of " hairdressers, manicurists and chiropodists " are coded D = Conjectures. Since this is a small item, with aggregate earnings under £10 million, precise estimates are not needed. In fact, " it was assumed that average annual earnings would be the same as those of shop assistants. This assumption can be defended only on the slender grounds that the figure for 1938 appears not unreasonable in comparison with a rough estimate based on rates of remuneration set for the hairdressing craft in 1942 . . . "

(Chapman, p. 222). Looking back to the estimates for shop assistants, we find that the average earnings are " estimated from data obtained in the study of salaries carried out by Marley and Campion. . . . The trend of salaries from 1920 to 1924 was guessed by reference to Ramsbottom's general wage-rate index " (Chapman, p. 150). This clear reference to assumptions, and even to guesses, is typical of the whole work.

Since estimates are often so conjectural, figures for small groups cannot be reliable in themselves. Moreover, the general level of a larger aggregate is set more correctly than its fluctuations over time. In the estimate of the wages and salaries bill, frequent use is made of the wage-rate index for interpolation and extrapolation (in default of actual earnings), and this implies that year-to-year changes are underestimated, that fluctuations tend to be ironed out. The main conclusions are not affected, *e.g.*, the result that, of the factors influencing the growth of wages and salaries from 1932 to 1938, the rise in employment was twice as important as higher earnings within industries, with the movement of the labour force between industries of negligible influence (Chapman, p. 32). The limitations are more troublesome in Mr. Stone's econometric estimates of income and price elasticities of demand (*e.g.*, those for food, Stone, Table 106). Our suspicion must be that Mr. Stone has squeezed as much, and perhaps more, out of the data as they will stand. There are, for example, clear indications of curvilinear regression of food expenditure on total expenditure in the budget data, but it is doubtful whether this can be pursued without a firmer factual basis than that provided by the budgets available.

It is very tempting to try to carry post-war data back to those of the inter-war period, as now estimated by Mr. Stone and Miss Chapman. The limitations of the material for this purpose are illustrated in the two following examples. The first, from Stone, attempts to continue the series of consumption of " meat, bacon and poultry " in value, quantity and price in 1920–38, by the use of corresponding series from the official national income calculations (see p. 128).

The extrapolation to 1948 and 1952 is approximate, since the C.S.O. estimates and coverage are somewhat different and since index numbers based first on 1938, and then on 1948, need to be spliced together. The whole series is sufficiently reliable to indicate that consumption of meat increased in quantity from 1924 to 1938 approximately in proportion to the growth in total population, though less rapidly than the adult population. By

Consumers' Expenditure on Meat, Bacon and Poultry

		Consumption (£mn).		Price index 1938 = 100, $\frac{\Sigma p_n q_n}{\Sigma p_{38} q_n}$.
		At current prices. $\Sigma p_n q_n$.	At 1938 prices. $\Sigma p_{38} q_n$.	
Stone's data [1]	1924	379	335	113
	1929	389	341	114
	1938	356	356	100
C.S.O. data [2]	1948	350	263	133
	1952	728	325	224

[1] Stone, Tables 12 and 13, excluding eggs and "other meat products."
[2] Cmd. 8203 (1951) and National Income Blue Book (1953).

The last column is the (current-weighted) price index corresponding to the (base-weighted) quantity series of the second column. Stone shows this series multiplied by the 1938 value of consumption (£356 million), but it is then difficult to interpret, e.g., it is not $\Sigma p_n q_{38}$ but $\frac{\Sigma p_n q_n}{\Sigma p_{38} q_n} \Sigma p_{38} q_{38}$.

1952, meat consumption was nearly 9% below 1938 in aggregate and over 13% lower on a *per capita* basis. The price rise for meat was about the same as the average for all retail prices from 1938 to 1952. Such results have a bearing on current questions of de-rationing, particularly in relation to the additional fact that the price (substitution) elasticity of meat items varies from 0·4 (home-produced beef) to 1·5 (home-produced mutton) on pre-war evidence.

The other example is from Chapman, and it attempts to carry her estimates of average wages and salaries forward to 1952, by use of post-war data:

Wages and Salaries

		Wages.				Salaries.			
		Aggregate, £ mn.	Nos., mn.	Average. £.	Average. 1938 = 100.	Aggregate, £ mn.	Nos., mn.	Average. £.	Average. 1938 = 100.
A. Including pension funds; Chapman's data [1]	1924	1372	12·69	124	95	716½	2·82	254	101
	1929	1658¼	13·43	128	94	795	3·14	253	101
	1938	1910	14·67	130	100	901	3·78	239	100
B. Excluding pension funds; Chapmann's data [1]	1938	1906	14·67	130	100	922½	3·78	244	100
Official data [2]	1951	3690	16·06	317	244	2550	5·11	499	204
	1952	5460	16·12	339	261	2755	5·15	535	219

[1] Chapman, Tables 1 and 4, adjusted by use of data on shop assistants and hairdressers, Tables 58 and 88.
[2] Aggregate from National Income Blue Book (1953); total numbers from *Ministry of Labour Gazette* (February 1953), distributed over wage and salary-earners according to data of 1951 Population Census, 1% Sample Tables.

Wages include earnings of shop assistants; salaries include directors' fees.

The estimates in Chapman were framed to agree with the classifications of the National Income Blue Book of 1952. They have already been rendered inappropriate by the changes adopted in the Blue Book of 1953. In particular, Miss Chapman includes shop assistants with salary earners, but provides information for an approximate transfer of the group to wage-earners; she includes, though not completely, employers' contributions to pension funds (or alternatively out-payments of pensions), but quotes an estimate of the amount for 1938. The necessary adjustments are made in the above table; they can be no more than approximate. Another adjustment is needed, but not made above, since the post-war numbers include the unemployed and count part-time workers as units, whereas Miss Chapman makes allowance for both these factors. The comparison for salaries is little affected by this difference in the treatment of numbers, but the increase shown in average wages since 1938 may be a considerable underestimate. It is evident that there was no increase in the average salary earned from 1924 to 1938 and that the subsequent increase of 1952 was just about in line with the rise in prices. The small rise in salaries, as compared with wages, arises in part because of the increasing proportion of women salary-earners, and only in part because of inferior bargaining power.

The data and analyses of this series of studies are obviously relevant to a consideration of current questions. It is twelve years since the work began, but Mr. Stone has made a convincing case for the postponement of publication on the score that new material has become available and that new econometric techniques have been developed (by himself and his team among others) since 1941. It is equally clear that data for the inter-war period are subject to decreasing returns in their usefulness as time goes on. I would therefore conclude with a plea that the remaining volumes be published as expeditiously as possible, both to provide data for econometric work and to furnish the background which is so important in current discussions on economic policy.

R. G. D. ALLEN

London School of Economics.

REVIEWS

La Pensée Économique en France depuis 1945. By ANDRÉ MARCHAL. (Paris: Presses Universitaires de France, 1953. Pp. 240. 700 Frs.)

M. MARCHAL introduces his review of post-war economic thought in France by noting the frequency of "crisis" talk among his colleagues. Their manifold descriptions or diagnoses of an alleged crisis in economics give one a first broad impression as to how French economists have recently been seeing the fundamental problems of the subject. For example, M. Henri Denis calls attention to "*les critiques addressées de tous côtés à la science économique*"; M. Morazé has complained of "*les raffinements byzantins qui réduisent chaque année un peu plus la part du réel dans l'enseignement économique*"; M. Allais has referred to "*l'abus du verbalisme*"; M. Culmann has remarked that "*les économistes d'autrefois écrivaient pour les citoyens intéressés à la chose publique; les économistes d'aujourd'hui écrivent pour leurs élèves*"; while M. Fourastié has suggested that "*l'expérience prouve que les hommes d'action n'ont que faire de connaissances abstraites et vagues qui ne leur sont d'aucune utilité dans la vie quotidienne*" (pp. 1–2). M. Marchal holds that none of these observations justifies speaking of a "crisis" in economic thought, though he believes that we are in the midst of various "crises" both narrower and wider. More narrowly, he considers that there is a crisis in classical liberal economic theory and its typical simplifications, which seem at one period to have had a much more dominating and narrowly exclusive hold on the subject in France than even in this country (judging, at any rate, by the exiled Walras' complaints fifty to eighty years ago). More widely, there is what M. Marchal describes as a crisis "*commune à toutes les sciences depuis le début du XXe siècle, et on peut lui donner un nom: c'est la crise du déterminisme*" (p. 6).

From the start of M. Marchal's survey, or even from a glance at his *table des matières*, it will at once strike the English reader that—as in the case of French political parties and tendencies—a review of French economic thinking requires much more numerous and elaborate classifications and subdivisions than would a corresponding British survey. M. Marchal mentions in this connection that the French economist, as a thinker, tends to be

"*essentiellement individualiste*" (p. 9). Along with this intellectual individualism there seems to go also a much greater freedom of entry into the serious forum of economic discussion than exists in this country. In France numerous and considerable contributions come from lawyers, engineers, historians, sociologists, and officials, which naturally makes for a much wider range of questions and approaches than in Britain. This difference in the French scène, is obviously connected with differences in university traditions and faculty demarcations, but the full causation would be difficult to unravel.

M. Marchal classifies French economists under the three broad headings of "*Économistes de Tradition Classique*," "*Économistes de Conception Réaliste et Sociologique*," and "*Économistes d'Observation.*" The second of these headings has by far the widest and most heterogeneous coverage. But even in the case of so comparatively compact and clearly-demarcated a body of doctrine as that of the French classical tradition ("*le courant classique et abstrait, déductif, hypothétique,*") its representatives have each very much their own special, and often mutually contrasting, variants. Of the leading French "classicals," M. Rueff emphasises the principle of private property as the foundation of a free and efficient economy; M. Allais the organisation and maintenance of the mechanism of competition; M. Baudin the need to give the creative *élite* its head if social and economic ossification is to be avoided; and M. Villey the guarantee which, in his opinion, policies of economic liberalism give us against "*le monstrueux impérialisme de l'efficience*" (p. 30).

It is under the heading of "*Économistes d'Observation*" that M. Marchal mentions the comparatively small amount of econometric activity in France. He is not hopeful as to the future for this branch in his country; partly because the money is not forthcoming to run the large organisations necessary, and partly because the requisite discipline, or team-work, "*n'est pas la qualité primordiale des Français*" (p. 172). As regards mathematical theory there seems to be a great deal of reserve and even strong suspicion among French economists, though after the healthy realistic manner of Marshall rather than that of the obscurantists who completely failed to recognise Cournot, Dupuit and Walras seventy to a hundred years ago.

It is when we come to the second of M. Marchal's main groupings, "*Économistes de Conception Réaliste et Sociologique*" that the diversity of direction and principle becomes really complex. There is, first, a school of thought which looks for a closer and more

profitable alliance with psychology in order to fill out the rather insubstantial formulæ of micro-economic analysis (like American economists such as Fetter thirty or forty years ago). But by far the most important trend according to M. Marchal, which of course includes a variety of individual interests and tendencies, is that towards an alliance with sociology or with particular branches of political and sociological analysis. M. Marchal states : " *La tendance à réintégrer la science économique dans un cadre sociologique est sans doute le trait le plus caractéristique de la pensée française actuelle—au moins de celle qui est representée par les universitaires de la generation " active " (entre 30 et 60 ans)* " (p. 75). (Apparently, as regards French " universitaires," there is a reliable correlation between chronological and mental or intellectual age.)

Of course, in almost all British economic theorising politics and sociology come in only with certain more or less explicitly stated political "assumptions," to be taken or left but not further discussed by the economist as such (or often " as " anything else). Here there has always been comparatively little opposition to or deviation from the methodological tradition, going back to the classical essays of Senior and J. S. Mill. This marks off sharply the economic *processes*, on which it is the first business of the economist to concentrate, from the legal, social and political *framework* within which these processes operate. Possibly this tradition has been so much less questioned in Britain partly because even to-day a given (or as contrasted with parts of the Continent a *comparatively* steadily evolving) social order can perhaps still be taken for granted *rather* more readily on this side of the Channel, which has enabled British economists to stick to their classical lasts without losing too seriously in relevance. Anyhow, it is this frontier line between a given framework of institutions and social classes and a more or less pure economic process which many French economists think they must remove if they are to get to grips with the decisive " variables " in their field of study. M. Marchal tells us that the majority of his colleagues believe that " *les facteurs sociologiques ne sont pas seulement des cadres de l'activité économique, mais qu'ils en sont l'essence même et que l'on ne peut sans arbitraire et sans danger dresser des frontières précises entre l'économie politique et la sociologie.*" Particularly is this the case with the problems both of any sort of realistic dynamic analysis, and of macro-economic analysis and policy. In fact, French economists are here following the trail blazed by Pareto, who leaped quite deliberately from pure economic statics to politico-sociological dynamics, in particular, for example, when he approached problems of inflation

from the sociological side in his analysis of the Rentier and Speculator types in his Treatise of Sociology.

It is under this heading (" *Économistes de Conception Réaliste et Sociologique* ") that M. Marchal discusses the ideas of François Perroux about " *macro-décisions* " and about economic power-relations or " *domination.*" But we may cite by way of constructive example the approach to contemporary problems of inflation in recent articles by M. Aujac and M. Mainguy (*Économie Appliquée*, 1950). The approach of economists to the subject of inflation has, of course, been to treat it as a monetary and public-financial problem (to some extent " abnormal " and pathological) which has social consequences which the economist can indicate but which it is not his task systematically to examine. What French economists now seem to be suggesting is that there may be a need for quite a different line of approach if any deeper, more practical or more realistic understanding of the problem of post-war chronic inflationary pressure in western countries is to be obtained. The most obstinate aspects of this problem do not relate to unsatisfactory pure monetary analysis or financial techniques. M. Aujac proposes to reverse the traditional approach to the problem and to treat inflation not as a monetary phenomenon with social consequences but as a social phenomenon with monetary consequences : that is, to start from the groups, group relationships and group expectations which make for a chronically inflation-prone economy, with its inevitable and almost secondary monetary and public-financial by-products. M. Mainguy has illustrated M. Aujac's approach with regard to the control of inflation in Britain, showing how the fundamental element in that control is the agreement of an important social group or groups rather than any particular fiscal or financial techniques. We cannot attempt here to summarise or appraise the essays of M. Aujac and M. Mainguy. We have simply mentioned them in order to show that French economists are not merely proclaiming grandiose programmes for the interpenetration of economic and sociological analysis, of which there have, of course, been many in the past, at least since the days of Roscher and Comte. Nor are they concerned simply with linking up " large-scale " theories of economic and social-political development in the manner of Schumpeter and Marx. They are concerned with giving *more complete* explanations of limited contemporary practical problems than is possible within the classical frontiers of economics. It does seem that M. Marchal makes an interesting and impressive case for placing his main hopes for the progress of the subject in

France in " *l'interpénétration des différentes branches de la science économique avec les autres sciences sociales* " (p. 188).

The contrast could not be more marked between these French hopes (and actual French practice), and the position in this country, where even when economics has long been carried on side by side with political or sociological studies it continues to remain—for better or for worse—hermetically sealed against any such " *inter-pénétration* " (as Professor Hicks has recently pointed out with regard to Oxford's P.P.E.). On the subject of political parties, probably a vast majority of Englishmen—Proportional Representationists excepted—could lay their hands on their hearts and affirm that they saw only advantage, and little or no disadvantage, in the few broad, simple and fairly lasting party demarcations in British politics, as contrasted with the variety and heterogeneity of party divisions and directions in France. Possibly the British economist can make a correspondingly confident affirmation that he does not envy his French colleagues for their variety and heterogeneity of directions and methods, and for the increasing disregard by " active " French economists of what in England have come by almost all to be recognised as the traditional, unalterable, academically established or examinationally convenient frontiers of the subject. On the other hand, there may possibly be some questions worth re-opening. In any case, we may be most grateful for the valuable stimulus provided by M. Marchal's lively, lucid, and (as far as an outsider can tell) very fair review of the state of the subject in France, and for the help he gives in directing us to the recent French writings which seem most relevant from the point of view of our own interests.

T. W. Hutchison

London School of Economics.

Readings in Business Cycles and National Income. Edited by A. H. Hansen and R. V. Clemence. (New York: W. W. Norton (London: Allen & Unwin), 1953. Pp. v + 588. 30*s*.)

Professor Hansen and Professor Clemence have sought in this volume of *Readings* to assemble a collection of articles that is " intended primarily for the use of undergraduate students " (p. ix). It would seem that an undertaking of this sort must be judged on two criteria. First, how adequate is it in conveying to the reader the state of thought on the subject surveyed? Second, how useful is it in stimulating thought? On both of these questions this volume gets high marks.

It is certainly a very comprehensive *Readings*. It falls into seven sections, dealing with historical episodes, business-cycle theories, economic dynamics, econometrics, international and interregional aspects, long cycles and cycle policy. It ranges in time from an excerpt from J. S. Mill's *Principles of Political Economy* to some of the more recent ventures into the theory of growth. It reprints in a handy format a number of articles of great importance in the development of thought: Professor Kahn on the multiplier, Mr. Harrod's " Essay in dynamic theory," Mr. Kaldor's " Model of the trade cycle " (although I do not quite understand why this should be classified as econometrics) and the Keynes–Tinbergen controversy on econometrics—to be quite invidious and mention only a few.

It is a very useful collection; but it suffers the weakness that the editors have sought to cover so many aspects of the discussion of the trade cycle that any one of their sections is rather brief. Thus in the opening section on historical episodes, we learn about the crisis of 1847 in England, the " great depression " in England in the late nineteenth century, and then the 1920s and 1930s in the United States. The selections are all valuable examples of applied economics in this field, but the student seeking some guidance on the evidence of the facts will have to supplement these heavily. Then again, in the section on business-cycle theories the editors have had to rely quite considerably on individual chapters from various books. An author's thought cannot be adequately appreciated in this way.

The effect of comprehensiveness, then, is to give a good overall impression of thought on this subject, but hardly to give an adequate impression of thought on any one part of it. The volume's marks on the first of our criteria will thus vary with the use to which one wishes to put it.

That said, it must immediately be pointed out that this sort of collocation of diverse articles earns very high marks under our second criterion. One cannot read through the two sections on theory without being impressed once again with how much additional precision has been given to thought on the trade cycle by the concepts of the multiplier and effective demand and the subsequent developments based on them. We seem to have a clearer idea of the possible mechanism by which the economy will react to any particular disturbance. But there are also represented in this volume points of view that indicate that

while we may have a better idea of what the reaction-mechanism is, we are in some doubt as to what results it produces. We have cast off the Wicksellian cumulative process represented by some of the earlier articles of this collection, but we cannot make up our minds as to whether our economy is liable to explosive cycles and therefore needs "ceilings" and "floors"; or to damped cycles and needs intermittent shocks.

Likewise, we can see here some of our indecision on the theory of investment. It is particularly useful to go over the earlier articles and to wonder just where in our models we are to put, for example, Professor Aftalion's gestation period or Sir Dennis Robertson's saturation of investment opportunities.

It is also instructive to compare the section on historical episodes with those on theory and to wonder how much further our theory must develop before it can readily be applied. It is a little disturbing to be reminded by Professor Rostow that those who observed the data of the last quarter of the nineteenth century in Britain "emerged with quite different explanations. Each explanation depended directly on theoretical presuppositions" (p. 34). Those who insist that we have improved since then should read the article by Professor Schumpeter that is reprinted here.

It is in sum a collection that will guide the student through the literature and give him and his teacher something to think about. I should perhaps add that in my appreciation of this book I have discounted heavily to allow for my gratitude to the editors in reprinting an article of mine.

A. D. KNOX

London School of Economics.

Essays in Economic Analysis. By A. P. LERNER. (London: Macmillan, 1953. Pp. v + 394. 28*s*.)

THE purpose of this book, Professor Lerner explains in the preface, is simply to make available in a single volume a number of essays written by him at various times during the last twenty years. All have been previously published, and all are reprinted without modification or further comment. One cannot help feeling that Professor Lerner's failure to revise or comment is a defect by no means compensated for by his remark that he is a little disturbed by the degree to which these articles still express his opinions. For such a statement is just sufficiently non-comprehensive to leave the would-be critic wondering whether or

not he has seized upon an offending paragraph with which its author would not in fact now agree. Does Professor Lerner, for example, really hold in 1953, as strongly as he apparently did in 1939, the view that the only proper definitions of saving and investment are the *ex-post* definitions which make them identically equal? One almost wishes that he might, for an up-to-date defence of this view would nicely serve to restore the symmetry of the present situation in which only the fence and the far side of the fence seem to be occupied with any considerable degree of resolution. Again the essay on Factor Price Equalisation contains a slip (commented on at length elsewhere by the present reviewer) which renders the main conclusion invalid, although the geometrical technique there developed retains sufficient interest to justify its reprinting.

The essays included vary considerably in importance and difficulty, ranging from a rather complex geometrical exposition of the processes of price formation in International Trade to a relatively trivial, but not uninteresting, discussion of what is, or ought to be, meant by the term "inflation." The book is arranged in four sections.

Section I, entitled Ideal Output, requires little comment from a reviewer, since it contains only two brilliant and deservedly well-known papers on a subject with which Professor Lerner's name has come to be intimately associated. The first of these, especially, remains, after nearly twenty years, one of the best and clearest explanations of the marginal-cost pricing principle, for which no satisfactory alternative has been suggested, despite the many hard words which have been said regarding its practicability and the necessary qualifications with which it must be hedged around. It is surprising also to note on re-reading how many of these qualifications are in fact made by Professor Lerner himself in this very early exposition.

Section II is perhaps the most valuable part of the book. It consists of four essays which, taken together, constitute a "Geometry of International Trade" in some ways more comprehensive even than that recently published by Professor Meade. The essay entitled "Cost Conditions" is unfortunately marred by a misleading use of the expressions increasing and decreasing returns to identify respectively convex to the origin and concave to the origin transformation curves. This can be excused only by supposing that what is meant here by decreasing returns is simply that successively smaller amounts of commodity B will be forthcoming for equal amounts of commodity A sacrificed.

This is a very different thing, of course, from saying that both industries A and B are operating under conditions of decreasing returns in the ordinary sense, a proposition which does not necessarily follow.

Section III contains some useful diagrammatical representations of elasticity, together with a plea for the rehabilitation of the concept of arc elasticity. There is also a note on the theory of price-index numbers and a long essay which attempts to develop a theory of the effect of transport costs on location. The objection to the proposed measure of arc elasticity seems, to the present reviewer, to lie in the fact that it depends only on the position of the two end points, and is independent of the shape of the arc between. It is also difficult to handle algebraically. Of the essay on location theory, it can at least be said that it is itself appropriately located in the book under the general heading " More Diagrams."

The final section is devoted to employment and interest theory. Again, several of the essays included are deservedly well known, although this part of the book tends to date rather more than the earlier sections. It suffers also from the fact that in places it is difficult to read without continued reference to the work of other writers which it is concerned to criticise. Indeed, the chapter " Employment and Equilibrium " is simply a review of Professor Pigou's book, and the references are so specific that the whole essay is almost unintelligible without having recourse to the original work.

Much the most thought provoking of the papers in Section IV is the last in the book, which takes the form of a commentary on Chapter 17 of Keynes's *General Theory*, the chapter in which the mysterious concept of " own " rates of interest is introduced. Professor Lerner, with some reluctance, accuses Keynes of creating confusion by giving the same title, own rates of interest, both to the fee paid if wheat is borrowed and the money rate of interest measured in terms of wheat. This accusation, however, seems to rest on Professor Lerner's own interpretation of Keynes's definition. For the relevant passage in the *General Theory* could be taken to mean that the own rate of interest of wheat is the marginal utility (or disutility) of holding wealth in the form of wheat; an interpretation which appears considerably to weaken the force of Professor Lerner's argument. Professor Lerner's expression " money rate of interest in terms of wheat " also seems rather unfortunate. It is difficult to imagine at what price it is possible to convert £5 per cent into *minus* 2 quarters per cent. Nevertheless, the meaning is clear from the context, and the whole paper is stimulating and worthy of study.

Much profit can be derived from a re-reading of many of these essays, and the whole book should make a useful addition to the economist's library.

I. F. PEARCE

Nottingham.

The Organizational Revolution—A Study in the Ethics of Economic Organization. By KENNETH E. BOULDING. (New York: Harper & Brothers, 1953. Pp. xxxiv + 286. $3.50.)

ONE of the advantages of insisting upon the scientific character of economics is that economists are thereby restrained from publishing their opinions on the good society or the good life in general; readers are also spared the comments of reviewers on those opinions. But this happy condition does not satisfy the National Council of the Churches in the United States, which is sponsoring a series of books on the Ethics and Economics of Society. Professor Boulding's study of the ethics of economic organization is the second in this series, and in his book the author, released from the constricting grooves of economic analysis, ranges gallantly over the illimitable terrain open to him. His main concern is with the increase in the " number, size and power of organizations," especially of economic organizations, in modern times, the causes of this development, the political and psychological consequences and finally the ethical problems to which it gives rise. Having set out his thesis in general terms, the author then discusses the " organizational revolution," in various fields—" labour, agriculture, business and the national state."

The book was conceived " not as an authoritative pronouncement but as a contribution to a discussion," and in the latter part of it this discussion is actually begun. Here, first of all, Professor Reinhold Niebuhr provides a critical commentary on Professor Boulding's argument. This is followed by Professor Boulding's reply, and then, in the final chapter, the author sets out and comments upon criticisms made by other persons who had the opportunity of reading his original statement. The unusual composition of the book means that, to a large extent, the task of appraising Professor Boulding's work has already been ably performed within the compass of the book itself.

The author has written in a mood of high seriousness, and his views command respect. The book includes many penetrating

observations (by Professor Niebuhr as well as by Professor Boulding) on economic and political tendencies in contemporary America, and there is a sustained attempt to distinguish the conclusions that arise out of economic analysis from those that depend upon personal ethical judgments. But, in the reviewer's opinion, the scope of the work is over-ambitious. The range of topics which the author has tried to cover is so wide that he has been obliged to leave much of his discussion in the form of *obiter dicta*; and as he was compelled by the nature of his subject to move frequently from one plane of discourse to another, his argument at times becomes confused. This confusion is increased by a lack of consistency in some of his definitions. The book is, therefore, interesting and provocative rather than illuminating.

The most obvious inconsistency is in the concept of the " organizational revolution " itself, as some of the commentators have noticed. Thus there is a confusion between large-scale organization and organization *per se*. Professor Boulding sometimes argues that the increase in the number and power of large organizations, which is the consequence of technical, administrative and economic changes, has enfeebled the market economy and has produced deleterious political and psychological results, such as the substitution of impersonal for personal relationships, the loss of personal freedom and the growing efficiency of coercion, and a form of society in which Christian virtues are sacrificed. This is a tenable thesis. But at other times he seems to hold that *all* forms of organization and authority are suspect and that only in an atomistic society and a free market are the ethical values which he cherishes likely to be preserved. When he argues from history, moreover, he greatly under-estimates the importance of organization and corporate activity in the past, chiefly because he seldom casts his mind back beyond the conditions that existed in mid-nineteenth-century America.

Along with a sophisticated analysis of economic organization, there runs a somewhat naïve treatment of political and ethical problems. Why, he asks (in his central chapter on Ethics and the Theory of Organization), do man's achievements turn to dust? Why is human progress so slow and so self-defeating? Why does even the proud command over nature which bestows on man such immense material benefits also hasten him to destruction? It is not, Professor Boulding answers, because man's ethical ideas are inadequate. The reason is to be found, first, in his incomplete understanding of the laws of social change, and secondly, in defects in the machinery of organization—perhaps in the very presence of

organization (pp. 66–8). The lack of adequate communication in a complex society is particularly stressed. These deficiencies in our social arrangements are real, and it is right to seek remedies. But the author implies that his answers to the great questions he poses are complete, and that if we had greater knowledge and if the defects in communication could be removed, all would be well. Such extravagant faith in the benevolence of the instructed individual has little foundation in experience.

One of his critics objects to the analogies with which Professor Boulding illustrates his arguments. Some of these analogies, though imaginatively conceived, are rather far-fetched. Thus, the instability of an economy compounded of oligopolies is paralleled by the instability of a political society under a party system. Such a society will only achieve stability, he declares—apparently with some contempt—(p. 64), if the people are politically apathetic so that party competition becomes " a sort of ritual." To this, one need only reply that willingness to subject political controversy to the restraints of ritual is a welcome feature of social behaviour and is by no means to be despised. Neither these comments nor Professor Niebuhr's more trenchant criticisms, however, are likely to disturb Professor Boulding's passionately-held conviction that the conditions of a good life are found only in a society where organizations have narrowly limited functions, where authority is feeble and where a free-market economy is successfully maintained.

G. C. ALLEN

University College,
London.

Welfare Economics and the Theory of the State. By W. J. BAUMOL. (London: Longmans, 1952. Pp. v + 171. 21*s*.)

THE attention given to various branches of theory is subject to fluctuations. At the present dynamics and the theory of development are on the up-swing and there must be many Ph.D. theses in preparation on these topics. A few years ago, welfare economics was booming, and Professor Baumol's book is an offspring of that boom. It is in fact a somewhat revised version of his Ph.D. thesis written in 1947–48, and it is a pity that inevitable delays in publication mean that it is presented in book form only now, when the upper turning point (reached with Little's famous book) of the " welfare boom " has long been left behind. For there is no doubt that Professor Baumol made a substantial contribution to the late 1940*s* discussions.

The main question posed in the book is a very interesting and important one: How far is the ordinary market mechanism adequate not only in ensuring an "optimum" allocation of resources, given that these are allocated by the market mechanism, but also of ensuring the best allocation possible when no restrictions are placed on the mechanism of allocation? Thus, for instance, take the definition of optimum allocation as being that allocation at which the distribution of income is the desired one and no one can bribe anyone else to make any change in the existing arrangements. It is now possible that both these conditions are fulfilled, and yet there may exist a potential group of people, who, if they could only get together, would be willing and able collectively to bribe another group to make a change. In other words, the market mechanism, by insisting on an individualistic method of decision taking, excludes a large group of important decisions from the range of choices open to members of a community. To give just a few of Professor Baumol's many examples: everyone may desire to end an inflation, yet no single individual can, or is willing to do so, say, by saving more, although they could clearly do, and be willing to do this collectively; a group of residents all desiring street-lights will none the less each, acting rationally, contribute to this far less individually than they would be willing to do if they knew everyone else was contributing his "fair" share; everyone may be in favour of a certain war, yet it might be impossible to get everyone to serve the war effort unless they were assured that everyone else was doing so as well; firms in a competitive industry could always reach a position preferred by all of them by acting collectively as a monopolist. There are literally hundreds of such examples of failure of the market mechanism to give effect to what everyone desires, and Professor Baumol gives an illuminating discussion on most of them, the best of these being his examination of the divergence between the risks people are willing to take as individuals and those they are willing to subject themselves to collectively.

Since it is difficult, in a large community, to take collective decisions, the argument appears to lead to general propositions concerning the economic role of government. That Professor Baumol takes this step is apparent from the title of the book, that he is not happy with it is apparent from his only weak chapter: Economic Theory and the Theory of the State. After all, the following argument, which sometimes seems to underlie Professor Baumol's reasoning, is a *non sequitur*: certain ends, desired by each individual can only be attained by those individuals acting together; it is difficult for those individuals in a large society to act together voluntarily; hence they will all prefer to be compelled by government to act together. To make the conclusion correct, we would have to insert the further assumption that no loss in satisfaction occurs when a voluntary action is changed to a compelled one. One suspects that this is not true for many people. Quite apart from that, there can be few cases of such unanimity of desire as postulated, nor is it easy to see how government would ascertain it if it existed. Thus Professor Baumol's point is an important one in assessing the extent to which the market mechanism leads to the attainment of the ends of the individuals in a community; it is, however, too slender to lend itself for a basis of a revised version of the social contract.

On the other hand, one feels that the purely economic implications of Professor Baumol's proposition could have been developed further, at the expense perhaps of the by now somewhat out-of-date summary chapters on the meaning of "ideal output." For instance, one would have liked to have seen the cases in which ends can only be reached collectively, classified into certain general categories. The external-economy case is an obvious sub-species. But there are others. Thus one suspects (although I have not attempted to verify it) that most cases of unstable equilibria belong to the Baumolian field. Such a classification would, if possible, make it far easier to assess the importance of the failure of the market mechanism in this sphere, than the listing of examples does.

As already mentioned, the summary chapters are slightly out of date. They also suffer from Professor Baumol's desire to formulate propositions geometrically. Thus the section on the construction of community indifference curves is unnecessarily complicated and in any case far less general than recent work suggests. Transformation curves are widely used, but the implied assumption and meaning of "perfect mobility of factors" hardly discussed. That prices must be proportional to marginal costs is deduced from the tangency of transformation and community indifference curves, but the arguments leading to marginal-cost pricing are not given, although only such pricing is stated to be optimal. The mis-allocations resulting from monopoly are discussed by ingenious geometric devices, but the impression is given that the monopolists' welfare does not count! There are a number of similar complaints, but, by and large, these summaries of the 1940s theories should prove useful to students.

The sections of the book devoted to a discussion of older

economists who had noticed the particular failure of the market mechanism to which Professor Baumol devotes his book are both interesting and excellently presented.

F. H. HAHN

Birmingham University.

International Economic Papers, No. 3. Translations prepared for the INTERNATIONAL ECONOMIC ASSOCIATION. (London: Macmillan, 1953. Pp. 255. 15*s.*)

THE third issue of *International Economic Papers* is devoted mainly to the modern history of economic theory rather than to contemporary novelties. The first four of the seven items here were originally published in 1941, 1907, 1923 and 1900 respectively; while of the final three more recent articles, one by Professor Hans Peter of Tübingen is devoted to a comparison of Marxian and Keynesian Dynamics. This volume compels one to wonder how much economic thinking in Britain might have benefited if the main writings of, for example, Pareto, Spiethoff and Wicksell, all represented here, and still so stimulating, had been at once available in convenient volumes of well-selected English translations like this one. How would their then almost completely unknown ideas have fared during that post-Marshallian period, when—as Professor Robbins put it when introducing Wicksell—"the uncritical acceptance" of Marshall's Principles "so long tended to stifle the development of other lines of thought in this country"?

The first and longest article is by Dr. Tord Palander, and its sub-title "Some Methodological Reflections on Myrdal's Monetary Equilibrium" gives the clearest description of its contents. Myrdal's work appeared, of course, in three editions, and Dr. Palander sets out as follows the difficulty of getting the last of these (*i.e.*, the English edition) into perspective:

> "This partly-revised English edition gives the impression that it is a presentation of what Myrdal of 1939 considers Myrdal of 1932, *if* this latter had thought correctly, ought to have considered that Wicksell ought to have thought in 1898, if Wicksell had then thought correctly and had possessed the theoretical apparatus possessed by Myrdal in 1932" (p. 7).

This may sound slightly non-plussing, and might seem to indicate an essay in that sort of Model-Builders' History which expounds to us not so much what the classics or Walras, Marshall

or Wicksell, actually—and inevitably sometimes rather ambiguously—wrote; but which rather elaborates with a degree of precision with which the originals were never concerned—and for which they quite probably would anyhow have had no use—what they logically *ought* to have said, or what they "really meant," or *would* have said had they been writing for *Econometrica*, with only rather selective deviations into what they actually did say. But the prospective reader should not be dismayed, for Dr. Palander is concerned for the most part with a straightforward critical exposition of the new ideas and concepts which Myrdal introduced, and with the ways in which they may most fruitfully be developed, and not with clamping down on Myrdal or Wicksell some hyper-precise Procrustean "model."

The next item takes us back to Wicksell himself and a useful comprehensive article of his on the subject of Business Cycles. This expands the non-Swedish reader's knowledge of Wicksell's views on this subject considerably beyond the three-page note in Volume II of the *Lectures*. It is still clearer from this article that Wicksell made little or no application of his analysis of Interest and Prices to the explanation of the business cycle, which he approached much more from the "real" than from the monetary side (like Spiethoff). It is clear, too, how much Wicksell owed on this subject to German writers like Herkner, Spiethoff and others. Among the points Wicksell specially emphasises are, first, the role of changes in stocks of goods which he assumes to be built up during the slump and which make possible the eventual upswing; second, the disturbing role of economic growth, population increase and sporadic inventions; and, third, an optimistic view as to crises and cycles becoming less serious, contrasted in conclusion with the deepest long-run Malthusian pessimism about modern industrial development:

> "We must leave in abeyance whether at present we have come to 'the beginning of the end.' But this eventuality cannot be so remote that it does not deserve consideration. And we should above all else consider whether such a development, essentially extensive in character, is not, after all, fundamentally an economic mistake, a Sisyphus-labour, which is likely to have as its result that an ever greater mass of human beings must engage in an ever harder struggle for existence" (p. 70).

We cannot here attempt even relative justice to the next item, the weightiest and most celebrated in the volume, that is, Spiethoff's encyclopædic article on business cycles, which was the

culmination and summary of a quarter of a century's work on the subject, his first and vitally original articles having appeared, of course, in 1902–3. Professor Spiethoff contributes a new preface to this English edition.

The exchanges between Croce and Pareto " On the Economic Principle " may seem at first to be, in part, slightly disappointing, as is not easily avoidable in very brief treatments of weighty and fundamental themes. In fact, it may not be very readily perceived just what the massive gropings of the philosophical giant Croce—who initiated the debate—are actually getting at. But Pareto gives us a typically witty and pointed, and untypically patient and polite, exposition of his methodological ideas on pure economics. However, not having much space, and having to begin right at the beginning, or even before the beginning, he could not get very far.

The remaining two articles are on questions of Customs Unions (by Maurice Byé); and on the theoretically and practically interesting problem of underemployment in underdeveloped economies, by Ifigenia de Navarrete and Alfredo Navarrete Jr., which is the first and very welcome contribution from Mexico to *International Economic Papers*.

T. W. Hutchison

London School of Economics.

Income and Wealth. Series III. Edited by Milton Gilbert for the International Association for Research in Income and Wealth. (Cambridge: Bowes and Bowes, 1953. Pp. xiv + 261. 35*s*.)

The third volume in this series provides us with the second instalment of the papers presented to the Royaumont conference of the Association in 1951. Most of the papers in this volume fall into two main groups, the first being concerned with inter-temporal and interspatial comparisons of national accounts, and the second with the problems of national accounting in underdeveloped countries. In addition, there is one paper on statistical sources and methods and one on the treatment of Government economic activity.

The group of papers on comparisons over time and over space includes a paper by Shigeto Tsuru and Kagushi Ohkawa on the long-term growth of the National Income of Japan and a similar contribution in respect of France by a team led by Professor Perroux. While one is full of admiration for the painstaking and

scholarly approach shown by both sets of authors, little can or need be said on a general level about their efforts, as they will primarily be of interest to students of these two particular countries. A paper by Richard Stone and Kurt Hansen on " Inter-country Comparisons of National Accounts and the Work of the National Accounts Research Unit of O.E.E.C." is in reality much broader than the title suggests. It does, in fact, amount to a treatment of a wide variety of aspects of national income studies; there is, for instance, a large section entitled " Desirable Features in a Standard System of National Accounts." Although it cannot perhaps be said that the territory is entirely new or unfamiliar, it is explored with the expertise which we have long learned to associate with the name of Mr. Stone. The last contribution in this group is by T. Barna, and is entitled " International Comparisons of National Accounts in Economic Analysis." In many ways this is one of the most refreshing and stimulating papers in the volume, as the author does attempt to stand back and look at some of the modern techniques of national income analysis with a detached air. One may disagree with some of his points—the view that national accounts should only be constructed to show what the policy-maker wants them to show is surely subject to the criticism that the policy-maker (whoever this disembodied entity may be) can hardly know what he wants until he has seen some national income figures—but at least they are cogently argued.

The papers on underdeveloped countries vary immensely in their scope and viewpoints. At one extreme we have Professor Frankel on the " Concepts of Income and Welfare." There are some extremely well-argued passages in this paper and, in particular, it has the merit of exposing with great clarity some of the fallacies in what may for convenience be called the " slot-machine " attitude to backward countries (*i.e.*, if you put in a penny of capital you automatically pull out an ounce of product). On the other hand, one does feel that on occasions the author comes dangerously near to adopting the attitude that it is impossible to say anything about anything. This, to say the least, is a little unhelpful. Dr. Benham rebuts some of Professor Frankel's arguments with characteristic robustness in his " Income and Product in Under-developed Countries," but he would seem to be chasing a will o' the wisp in his advocacy (p. 175) of " neutral " national income estimates. This is, after all, the same problem as that of any writer on history. You must make some selection among all the facts; this implies some principles of selection;

therefore is it not better to try to enunciate your principles rather than pretend that in some strange sense you are disassociated from such mundane matters? Professor Rao examines the reason why the usual estimates of national income over-emphasise the differences in real income between advanced and backward countries. Many of his arguments are ingenious and perfectly valid, but some of his analysis is vitiated by the uncritical acceptance of the notion that a Western-type occupational classification has meaning and relevance in a country like India, where specialisation is still unknown among large sections of the population. Mr. Creamer, on the "Uses of National Income Estimates in Under-developed Areas," shows a very healthy awareness of the limitations of these exercises. One might, however, take issue with him in his argument (pp. 211–13) that the essential characteristic of underdeveloped countries is the lack of capital; for this implies that pouring in capital on a large scale will immediately make them developed. Need one do more than whisper, "Groundnuts"?

Finally, the "miscellaneous" group includes a paper by Milton Gilbert on "Statistical Sources and Methods" and a closely reasoned study by Ingvar Ohlsson on "Treatment of Government Activity."

Does this collection of papers leave one with any outstanding impression on the current state of studies in this field? Clearly, national-income studies are much more securely based than they were only a few years ago. This is a direct consequence of the preparation of estimates by teams in Government Departments and Research Institutes and the standardisation of procedures secured by International Agencies. But are there not dangers as well as advantages in the virtual elimination of the lone operator manipulating his slide rule by the light of his midnight oil? Investigators of this type play an important and perhaps indispensable role in preventing the premature acceptance of settled ways of thought and expression in fields where there is still scope for innovation. It would be a thousand pities if behind the plumpness of maturity were to lie the canker of rigidity.

A. R. PREST

Christ's College,
Cambridge.

La Théorie Économique du Temps Présent. La Monnaie. Edited by É. JAMES and A. MARCHAL. (Paris: Domat Montchrestien, 1952. Pp. 498.)

THIS useful compilation, to which Professor Émile James of the Faculté de Droit at Paris contributes a Foreword, consists of a series of articles by a number of the younger French economists, each of whom has taken as his subject the work of a distinguished modern writer on monetary theory. The writers whose work is thus expounded are: A. Aftalion, J. W. Angell, R. G. Hawtrey, J. M. Keynes, A. W. Marget, L. von Mises, B. Nogaro, C. Rist, D. H. Robertson, J. Schumpeter. In addition, there are two more general articles, the first of which deals with monetary theory in Swedish economic thought, and the second with monetary theory in Soviet Russia.

The articles vary somewhat in quality and also in method: in some cases they are wholly confined to exposition, while in others there is a certain amount of critical comment. In general, great pains have been taken to present a balanced and accurate summary of the views of each of these economists.

The initial impression left by these studies is one of almost bewildering diversity of views and theories. Nevertheless, it can safely be asserted that each of the writers whose work is here reviewed has, if in certain cases only as a matter of emphasis, illumined some aspect of the field of monetary theory; and the eclectic student who is prepared to read these essays with patience and thoroughness should be repaid for his trouble by a wider and deeper appreciation of the real nature of some of the major monetary problems which have exercised the minds of thinkers in this field, and many of which are likely still to remain the subject of controversy in time to come.

C. W. GUILLEBAUD

St. John's College,
Cambridge.

Banking in the British Commonwealth. Edited by R. S. SAYERS. (London: Oxford University Press, 1952. Pp. xviii + 486. 35*s.*)

THE members of the British Commonwealth are as variegated in their banking structures as in other characteristics, sharing only the formative influence of close financial links with London. That being so, the advantages of the Commonwealth as a unit for comparative study, at least in the field of banking, are rather dubious.

Nor does this book attempt such a study. The contributors for the most part confine themselves to factual exposition of banking in particular countries, with relatively little discussion of principle even in the context of the particular banking system under review, while the editor's brief introduction provides only a few general hints for the reader's guidance. Consequently anyone searching for general principles is fairly certain to be disappointed. On the other hand, the book is a useful compendium of information on particular banking systems: the contributors have assembled a vast amount of material—in some cases the fruit of primary research—and organised it skilfully; and they have taken care to describe the other credit institutions which together with the central and commercial banks constitute the financial organisation of a country.

This judgment, however, must be qualified by certain reservations. In some cases the historical detail obscures the contemporary picture, and in some the authors accept the official rationale of economic and monetary policy too uncritically. As a reference work, the book would have benefited by editorial provision for a classified bibliography for each country, including notes on available statistics, in place of the apparent anarchy of the present bibliographical notes. Finally (and to no-one's discredit), the fact that the book was completed by mid-1951 gives almost all the references to monetary policy a rather out-dated air.

Over half of the book is contributed by Mr. J. S. G. Wilson, whose chapters are distinguished by a thorough grasp of all the detail of the business of banking. His exposition of the structure of commercial and indigenous banking in India is an excellent survey of a complex subject, based on original research made possible by the generosity of the Houblon–Norman Fund; the reader might, however, have been assisted by a fuller explanation of money-market terms and some cross-referencing (for example, the Multani banker who appears on p. 169 is not characterised until p. 178). His chapters on Australia tend to excessive historical detail, with the exception that his discussion of the post-war central banking experience is over-compressed. His chapter on Pakistan, though interesting, is largely a digression on post-partition relations with India, and contains some perplexing statements about the effects of Pakistan's decision not to devalue her rupee in 1949. In all his chapters Mr. Wilson displays a curious reluctance to discuss the charts which accompany his text. (Graphs D and E, pp. 86 and 98, and the table on p. 302, for example, seem to stand in splendid isolation from the surrounding text; the final column of the table, incidentally, suggests an interesting correlation with the chart on p. 269.)

Mr. Dorrance presents a very clear picture of the Canadian banking system, which should perhaps have been supplemented by some reference to the Latin American business of the chartered banks, and by a note on banking in Newfoundland. (Newfoundland is mentioned only in the Sterling Area chapter; until it joined Canada in 1949 it was the only other Commonwealth member of the dollar area, and its monetary problems have been extremely interesting though little discussed.) Mr. Dorrance also describes the Bank of Canada with the authority of personal experience; but his useful brief account of Canadian monetary policy since the war is somewhat marred by uncritical acceptance of official doctrine—for example, the banking-school defense of monetary expansion cited on p. 148. The reader should also be warned that there are a number of errors of detail in Mr. Dorrance's two chapters. Mr. Day's description of South African banking is on the whole an admirable piece of work, especially as it was prepared at short notice; but his account of the National Finance Corporation is apt to be misleading, since the fact that the main function of this new institution so far has been to channel funds to the Government permits a less charitable interpretation than he gives it.

Professor Duncan's description of the banking situation in Ireland is too polemical and disjointed for the reviewer's taste; but it does contain a great deal of information, and his concern with politics suggests a deficiency in some of the other contributions. Professor Simkin's concise description of the development of banking in New Zealand is the only contribution to raise the crucial question of the nature and consistency of the policy objectives a central bank in a dependent economy should seek to follow. Mr. Gunasekera's contribution on banking in Ceylon is (intentionally) rather depressing; he stresses the obstacles to banking development inherent in the system of land tenure, and criticises the Monetary Law Act for its concern with control methods instead of with promotion of the pre-requisite economic development.

The book is completed by a chapter on banking in the colonial empire by Mr. Newlyn, and a short sketch of the development of the sterling area by Mr. Bareau. Mr. Newlyn's study is based on original research (another good investment by the Houblon–Norman Fund) and includes an interesting theoretical section. His illustration of the modifications in exchange-standard adjustment theory required to fit the institutional facts is important and

suggests a more general problem in the theory of economic union; but his remarks on the question of colonial fiduciary issues should have recognised the exploitation of local circulation requirements through forced lending to London inherent in the currency board system. Mr. Bareau's contribution is concerned with problems of policy co-ordination rather than banking.

Any attempt to survey the lessons of the experience summarised in this book necessarily falls outside the scope of a short review. The well-known problems of central banking in undeveloped money markets and in face of loose commercial bank reserve practices find ample illustration, as do the centralising force of economic crisis and war and the suitability of branch-banking systems as agencies of administrative control. Two points of a different nature also suggest themselves. In reading this book, one cannot help being impressed by the contrast between the wealth of useful banking statistics available in most of the countries reviewed and the incomplete and imprecise series doled out in the central country of the system. On the other hand, there seems often to be a paucity of informed discussion of monetary matters in the Dominions, with the result that the outside observer, forced to rely on official statements, finds it difficult to separate political from economic limitations on central banking control. There seems to be an inverse correlation between the supply of information to the public and the effective demand for it in banking systems of the British type.

HARRY G. JOHNSON

King's College,
Cambridge.

A Hundred Years of the Halifax. The history of the Halifax Building Society, 1853–1953. By O. R. HOBSON. (London: Batsford, 1953. Pp. v + 190.)

THIS book, by the doyen of British financial journalists, containing a foreword by Lord Halifax, is not only a commemoration of a centenary, beautifully written, printed and produced, but an essential work of reference for all students of the history of building societies. The Halifax was founded towards the end of 1852 on a very small scale, as the offshoot of a small but old-established friendly society—the Loyal Georgean—in a minor but progressive provincial town, of which at that time Mr. Hobson gives us a delightful description. Like other building societies, it still carries with it memories of its friendly society ancestry in an air of

conscious rectitude which would hardly be appropriate to a mere mortgage bank.

That this obscure little society, founded in a small provincial town, should in a hundred years have grown to be the nation-wide colossus that we know to-day can be attributed to many causes, but above all to the two men who served and directed it throughout the whole of the first eighty-five years of its life—J. D. Taylor, Secretary from 1853 to 1902, who established the tradition of efficient and economical administration which the Halifax has always maintained; and Enoch Hill, who, as Secretary, General Manager and President, controlled its destinies from 1903 to 1938. In addition to these, Mr. Hobson pays full tribute to a multitude of others who, in their various capacities, played their part in building up both the Halifax Permanent and the Halifax Equitable, with which it joined in 1927.

Possibly of greatest interest to students of economics, though perhaps not to those intimately connected with the Society, are the passages in the book, which one could wish were longer, linking the growth of building societies, and of the Halifax in particular, with contemporary economic developments, and above all with the introduction of rent restriction during the First World War and the consequent growth of owner-occupancy. It has been this growth which, more than anything else, has brought the building societies out of their virtuous obscurity and converted them into the enormous national institutions that we know to-day.

F. W. PAISH

London School of Economics.

Effects of Taxation. Investments by Individuals. By J. K. BUTTERS, L. E. THOMPSON and L. L. BOLLINGER. (Boston: Harvard Graduate School of Business Administration (London: Bailey Bros. & Swinfen), 1953. Pp. xxxiv + 533. $6.25.)

THIS book is the seventh and last of the studies on the effects of taxation on business enterprise which have been conducted in recent years by the Division of Research at the Harvard Business School. It can be said straight away that it provides a fitting end to a series notable for its attempts to provide empirical evidence in fields previously barren of all but the flimsiest types of speculation. This volume is certainly the largest and most ambitious of the series and possibly the most important.

The *area* of inquiry is somewhat different from the preceding studies, as they were concerned with various direct effects of taxation on business operations, whereas this time the emphasis is on the repercussions of taxation on the ability and willingness of private individuals to supply equity capital. The *data*, relating mainly to 1949, basically come from three sources—the well-known annual surveys made by the Survey Research Center of the University of Michigan on behalf of the Federal Reserve Board, special inquiries made by the Center on behalf of the authors and finally a sample survey of 750 individual investors. Very full details of the procedure and methods adopted for the last of these sources are given in an Appendix. It is sufficient to say here that it seems to pass most of the usual statistical tests satisfactorily, although, of course, the dangers of rationalised answers are unusually great in a field of this sort.

The major *conclusions* are manifold, and only some of the more important can be mentioned here. The first relates to the relative importance of different income and wealth groups, and here the authors found that the top 10% of all spending units (with incomes of about $6,000 and over) were, in the period 1947–50, responsible for some four-fifths of investable funds provided by private individuals and that some 60% of the marketable stock in the hands of individuals belongs to people with a net-worth greater than $250,000. Turning to the effects of taxes on the investment capacity of the upper income classes, it is concluded, perhaps surprisingly, that despite the very large increases in tax rates over the last thirty years or so, the potentialities of these groups as providers of equity capital are still very large. Perhaps the most important conclusions of all are to be found in the analysis of the effects of high taxes on the willingness of these groups to supply equity capital. Here it was found that although security-minded investors have been driven into more conservative channels, the appreciation-minded section has been encouraged to more venturesome outlets than before, largely because of the greater gap which now exists between the top rates of tax on income and the rate on long-term capital gains. Although, on balance, the first group was a little more important than the second, causing perhaps a net diversion of 5% of personal savings out of equity investments :

> "The evidence indicates that the accumulation of investable funds by the upper income classes has been consistently large during post-war years, despite the existing tax structure, and that individuals with large incomes and substantial wealth continue as a group to hold and invest a large proportion of their funds in equity-type investments" (p. 51).

Needless to say, these general points are qualified by various provisos, such as the one that further increases in tax levels, and particularly increases in capital-gains taxes, might seriously modify the conclusions. Nevertheless, they are an approximate summary of some of the major findings. There are many other conclusions of interest and importance on diverse issues such as the effects of capital-gains-tax legislation in altering the timing of security realisation, the effects of gift and estate-tax legislation on the flow of funds in the capital market, etc.

Enough has been said to indicate that this book helps to fill many previous gaps in our knowledge of the contemporary American capital market. There are inevitably blemishes such as an excessive tendency to verbosity and repetition of arguments, but these can be forgiven in view of the importance of the subject matter. And it raises one question of supreme importance to fiscal policy in this country: how much, if at all, would the usual assertions that high tax rates have catastrophically reduced willingness to invest in equities have to be modified in the light of an empirical inquiry of this kind in the United Kingdom? Unfortunately, there seems to be little likelihood of knowing the answer in the foreseeable future.

A. R. PREST

Christ's College,
Cambridge.

Studies in Costing. Edited on behalf of the Association of University Teachers of Accounting by DAVID SOLOMONS. (London: Sweet and Maxwell, Ltd., 1952. Pp. ix + 643. 35*s.*)

PROFESSOR WHITTAKER, who is one of the contributors to this volume, begins the article of his which is reprinted here with the following sentences :

> "Probably the statement can be made, without offence to either economists or cost accountants, that few economic theorists have much knowledge of cost accounting, while many cost accountants know very little of economic theory. As a result, literature on costs from the economic side only too frequently reflects an ignorance on the part of its authors of the practical difficulties of costing, or else their neglect to take the practical side into account at all. On the other hand, the

> writing done by many cost accountants is mechanical and, although by no means useless, has less value than ought to be the case."

Few would deny the justice of these remarks. Now that this volume has been published, however, economists and accountants have been presented with an excellent opportunity of remedying the deficiencies to which Professor Whittaker draws attention. *Studies in Costing* is intended primarily for students of accounting and business administration, but the editor has certainly succeeded in his attempt to produce a book which will be of interest to a much wider audience.

Mr. Solomons has brought together, in this companion volume to Professor Baxter's *Studies in Accounting*, twenty-six articles by a variety of authors. Academic and practising accountants, economists, engineers and administrators are all represented here. The book is divided into five sections : " Historical," " Concepts of Cost and Costing," " Costing as an Instrument of Planning and Pricing," " Costing as an Instrument of Control " and " Costing in the Service of Government." The third and fourth sections are by far the longest, each accounting for one-third of the book.

The historical section with which the book opens contains only two articles, a description by Mrs. de Roover of the books of account of Christopher Plantin, the Antwerp printer and publisher of the sixteenth century, and a long essay by the editor on the historical development of costing. This latter study is the only one in the book which has not previously appeared in print. Mr. Solomons took on himself the considerable research involved in preparing it partly to fill a gap in the history of accounting and partly to bind together the other contributions in the book. He has succeeded admirably in both endeavours, and has given us a lucidly written and most interesting survey in which the origins of present-day methods of cost accounting are clearly traced. Economists will be especially interested in the short section on fixed and variable costs.

Mr. Solomons is not concerned in his essay with criticising current practices or with indicating the directions in which he thinks cost accounting might develop in the future. These are subjects which receive ample attention from other contributors, particularly in the sections on " Concepts of Cost and Costing " and " Costing as an Instrument of Planning and Pricing." These are the sections also which contain those articles in which economists are likely to be particularly interested. Economists, indeed, will find many of these articles very sympathetic reading, since

they will recognise in them attempts to impress on accountants some of the elementary principles of economic theory. Professor Edwards, for example, in his " Rationale of Cost Accounting," an article which created much controversy among accountants in the late 1930s, concentrates his attention on the importance of using variable costs as a guide to price and output policy. In his view, " the cost accountant's main job is to inform the management regarding the minimum [price] at which additional work can be taken." This approach naturally leads him to attack with vigour the practice of arbitrarily allocating overheads between different products and departments, an attack in which he is joined by several other contributors to this volume, including Mr. Solomons himself (in an article on the use of space and equipment), Professor Baxter and Professor Coase. These writers, among others, are very much aware of the dangers involved in fixing prices on the basis of direct costs plus an arbitrarily allocated share of overheads, and of the importance of taking market factors into account when determining price policy. Economists will find little to complain of in these contributions, although they might suspect that many practising cost accountants in this country have yet to be convinced on these matters. It is clear, however, from the three contributions to this volume by the National Association of Cost Accountants, that, if practising cost accountants in America are still to be convinced, it is not for lack of good advice from their professional body. An extract from one of the N.A.C.A. studies may perhaps be quoted in illustration of this. After discussing the need to consider the overall effect of a change which directly affects one segment of a business only, the N.A.C.A. concludes :

> " this is not a question which can be answered by objective accounting techniques of cost allocation. Instead, the contributions which individual segments make to joint costs are determined by what can be obtained in the market and by managerial decision as to the proportions in which it wishes these costs to be recovered. In reality, allocation of joint costs on the commonly used sales dollar basis amounts to a decision to seek recovery of the costs as a uniform amount per dollar of sales. While this is not necessarily wrong, it seems that the decision should be made only after full consideration of all factors in the situation. Among these may be market conditions, competition, sales promotional values, disadvantage of taking business which cannot be discontinued later on, etc. Study of such non-cost factors may lead to assessment of joint costs with results quite different from those resulting from use of the bases commonly employed by accountants."

Mr. Solomons does not allow the marginal approach to go unchallenged, however. By including Professor R. A. Gordon's penetrating "Short Period Price Determination in Theory and Practice," he has made certain that economists will be reminded of the many simplifications involved *in most* writings on price theory. One doubts, however, whether accountants reading this volume will be able to make much of this particular contribution.

There are, of course, other aspects of cost accounting than those mentioned so far. Much space is devoted in this volume to the contribution that cost accounting can make to greater efficiency in industry in such applications as cost control, budgetary planning and profit determination. Several writers make the point that, quite apart from the benefits that may be derived from a modern cost accounting system when it is in operation, its very introduction will necessitate so close a scrutiny of the business that marked effects on efficiency may result. These matters are discussed throughout the volume, and are illustrated in some detail in the fourth section, where Mr. Solomons has included a number of studies which show cost accounting in action, so to speak. The contributions of Sir Charles Renold, Mr. N. G. Lancaster and Mr. C. J. Peters are all of this type.

The final section of the book, "Costing in the Service of Government," contains only four articles. Those on the costing of Government contracts and costing in local government, by Mr. S. J. Pears and Mr. A. H. Marshall respectively, are sober and straightforward. Professor W. H. Hamilton's delightful "Cost as a Standard for Price," which was prompted by the cost-price provisions of the Robinson–Patman Act, is of a very different type. Different again is the final study in the book, a useful contribution to transport economics by Dr. A. M. Groot, the Dutch writer on management subjects.

It has not been possible in this brief review to touch on more than a few of the topics discussed in this volume. No mention has been made, for example, of Professor Joel Dean's valuable consideration of the methods and potentialities of break-even analysis, or of Professor E. L. Grant's stimulating paper on the problem of depreciation. Enough has been said, however, to indicate that *Studies in Costing* contains many good things. Not least among them are the contributions of University teachers of accounting and related subjects. There is no doubt that these teachers have played a considerable part, both in this country and America, in stimulating fresh thinking among their professional colleagues. At least one reader is left with the impression that many practising accountants in this country might to-day be broader in their outlook if the academic study of accounting were more widely spread.

AUBREY SILBERSTON

St. Catharine's College,
Cambridge.

International Shipping Cartels. By DANIEL MARX. (Princeton: Princeton University Press, 1953. Pp. xiv + 323. $6.)

THIS work is an extremely useful study of the Shipping Conferences, their rate practices and of the attempts made to regulate them. The chief sources of the author's information are, for Great Britain, the reports of the Royal Commission on Shipping Rings and of the Imperial Shipping Committee; for America, the reports of the Alexander Committee, 1914, and of the many decisions on cases brought before the governmental regulating bodies set up under the Shipping Act which followed it. The British material is known in this country, but the American is neither so well known nor so easily accessible. The Shipping Act prohibited deferred rebates, discriminating charges, retaliations against shippers and "fighting ships," and Professor Marx's detailed and critical review of the rulings of the Maritime Commission and its predecessors is greatly to be welcomed.

Any who expect an easy answer to the problem of the national regulation of an international trade will find the work a little chastening, for like the Royal Commission and the Alexander Committee, Professor Marx is led to the conclusion that the peculiar characteristics of the trade make self-regulation through conferences necessary to prevent cut-throat competition and to secure stability. Such competition arises from the nature of the industry's fixed and variable costs and from the indeterminateness of the demand for its services which is the consequence of the competition between alternative commodities, alternative sources and alternative methods of carriage. Though ships may be specialised, there is enough competition between them for the world's tonnage to be regarded as a pool, the margins of which flow over into whichever trade is most profitable at the time; the ocean is a free highway open to all persons, and it is relatively easy to transfer vessels from one part of the world to another. And in the inter-war years the surplus of tonnage was enlarged by the political and strategic importance nations attached to shipping and by the support they gave to their fleets.

Regulation by conferences thus seemed the appropriate

remedy, but effective control by conference meant the use of deferred rebates and other weapons open to monopolistic abuse. The Maritime Commission and its predecessors had some success in remedying unreasonable discrimination, in securing the filing of rate agreements and in insisting that membership of conferences must be open to all comers on equal terms. Yet state-owned shipping lines found it necessary to participate in conferences, and the Maritime Commission was led to sanction conditionally both pooling and exclusive patronage agreements. But unilateral regulation could not affect the general level of rates; to secure that end, competition was needed. A study of the membership and practices of liner conferences and of the effect of the competition of non-conference lines and of tramp and charter tonnage—the world market for which is an efficient method of allocating tonnage throughout the world—leads Professor Marx to his second conclusion, that competition is required to prevent rates from being maintained at too high a level. The Royal Commission's proposal to meet the danger by creating a situation of bilateral monopoly through the formation of shippers' associations is rejected on the ground that, though there has been some success in Australia, the diversity and multiplicity of interests prevent the formation of effective buyer's organisations. The limitations of regulation by an international body were shown in a modest way by the work of the Imperial Shipping Committee. In the main, its sphere would be the supervision of undue preferences and discriminations; the control of the level of rates and profits, of the entry of new lines or the discontinuance of a service would be beyond it. It is for its function in supporting the work of national regulation that Professor Marx makes the establishment of such an organisation his third recommendation.

It is no criticism of Professor Marx's admirable study of the control of monopolistic practices in this industry to say that our knowledge requires to be supplemented by some detailed studies of rates in regulated and unregulated trades and their effect on the distribution of tonnage, and of the effect of the combination of conference-maintained rates with the open membership insisted upon by the Maritime Commission. For on certain assumptions about general conditions and the elasticity of demand, that policy might accentuate the problem of excess capacity. Rate studies in this field present considerable difficulties, and we should be fortunate if Professor Marx felt able to undertake them.

Southampton University. P. FORD

The Control of Raw Materials. By J. HURSTFIELD. History of the Second World War, United Kingdom Civil Series, edited by W. K. HANCOCK. (London: H.M.S.O. and Longmans, 1953. Pp. v + 530. 35*s*.)

THE writer of an "official history" of recent events has to contend with many difficulties, difficulties frequently opposite to those encountered by his fellow-historians. He has mountains of material in which every kind of oddity distracts him from his main pursuits. He has at once to spare the feelings of living people and yet to point any lessons which might be useful in the near future. He has to draw upon the mémories—as treacherous as all human memories are—of those who took part in the events, well knowing that some of these people are strongly opposed to the compilation of "war histories." Mr. Hurstfield is to be commended on the success with which he has lived through difficulties such as these; his book is a notable contribution to the civil history of the war.

Though frequently referring to the diversity of action that had to be taken in relation to the scores of materials for which the Raw Materials Department was responsible, Mr. Hurstfield has wisely not attempted a seriatim survey of the materials. Instead he has attended almost exclusively to the problems common to many or all of them. Shipping programmes and relations with the Americans thus bulk largely in the book, more largely than they often did in the work of the Department, while other administrative problems—those, for example, arising from Government trading—receive proportionately less attention. For the ordinary reader and for subsequent historians of the War this plan is undoubtedly right, though it severely limits the value of the volume to departmental readers seeking practical guidance.

Mr. Hurstfield has caught the atmosphere of the Department—its internal politics, its relations with the Service Departments and War Transport, above all its struggles towards co-operation with the Americans—extraordinarily well. The sympathy and understanding which he demonstrates in handling these topics give weight to his discussion of the problems of departmental organisation.

Broadly speaking, Mr. Hurstfield confirms the common view that the Raw Materials Department did not fit tightly into the central organisation of war production, in part because the Department itself lacked internal cohesion. He explains this partly by the decision—a right decision— to use as "Controllers"

men drawn from the trades themselves; the effect of this was aggravated by the failure to post senior Civil Servants to the Controls, a failure due to lack of time and of men. The dispersion of power inside the Department was, of course, one source of unsatisfactory relations with other parts of the war machine, but there was also the fact that the Ministry of which it formed a part, while already suffering the disadvantage of novelty, was not made a common supply department for all three Services, but only for the Army. On all this Mr. Hurstfield writes with understanding and fairness. I myself would have given a little more emphasis to three other points: the chronic understaffing of the Department in the critical first two years, its geographical dispersion and the softness of conscientious Controllers towards their former (and subsequent) competitors. These three factors conspired to reinforce each other, and to hinder the ruthless concentration of effort that became appropriate in the course of 1940. Probably most trouble was due to geographical dispersion—an arrangement largely due to the fears of massive air attack at the beginning. Midway through the war an attempt was made to right the position by the establishment of the Ministry of Production, but (as I think Mr. Hurstfield agrees) this was not altogether successful. Habits were by then too deeply set, and the continuing geographical dispersion promoted duplication rather than co-ordination of control.

In war administration, as elsewhere, neither the problems nor their solutions can be entirely abstracted from personalities, and Mr. Hurstfield was precluded from entering into these. That he has nevertheless produced a history which is extraordinarily life-like is a matter for warm congratulation.

R. S. SAYERS

London School of Economics.

A Scientific Survey of Merseyside. Edited by WILFRED SMITH. (Liverpool: Liverpool University Press, 1953. Pp. xv + 299. 21*s*.)

THIS volume was prepared for the meeting of the British Association which was held in Liverpool last September. It contains thirty contributions, each dealing with an aspect of Merseyside; of the thirty contributions, five are the work of the editor, who is also part author of two others. The volume, which is generously furnished with plates, maps and diagrams, is beautifully produced and a credit to all concerned with its preparation.

The planning of such a work poses a problem; the contributors can address the specialists in their own subject who are attending the meeting, or they can write for a wider public. It is upon those charged with the responsibility for such subjects as geology, botany and zoology that the problem presses most obviously; if they write for their visiting colleagues, the ordinary reader will be out of his depth. In general, the authors have chosen the first course, and this is probably wise; more popular treatments would demand greater space than could be allowed, and in any case are hardly appropriate for a meeting of a scientific association.

The rise of Liverpool and of the adjoining boroughs which form Merseyside is an extraordinary story full of interest for students of economic history, sociology and population movements. In 1207 King John created the borough of Liverpool, an action which was connected with the attempts to subdue Ireland. The borough was of little importance for five centuries; at the Restoration its population may not have exceeded a thousand. Before the end of the seventeenth century it entered upon a period of immensely rapid growth drawing in, as is well known, immigrants from Wales, Scotland and Ireland. Thus arose a great city having little affinity to Lancashire; at one time it bore some resemblance to certain American cities where mass immigration composed of various nationalities made possible the rise of political machines controlled by bosses. The rawness of the conditions of life were, however, a challenge, and Liverpool has every reason to remember with pride Dr. Currie, a pioneer in public health reform, William Roscoe, whose pictures are the greatest possession of the Walker Art Gallery, and a long list of philanthropists.

To readers of this JOURNAL, the section on the growth of Liverpool's trade written by Professor Hyde will be of special interest. The story is of the development of a tiny port, cut off from its hinterland, into a great centre having connections with all countries of the world. In Professor Hyde's opinion the importance of the slave trade in the growth of the city's trade has probably been exaggerated; Liverpool ships were carrying slaves as early as 1700, but it was not until the second half of the eighteenth century that this trade was extensive. Trade in salt was important early, and so too was trade in coal. The success story continues for two centuries, chequered by set-backs consequent upon widening sensibility to economic fluctuations in the world at large. The First World War brought difficulties

with which the port is still engaged; to-day Liverpool is second to London, handling, however, nearly 30% of the United Kingdom's trade with all countries. In recent years there have been added to the long-established port industries, situated along the water-front, new industries which are mostly located inland; upon the success of these new ventures in a new area the future prosperity of the city will largely depend.

The volume contains an account of the rise of the University of Liverpool by the Vice-Chancellor; the city owes much to the University, and its debt is now increased, since all but two of the contributors to this excellent volume are members of the University's staff.

A. M. CARR-SAUNDERS

London School of Economics.

A Short History of the International Economy 1850–1950. By WILLIAM ASHWORTH. (London: Longmans, 1952. Pp. 256. 18*s*.)

THE history of the international economy is taken by Mr. Ashworth to involve in the first place the study of economic developments common to different parts of the world and in the second place the study of international economic relationships. The former takes up the greater part of his space, so that his book is really an outline economic history of the world during the last hundred years, written from a particular angle. This angle in itself involves something of a thesis: that similarities have outweighed divergences in the economic experience of different countries. This thesis is present, but it is not obtrusive. It is perhaps reflected in the comparatively slight treatment accorded to the U.S.S.R. Consecutive treatment of the course of events in different countries is not, however, part of the author's intention, and the arrangement is by topics: the growth of production, business organisation, labour, economic activities of government and international economic relations. Much of what the author has to say on these subjects is excellent and should serve as an admirable introduction for students. The sections on agriculture and on government may be particularly recommended. A useful feature is the attention given to areas such as Indonesia and Latin America, which often receive very scanty discussion in outline surveys. The least successful chapters in the book are those that deal with international economic relations since 1914. Here too much space is given to institutional and political problems and not enough to underlying economic trends.

In his preface Mr. Ashworth allows himself some controversial remarks on the role of theory in the writing of economic history. His particular aversion is "the attempt to confine the complexities of a hundred years of history within the straitjacket of a fairly simple economic theory." Schumpeter's name is not mentioned, but from the context his line of thought would seem to be the leading example of the attitude objected to. Mr. Ashworth's suspicions of theory extend beyond hostility to historicism; they involve also more general doubts about the value of any "systematic body of theory." In his text, however, he shows that he is well aware of the usefulness of theoretical concepts and does not push his empiricism to extremes. At the same time his attitude does have certain dangers which are not perhaps entirely avoided. In the absence of any consistent body of doctrine, it is liable to appear that no historical event is especially surprising; some explanation can always be found easily enough for anything. It is possible that the student who is introduced to the subject by Mr. Ashworth's book may for this reason be misled into supposing that the range of difficult and unanswered questions in the field is narrower than it in fact is.

R. C. O. MATTHEWS

St. John's College,
Cambridge.

Round about Industrial Britain 1830–1860. By C. R. FAY. (University of Toronto Press (London: Geoffrey Cumberlege), 1952. Pp. ix + 227. 45*s*.)

IT is an interesting idea to attempt to portray the industrial life of Britain in the mid-nineteenth century by means of a series of sketches of the activities of a representative selection of towns and regions. A work of this kind could be a useful corrective to the established story presented by the more elementary accounts of industrial history which, for the hundred years preceding 1860, do not stress much, apart from the textiles of northern England and a few changes in the technique and location of the iron industry. Here we have not only the familiar Manchester and Bradford but the much less familiar Merthyr and Birkenhead and Dundee; and the name of Dr. Fay arouses expectations of an individual and entertaining survey.

But this time Dr. Fay has found a new eccentricity to indulge—one that greatly restricts his individuality. Instead of writing his own book he has leased out his subjects to a team of sub-

stantial ghost-writers and then pulled their various contribution into (or sometimes, one suspects, out of) shape to suit himself. The result is a somewhat odd miscellany. It would appear from the preface that an emphasis on technique was meant to run right through the book as a unifying theme, but this in fact has not happened. Some chapters and sections—that on Bradford, for example—are given over mainly to changes in industrial techniques and their more immediate effects. Others take up a variety of quite different local topics, some very hackneyed, some reasonably fresh, without having space to carry any of them very far. Three-quarters of the account of Merthyr Tydfil is given up not to technique, but to chartism, the truck system and the lack of sanitation. Birmingham is allotted only half a dozen pages, which are devoted mostly to its politics and local government. The section on Manchester is concerned only with the Cotton Famine. The account of Dundee and St. Andrews gives twice as much space to golf at the latter as to jute manufacture at the former. An early chapter on "The Stream of Industrial Invention" might perhaps have provided a useful general background to a description of the regional variations of industry. But it fails to serve this purpose because it is little more than a catalogue of capriciously selected inventions, which explains neither how they worked nor what reason there was for making them, and which uses technical terms that are meaningless to the ordinary reader. What knowledge can anyone unfamiliar with paper-making obtain from the bald, unexplained sentence: "In 1821 Marshall added the dandy roll to the Fourdrinier"? Who was Marshall? What is a dandy roll? Why did the Fourdrinier need one? We are not told.

The lack of unity which shows itself in the choice of subject matter extends also to the way in which it is presented. Some chapters have the form of a narrative or analysis on orthodox lines. Others consist almost entirely of passages torn from contemporary works and thrust at the reader without comment or with the addition of some barely relevant remark. As a history of the technical and industrial achievement of a particular country in a particular period the book is neither complete nor representative. Dr. Fay's lively and well-stored mind ensures that some of the individual items are unfamiliar, instructive and entertaining.

London School of Economics. W. ASHWORTH

The Influence of England on the French Agronomes, 1750–1789 By ANDRÉ J. BOURDE. Cambridge Studies in Economic History. (Cambridge University Press, 1953. Pp. xi + 250. 31*s.* 6*d.*)

THIS is a most scholarly account of a movement about which very little has hitherto been known in this country, for the majority of English writers on French agrarian history have confined themselves to quoting certain disparaging comments by Arthur Young and other contemporary visitors. Yet the cultivational practices followed by Tull and "Milord Townshend," as well as the livestock innovations associated with the names of lesser Improvers, were in fact being widely advertised in France a full generation before the Revolution. Dr. Bourde accords much of the credit for this literary advocacy to Duhamel's five-volume *Traité de la Culture des Terres, suivant les Principes de M. Tull, Anglais* (1750–56) and, later on, to the writings of de Freville, *e.g.*, his *Receuil d'ouvrages sur l'Economie Politique et Rurale, traduit de L'Anglais*, of 1780, which included Young's "Political Arithmetic." Many other "book farmers" followed in their steps with similar propagandist works, their arguments and appeals ranging from the gustatory to the political, the former represented by a warm commendation of "*le goût exquis*" of the English "*turnep*" as compared with that of the provincial French "*rabioule,*" the latter by an exhortation to the effect that "*ce que le roi d'Angleterre propose a ses sujets, nous la proposons à nos concitoyens.*" It is noteworthy that, in this field alone, Dr. Bourde's bibliography extends to no less than nineteen closely printed pages. But numerous other methods of approach are cited. English farm managers were imported by the larger landowners; there was at one time a model English farm at the Trianon; smugglers introduced "*une assez grande quantité de bêtes à laine*"; representative agronomes crossed the Channel in considerable numbers, the majority of whom visited Norfolk; comparative statistics and diagrammatic representations of typical French and English farms were officially published; it was even claimed that Arthur Young intended to acquire a French holding, as Stuart and other exiles had already done in Normandy and elsewhere. Despite these diverse forms of encouragement, the new practices, whether relating to either form of husbandry or to land reclamation, were taken up even more slowly than had been the case in England, where, it will be remembered, "a bare half mile a year" was the reputed rate of

their expansion outside the walls of Holkham. "It [France] never became," in our author's words, "as the agronomes dreamt it might, another Norfolk or Suffolk." One of the main reasons for this was the widely different attitudes towards any general enclosure adopted by French and British politicians and farming interests. Patullo might categorically state "*la pratique d'enclos les terres en Angleterre est maintenant presque generale. On a éprouvé que ce seul avantage ne manque guère de doubler la valeur du fond.*" The same was demonstrably true in the case of common-land. But the nobility and the larger landlords were generally unwilling to follow in the steps of their English opposite numbers, whereby, says Dr. Bourde, they condemned themselves to the political Revolution. It is certainly remarkable that, although all the methods of the English pioneers were widely accepted in theory and demonstrated to be advantageous in practice, they were only regularly pursued here and there, and even then with the traditional restraint of a dominantly peasant people. Thus it came about that French agriculture was confined to its notoriously slow rate of advancement in the nineteenth century and after.

The author is to be warmly congratulated on producing such an authoritative and well-documented work, the main thesis of which—the great disparity between the *interest* displayed across the channel in English methods of farming and the virtual *failure* to implement them—will surely come as something of a revelation to the majority of his readers, whether English or French. He has not only added greatly to our knowledge of a little-explored field of Economic History, but has also said what must surely be the last word on a subject that, most appropriately, will always be associated, here and in France, with his own name.

J. A. VENN

Queens' College,
Cambridge.

Le Problème de la Théorie Marxiste de la Valeur. By R. GUIHÉNEUF. (Paris: Armand Colin, 1952. Pp. 194.)
La Conception Marxiste du Capital. By J. BÉNARD. (Paris: Société d'Enseignement Supérieur, 1952. Pp. 365.)

BOTH these works are evidence of the lively interest in, and sympathy for, Marxism in some French intellectual circles, but otherwise differ very considerably. M. Guihéneuf proposes to show that Marx's theory of value is an essential part of his

general economic theory and cannot be removed from it without destroying the coherence of the latter. Unfortunately he admits to having begun his study by attempting "a phenomenological description of value inspired by Husserl's method"; in fact, as a philosopher of the German school rather than as an economist. The general tenor and idiom of his argument reflect these tastes. Hence there are few contacts between him and the normal train of thought of economists in this country. Marx himself has explained his law of value in quite unmetaphysical language in a passage which deserves to be better known (*Letters to Kugelmann*, 11.7.1868):

> "Every child knows that the mass of products corresponding to the different needs require different and quantitatively determined masses of the total labour of society. . . . The form in which this proportional division of labour operates, in a state of society where the interconnexion of social labour is manifested in the *private exchange* of the individual products of labour, is precisely the *exchange value* of these products."

M. Guihéneuf neither mentions this passage, nor pursues the line of argument it suggests. His book falls into three parts: the first two expound Marx's method and theory of value, the third discusses various criticisms of it, in particular those of Pareto, Boehm-Bawerk, Tugan-Baranowsky, Sombart, the philosopher Simmel and his disciples, the syndicalist Arturo Labriola, Sorel, Croce and the "positivists" (among whom the author numbers Mrs. Robinson). Attempts to reconcile Marxism and marginalism are also discussed. The author's general view is that these critics do not understand Marx's dialectical method. Several of his observations may be read with interest.

M. Bénard begins his book not with a summary of the dialectic, but with a chapter analysing the standard balance sheet of French business firms ("*La notion de capital dans la pratique des affaires*") and never lets his eye stray very far from the economic realities with which his former membership of the *Conseil Économique* has made him familiar. His general argument is that Marxism is far more realistic that non-Marxist academic theory (at any rate where the latter goes beyond empiricism); the practice of business-men and national-income specialists is much more in accordance with Marx than with his critics. Conversely, Marx's concepts are important not only for reasons of exegesis or propaganda, or because without them his theoretical structure would not cohere, but also because they express real economic facts and

relationships. This approach will win the sympathy of Anglo-Saxon readers, even when his conclusions do not persuade them. The treatment is extremely systematic and clear. Large parts of the book can serve as a good introduction to Marxist economic theory. It is divided into ten chapters of three or four sections each, and 115 consecutively numbered paragraphs, so that a glance at the table of contents sets out the general structure of the argument economically and lucidly. There is also a useful subject-index.

Tidiness and conciseness are not without drawbacks. M. Bénard's taste for them sometimes leads him to present as clear and settled what is obscure or in dispute—for instance the interpretation of Marx's observations on the tendency of the rate of profit to fall, on periodic crises, on the connection between the law of value and prices, and some historical problems of capitalist accumulation. Though all Marxists agree—as against the Boehm-Bawerkian critics—that the " transformation problem " of the relation between values and prices is of secondary importance to Marx's analysis, there is disagreement among them on its exact solution, and M. Bénard's will not command universal assent. One must agree with Professor Henri Denis (the leading Marxist among French academic economists), who supplies a preface : " It would be a pity if the hasty reader were to take away the impression that all that could be said had been said, or if the informed reader were allowed to think that certain analytical difficulties had been sidestepped." It would indeed be a pity, for once the limits of its scope are recognised, M. Bénard's book is a very useful one.

E. J. HOBSBAWM

King's College,
Cambridge.

Soviet National Income and Product in 1937. By A. BERGSON. (New York : Columbia University Press (London : Geoffrey Cumberlege), 1953. Pp. vii + 156. 30*s.*)

Soviet Economic Growth. Edited by A. BERGSON. (Evanston, Illinois : Row, Peterson, 1953. Pp. v + 376. 38*s.* 6*d.*)

PROFESSOR BERGSON is the first to attempt a systematic application of Western " national-income " techniques to the Soviet economy, using current rouble prices. His work has raised substantially the general level of argument on Soviet statistics.

One may disagree with certain aspects of the study under review, but there can be no doubt that it is of the very highest value to anyone venturing into this complex subject. The study is a revised version of a paper which was published in the *Quarterly Journal of Economics* in 1950, and it will be followed by others for more recent years. The author writes with enviable clarity and conciseness, and compresses a truly remarkable amount of material into so few pages. Thus he constructs, and explains in detail, tables breaking down the Soviet national income by economic sector, by use, by industrial origin and much else besides, all this both in current roubles and in terms of " adjusted factor cost standard." He includes a stimulating discussion on the applicability of the latter to planned economies (though there is much more to be said on this subject), and a most valuable little essay on the reliability of Soviet statistics. On this latter point, as well as on the question of the standard of living in 1937 compared with 1928, he takes the opportunity of defending himself against some criticisms directed by Dr. Jasny at the earlier version of his study. Dr. Jasny invited counter-attack by adopting an unnecessarily combative manner, but it is noteworthy that the differences under discussion are not nearly as large as they seem; in the assessment of Soviet statistical distortions, for instance, they are largely verbal in character. On the question of the relative standard of living, both agree that urban workers were worse off in 1937 than in 1928 (the evidence for this is quite overwhelming); both agree that the " statistical " income per head in unchanged prices looks higher in 1937 than in 1928, and that the process of urbanisation was a cause of this; both agree that this might not be inconsistent with a fall in the real incomes per head of *both* workers *and* peasants taken separately; they differ in the evaluation of peasant income in kind in 1937 (which Jasny puts much lower than Bergson), and on the *extent* to which urbanisation affects income per head.

This leads to one of the few weaknesses of the study. The treatment of agricultural incomes is rendered difficult by the existence of a multiple-price system and the absence of an identifiable cost of production; Soviet output figures were at times expressed in terms of 1926/7 prices, or in the low compulsory-procurement prices, or in " average prices of realisation " (an average of all selling prices, including those in the free market, which may be ten or more times the compulsory-procurement prices). Obviously, the weight of different products in the total must vary accordingly to the price-base chosen : thus a much

smaller proportion of grain than vegetables is sold at free-market prices, and consequently one would expect the weight of grain to be smaller at " average " than at compulsory or 1926/7 prices. For the same reason, one cannot use a percentage figure of the share of peasant plots in gross output without specifying in what prices the output is valued. Similarly, one cannot expect the ratio of gross to net product in agriculture to be the same in one set of prices as in another, save by pure coincidence. Unfortunately, Professor Bergson by-passes the whole problem. For instance, the *same* percentage of production expenses is applied to gross output valued at 1926/7 prices (p. 83) and at " average " prices (p. 106). The same defect may be observed in the calculation of the proportion of marketings in total output. It is by this route that the author arrives at his valuation of peasant income in kind, and so this valuation is open to serious doubt.

Professor Bergson's ingenious attempt to apply the " adjusted factor cost standard " to the Soviet economy is a fascinating exercise. The application of concepts familiar to Western economists to the very different circumstances of Russia often compels one to reconsider the real meaning of these familiar concepts, and this is one reason why this study should be read outside the narrow circle of " Soviet specialists." Certain steps in the process of " adjustment " may perhaps be criticised. For instance, peasants gain as well as lose from the existence of turnover tax, because part of their income (from market sales) depends on high food prices; and no " adjustment " seems to have been made for markedly unequal profits in producers' and consumer goods industries, though this has some bearing on the " real " shares of consumption and investment. There is, unfortunately, little discussion of the significance of the results of the " adjustment," or any serious attempt at a comparison with Soviet factor costs of earlier years or with American factor costs, although this would raise problems which are both interesting and relevant. In general, the method used in this study affords only occasional glimpses of the relationship between the calculated figures and the changing Soviet reality; no doubt this is partly due to the fact that this is a study of a single year, and the forthcoming volumes will doubtless include comparisons over time.

Space precludes detailed discussion of some doubtful points of statistical definition; for instance, the exclusion of income of co-operative artisans from the " wages fund " is certainly an error, as is (though less certainly) the omission from this item of military subsistence. However, even if all the criticisms and queries were fully justified, they would detract but little from the value of this admirable little book.

The symposium on " Soviet Economic Growth " consists of the proceedings of a conference between American experts on Russia, held in May 1952, which had as its purpose an assessment of potential Soviet economic development down to 1970. Attention naturally centred on such vital matters as rates of growth, resources, productivity and labour force. The contributions were of varying quality. Among the best was Norman Kaplan's survey of investment, in which he concluded (as did Professor Bergson) that the rate of net investment in the U.S.S.R. has not been so very different from that of the United States (war and depression years apart); but the rate of increase of gross industrial output, with all allowances made for exaggerations, has been much more rapid in the Soviet Union than even in the post-Civil War boom period in the United States. The difference has clearly been due in part to the very different *direction* of investment; but, as was pointed out in discussion, a given sum invested in coal and steel may produce less in value terms than the same sum invested in consumer-goods production, and a number of highly intriguing question-marks remain. (Might not part of the explanation lie in the difference between the *cost* of investment goods and consumer goods, relatively to each other, in the U.S.S.R. and U.S.A.? The possibility is at least worth examining.)

There is a good deal in the volume about the various methods of measuring rates of growth, and the degree to which one or other may be considered more " true." This is particularly important in the present context, because both rates of growth and the share of investment in the national product vary enormously according to the price weights chosen. A most valuable contribution to the question is Professor Hodgman's index of industrial production weighted by wage-payments in 1934. However, the nature of the problem precludes a definitive answer.

It is a pity that the various contributions were not linked together by some more general survey of the economy, including in this a consideration of the political questions, which may, in the last analysis, prove decisive in determining the shape of things to come. Thus only Professor Gerschenkron discusses seriously the fact that the Soviet Government may decide to divert more resources into consumers'-goods production, though he argues against this on the grounds that a dictatorship requires a high rate of non-consumption to maintain among the population a sense of

urgency, on which its power in part depends. In general, despite its declared purpose, the symposium is more valuable as a survey of the past than as a guide to the future. But valuable it certainly is, not least as some reflection of the serious research on Soviet economic affairs undertaken in America.

A. NOVE

Glasgow.

Report on Cuba. Findings and recommendations of an economic and technical mission organised by the INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT in collaboration with the Government of Cuba in 1950. (Baltimore: Johns Hopkins University Press (London: Geoffrey Cumberlege), 1951. Pp. xxiv + 1052. 60*s.*)

Costa Rica—a Study in Economic Development. By a survey group of the TWENTIETH CENTURY FUND. (New York: The Twentieth Century Fund (London: Allen & Unwin), 1952. Pp. v + 374. 24*s.*)

The Economic Development of Guatemala. Report of a mission sponsored by the INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT in collaboration with the Government of Guatemala. (Washington, D.C.: The International Bank, 1951. Pp. xxviii + 305. $5.)

Public Finance and Economic Development in Guatemala. By J. H. ADLER, E. R. SCHLESINGER and E. C. OLSON. (Stanford: Stanford University Press (London: Geoffrey Cumberlege), 1952. Pp. v + 282. 40*s.*)

Public Finance in a Developing Country: El Salvador—a Case Study. By H. C. WALLICH and J. H. ADLER. (Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1951. Pp. xxviii + 346. 40*s.*)

IF the editors of this JOURNAL could have persuaded the Presidents of the four republics or even a leading citizen in each, to write candid non-political reviews of these books, they would have been most interesting to British and American readers, and merited quite a lot of space. The attention which Central America is at present arousing in U.S. circles must be a source of much gratification as well as anticipation to the countries concerned, even if also of some embarrassment, but one wonders what their reactions really are, and what various sorts of smiles illuminate the faces of their Presidents as they read these studies. Failing such reviewers, the editors have rightly restricted the length of this review within such limits as must confine it to a series of notes for the guidance of potential readers not specially interested in the particular countries though interested in the general problems of so-called under-developed areas.

The seventeen members of the International Bank's mission to Cuba have made a comprehensive and detailed report of the island's whole political economy, and provided the government and people with a blue-print (notwithstanding a disclaimer) for the construction of the Cuba of to-morrow. The result is an enormous book, of which I suspect not many people in Great Britain will read more than a few chapters, and of which few Cubans will read many more. Nevertheless, this report, despite its rather grandiose scale and appearance, must be judged very well worth while. It is not only extraordinarily thorough, but sufficiently outspoken where plain-speaking is necessary, and yet it breathes throughout such a spirit of undaunted optimism and of urgency as must surely hearten and stimulate the patriotic Cuban. The mission has clearly realised the tremendous problems of changing human nature which are involved, and yet there is no trace of defeatism in their report, as frankly there might well have been.

Book I in thirty-two pages summarises the mission's diagnosis and its proposals for remedial action of various kinds, essentially directed, of course, to the diversification of Cuba's economy so far as "to reduce her dependence on sugar, not by producing less sugar, but by developing additional enterprises." Book II, "The Cuban Economy," is a general survey. "The 'master' circle of all the vicious circles that need to be attacked" is that "a stagnant and unstable economy with a high level of insecurity creates resistance to improvements in productive efficiency. And yet improvements in productive efficiency are the key to creating a more progressive, more stable economy." Surveying Cuba's resources for development, the conclusion is that the chief deficiencies are not in respect of natural resources, labour or capital, but in what are termed the "organising factors"—management, business initiative, technology, and the institutional and government framework. Succeeding books of the report deal with Production (agriculture, industry, mineral resources), Aids to Production (railways and road transportation, power, communications, etc.), Human Problems (labour–management relations, education, and health), Administration (government and municipal), Finance, International Economic Relations and finally Book X, in some 240 pages, deals with the Technical Problems and Possibilities in all the relevant agricultural, manufacturing and mineral industries.

The reader who is not interested in Cuba except as an exemplar of general economic problems should not stop after reading Books I and II, for he will find much to interest him and much food for thought, in Chapters 5, 6 and 7 of Book III, especially perhaps Chapter 6 with its account of the fantastic labour laws and their more fantastic administration, and the almost equally fantastic government control of industries (" Cuba's sugar industry is great not because of legislation but in spite of it "). The same is true of Chapters 16 and 17 of Book V, which further consider the problem of labour–management relations. The educationalist will be enlightened, if also depressed, by the plain account of public education in Chapter 18. Book VI, Chapter 20, on Government Administration is an essential part of the picture, but here the mission doubtless felt that brevity was diplomatic : for example, bribery and corruption are barely mentioned, and yet if it has really disappeared, few things could be more noteworthy. In Book VII on Finance, Chapters 24 and 25 are of general interest, especially the latter on " Why Cubans invest as they do." (In good times as much as 12% of gross national income is saved, but little gets invested in Cuba except in the building of large houses.) Altogether, there is much of general interest in this report, but notwithstanding all the mission's optimism, one suspects that a good many readers will echo the quotation of a foreign business-man " Any foreigner who wants to invest in something new in Cuba as things are to-day, must be perfectly crazy," and add the comment that it might not be true only for foreigners.

The Twentieth Century Fund study of Costa Rica " was undertaken not merely to discover the needs of a single country, but to attempt to show in a concrete case how the Point Four program could be applied." This is the focus of this study, and the reasons for the selection of Costa Rica are given at the end of the first chapter. The survey which follows builds up an adequate picture of the economy of the country in terms of its industrial, trade and financial activities, but too little attention is given to the characteristics and behaviour of its citizens (though there is a competent survey of Health and Welfare), and especially to their government. The study group's six weeks in Costa Rica may have been too short a time to enable them to absorb and reproduce much " atmosphere." Perhaps for the same reason, many of their conclusions and recommendations seem somewhat superficial and theoretical : it is easy to suggest that improvements of this or that kind " should " be carried out. The study group, however, might well retort that the utmost they tried to do, was to set out the main

problems, and point the way for further activities to be conducted under the Point Four programme with the much greater resources of the U.S. Government. Judged by this criterion, the job which the group has done seems well worth while and adequately executed. In particular, the general reader will be interested in the part played by the United Fruit Company, which accounts for a large part of the nation's income, though he will not discover what Costa Ricans think about the situation.

The *Economic Development of Guatemala* is the report of a mission of six persons sent by the International Bank in mid-1950 at the request of the Guatemalan Government. The report strikes one as extremely business-like and concise, and its seventy-seven recommendations not only suggest what should be done and how it might be, but also what should not be done, and even what should be undone. In short, it gives one the impression that it stands a good chance of interesting the politicians and leading men of Guatemala, and that it should be of real practical use to them. For the general reader, however, the very merits of this book as a report create certain disadvantages and deficiencies : the reader who is not well acquainted with Guatemala will crave for a fuller background of the country's economy and of its inhabitants (though a reasonable sketch and some useful maps are given), and particularly for more information about its political life and the workings of government. Perhaps even as a report the book seems rather thin on matters concerning labour and industrial legislation. But the general reader will find the basic conclusion very interesting. Whereas for most under-developed countries to-day the call is for greater diversification of production and particularly of exports, here the whole programme is based on the expansion of the one industry which already accounts for over 70% of total exports, because in brief the export tax on coffee alone can provide the finance for general development. In the present circumstances of Guatemala the mission's conclusion is probably sound, but the success of their policy may well require a large slice of good luck.

Public Finance and Economic Development in Guatemala supplements the International Bank's report just surveyed, but in content and methodology it can best be considered along with the final book on the list, on public finance in El Salvador. This indeed was published earlier and led to the Banco de Guatemala inviting a similar study, though as the authors rightly claim, theirs was no mere repeat performance, and the pattern of the El Salvador study had to be substantially modified. Both these studies are very

thorough, and clearly everything that can be squeezed out of the available statistics and relevant data by high-powered modern technique has been. But whether all the labours involved were an economic expenditure, and whether all the technique could really be legitimately applied, would seem to depend on the accuracy of the basic statistics, about which there is too little critical discussion. The El Salvador study is less open to this charge, especially if one studies the appendices, but for Guatemala the Banco supplied the raw material and the authors seem to have just accepted it and worked it up. While admiring the virtuosity displayed in these studies, one wonders . . . many things.

J. W. F. ROWE

Pembroke College,
Cambridge.

White Collar: The American Middle Classes. By C. WRIGHT MILLS. (New York: Oxford University Press (London: Geoffrey Cumberlege), 1951. Pp. xx + 378. 30*s*.)

THE predicament of the white-collar worker provides important clues to modern America. The revolution in management, servicing, selling and distribution which has followed business concentration and mass production has brought into the American occupational structure in the last half century a vast new pyramid of workers ranging from an *élite* of powerful corporation manipulators, of copy-writers, public relations counsel and publicists, of specialist lawyers, doctors, scientists and engineers, to a mass base of clerks, typists, nurses, college instructors and school teachers. This "new middle class" of salaried workers has largely absorbed into itself and eclipsed the "old middle class" of property-owning farmers, small business-men and shopkeepers and free professionals which was the basis of late-nineteenth-century America, and the *ethos* of which persists into a largely irrelevant world. It is the subject of Professor Mills's important study.

The author forcefully lays bare the pressures on the various individuals making up this great occupational complex: the effect of the bureaucratic corporation on the status, outlook and, ultimately, personality of the executive; the pressures of the law factory, hospital-centred medicine, business-dominated universities; the pressures on intellectuals forced to earn bread and butter in the mass-communications industry; above all, the conditioning of the "saleslady," the typist and stenographer, the telephone

or I.B.M. machine operator. The picture he so expertly draws of remote, irresponsible power, of mechanised and specialised office routine, the dilution of skills, the barriers to advancement, the "alienation" of personality, the reduction of values to salesmanship, the anodyne propaganda of the mass media, is a frightening one. Within strict limits there is no reason to doubt its veracity; but it is important to enter certain caveats for the English reader.

The effort to make the study systematic has tended inevitably toward abstraction. We are inevitably dealing with "types"; but the study is too short and is based on too limited field work to "come alive" in human terms in the way Lloyd Warner's or Reisman's work does. It is not often clear whether personal statements—there are no footnotes—are the result of specific interviews or merely generalised "model" clichés. The white-collar worker is treated solely in relation to the job; and such concepts as "class," "status," "prestige," are used in the characteristically specialised sense of Marx and Weber. By treating "class" primarily as a function of income he does not appear to give enough weight to other factors, and conveys to the English reader the misleading impression that there are well-defined classes in the English sense. We also tend to lose sight of the fact that we are dealing mainly with metropolitan America, almost of New York. These distortions are most revealed in the final section, which discusses the possibilities of the white-collar worker obtaining easement by acquiring political power. Here the author's massive construct of a white-collar class leads him to reject the possibility of an adjustment through the existing political structure of the United States. He condemns the party system on the ground that it must "appeal to diverse interests and variegated strata and therefore may articulate only generalised widely accepted issues" instead of giving vent to a particularised insurgency. Yet the fact that he does not believe the white-collar workers are sufficiently self-conscious to make an effective political interest could be taken as indication that they form no distinct "class" grouping in society.

One is left with the impression that theory has played too unsupported a role and that the impact of the study might have been greater had the author scrapped his sociological apparatus and instead had cast the work as a "straight" essay, allowing the disciplined training of his craft to operate intrinsically in the selection of material. The author's display of objectivity, also, cannot conceal tell-tale personal biases, for example against the recent war, against big business and against the powers that be in

general, which sometimes make him appear more partisan than scientist. Even his attitude towards the victimised white-collar worker is not detached, cynical rather than compassionate. It seems a pity that Professor Mills did not establish a more personal relation with the reader than is possible within the conventions of social science, especially since, to judge from the publisher's sensational blurb, the book is intended for the general reader as part of what the author himself calls "the cult" of social science.

F. THISTLETHWAITE

St. John's College,
Cambridge.

NOTES AND MEMORANDA

COSTS AND OUTPUT

IN a paper read at the National Coal Board's Summer School at Oxford and commented on in *The Economist* of September 26, 1953, Mr. Schumacher, the Board's Economic Adviser, said that last year about half the country's deep-mined coal was being produced at an operating profit and just under half at an operating loss. The industry as a whole showed an operating profit of 6*d.* a ton, "not quite enough to cover the interest and interim income payable to the Minister of Fuel and Power." He suggested tentatively that the managers of pits which were working at an operating profit should put primary emphasis on output expansion and those of pits—covering about one-sixth of the industry—that were working at an operating loss of 10*s.* a ton or over should chiefly consider cost reduction, even if that meant lessening output; pits working at an operating loss of less than 10*s.* a ton being considered separately. It would be absurd for a person who knows nothing whatever about coal-mining to comment on the special problems of that industry. Mr. Schumacher's observations, however, have suggested to me some general considerations that may perhaps be worth exploring.

Let us ignore complications about transport and so on and suppose that some industry made up of a number of unit firms is producing a single uniform commodity, which each firm is selling at the same price in the market. Let us define the economic optimum as that situation in which each firm is producing that output which makes its marginal cost equal to selling price—as would tend to happen under a thorough-going competitive system. This situation may be quite different from the social optimum situation, and it may well benefit the community to secure that certain commodities are produced in quantities larger than the economic optimum will allow. Thus, whether or not an industry is in the hands of the State, two questions arise. First, assuming that the economic optimum situation is also the social optimum situation but is not being achieved, what should the State do? Secondly, assuming that the social optimum situation requires an aggregate output larger than the economic optimum

yields and the economic optimum *is* being attained, what should it do? I shall consider these two questions in turn.

In order to attain the economic optimum we require, in respect of any given ruling price, that all firms whose marginal costs are greater than that ruling price should contract and all whose marginal costs are less than this should expand.[1] Does it follow that all firms whose average costs are greater than the ruling price should contract, and conversely? For firms whose average cost is greater than marginal cost it is plain that an excess of average cost above price does not imply an excess of marginal cost; and therefore, while, maybe, some such firms ought to contract, it does not follow that all ought to do so. On the other hand, a deficiency of average cost below price implies a deficiency of marginal cost also, and therefore all firms experiencing that ought to expand. For firms whose average cost is less than marginal cost, if average cost is greater than price, then marginal cost must also, *a fortiori*, be greater than price, and they ought to contract. If, on the other hand, their average cost is less than price, it does not follow that their marginal cost is less than price, and therefore, though it may be that some of them ought to expand, it does not follow that all of them ought to do so. Thus it is not possible to lay down about average cost—and so average operating profit or loss—any simple general proposition corresponding to that laid down in the first sentence of this paragraph about marginal cost.

The root difficulty is, of course, that the relation of average cost to marginal cost in respect of any assigned level of marginal cost, though it must be the same for similar firms, may be quite different for dissimilar ones.[2] Because of this we cannot infer from a knowledge of how different firms' average costs stand to one another the way in which their marginal costs stand to one another. It is natural to suppose that, if firm A's average cost is *much* higher than firm B's, A's marginal cost is probably at least somewhat higher. Any such conclusion must be based on

[1] Since, as the allocation of production among firms improves, output should increase and the ruling price fall, the marginal costs of some firms which, in respect of their original output, were slightly below the original ruling price, may be above the new ruling price. Such firms, while called upon to expand in the first round, so to speak, may ultimately be called upon to produce less than they were producing at first.

[2] There is nothing to prevent firms of different sizes being similar in the required sense. Thus, if p be marginal cost and x output, all firms whose equation is $p = \phi\left(\frac{x}{m}\right)$ are similar irrespective of the value of m. The larger firm is the equivalent of m lesser firms, each a replica of the smaller one.

a premise, derived perhaps from experience, that most firms in an industry are not likely to be widely dissimilar in the sense in which that term is relevant here. It is, no doubt, some such consideration as this which lies behind Mr. Schumacher's distinction between pits that are making losses of more than 10*s.* a ton and pits making smaller losses. Probability reasoning of this kind must always be rather slippery. But it is better than nothing at all.

Let us next suppose that all our firms are producing outputs corresponding to the economic optimum but that the social optimum requires an output larger than this by some defined amount. Demand being given, the cost involved in increasing output beyond the economic optimum is the excess of the aggregate cost of producing the larger output over that of producing the optimum output. What this cost is evidently depends on the way in which aggregate output is allocated among the several firms. It will be a minimum if after the change the outputs of the several firms are such that marginal costs are still equal in all of them. Clearly this requires that the output of firms in which the marginal-cost-curve is elastic over the relevant range shall be expanded in larger proportion than that of those where it is inelastic; the proper proportionate expansion of the several firms being ranked in accordance with the ranking of their several elasticities. Anyone who desires to do so can easily express this idea in mathematical form.

If our industry is under unified public control, as the Coal Industry is, it will be the business of the management, by study of the relevant statistics and by trial and error, to approximate as nearly as it can to this ideal allocation. Under private enterprise the State will stimulate the controllers of the several firms by one or another system of subsidies to work towards the same end. This is plain sailing. It is possible, however, for a careless thinker to fall into a trap here. He may argue that, where it is desired to expand the output of an industry beyond the economic optimum, there is a great advantage in having that industry directly operated by a public authority, because under that system no subsidy to private persons need be paid. Extending the same line of thought, he might suggest that, where subsidies have to be paid, there is a great advantage in paying them only on additional outputs beyond the economic optimum rather than on total outputs. This kind of reasoning rests on a misconception. The payments made by Government in subsidies are costs to the Government; but from the standpoint of the community as a

whole they are not costs, they are transfers. There are advantages for the Budget in systems that require nil or small transfers rather than large ones. But what matters fundamentally is the actual additional cost incurred in producing the required additional output, irrespective of whether the machinery by which expansion is induced entails large transfers, or small transfers, or no transfers at all. The issue between management by a number of private firms and by a unified public corporation turns predominantly on the comparative general efficiency of the two systems, and considerations about transfers are relatively unimportant.

A. C. PIGOU

King's College,
Cambridge.

CHANGING PRODUCTIVITY IN THE NEW ZEALAND ECONOMY

THE purpose of this inquiry is to ascertain the rate of change in physical productivity in the New Zealand economy during the last twelve years. An attempt is also made to find such rates for particular productive sectors. The calculations performed follow the general method recently used by A. Maddison in the ECONOMIC JOURNAL (September 1952) for the Canadian economy, with one important difference.

Maddison deflates GNP for different years by the cost of living index and the wholesale price index, divides the result by the civilian labour force, adjusts for changes in working hours and, in the form of index numbers, purports to show changes in *physical* productivity. This method would be roughly adequate for a closed economy, but introduces a bias from changes in *value* productivity by disregarding the "open ends," *i.e.*, changes in the terms of trade. The difficulty is conceptual, and corresponds to the Pigovian distinction of income produced and income available.[1] It is apparent that, when the price of exports rises by more than the domestic price level, money GNP is not deflated sufficiently by the domestic price indices to give a constant real GNP, wherefore an improvement in the terms of trade, though unaccompanied by any real change in physical output per man

[1] Pigou, *Economics of Welfare*, quoted in Colin Clark's *The Conditions of Economic Progress*, 1951, pp. 9–16.

hour, will give the appearance of such a change on Maddison's index.

The years covered here are those for which official national income estimates exist, namely 1938, 1943 and 1946–50. The method used consisted in deflating personal consumption and government expenditures on goods and services by the retail price index, gross capital formation by the wholesale price index, exports by the export price index and imports by their own index. Other balance of payments items were excluded. All indices were converted to a 1938 = 100 base.[1] The sum of the resulting deflated items is taken to be real national output produced, here called real GNO to differentiate it from Maddison's GNP concept.

Real GNO is divided by the civilian labour force [2] and real output per civilian actively engaged is found and converted into a 1938 = 100 index. Real output per civilian actively engaged is then adjusted by an average hours worked index [3] and a new 1938 = 100 index is formed, showing real output per hour worked.

The principal results are shown in Table I.

TABLE I

	1938.	1943.	1946.	1947.	1948.	1949.	1950.
(1) Real GNO (millions)	237	307	329	327	345	374	394
(2) Civilian Labour Force	652,000	564,361	659,375	679,395	690,537	704,361	715,967
(3) Real output per civilian active	363	544	498	540	490	530	552
(4) *Idem* 1938 = 100	100	150	137	149	135	146	152
(5) Real output per man hour	363	544	506	554	514	546	569
(6) *Idem* 1938 = 100	100	150	139	153	142	150	157
(7) *Idem* by Maddison's method	100	154	140	151	141	155	170

Row (7) was introduced to show the appreciable effects the terms of trade can have in countries in which foreign trade is

[1] National income data source is the *Official Yearbook* and all prices indices come from the *Monthly Abstract of Statistics*.

[2] Since only 1936 and 1945 Census data exists on the total of persons actively engaged in productive pursuits, the labour force for the other years had to be estimated by comparing the proportion of labour force to total population. An allowance of 0·33% per annum was made for this percentage to decrease owing to the trend toward higher age groups and a greater percentage in the lowest age groups. The source for mean population estimates was the 1949–50 *Statistical Report on Population and Buildings*, by the Census and Statistics Department. Armed forces, stationed in New Zealand, were deducted as given in the Official Yearbook 1952 series, which conflicts with an earlier one (1944 Yearbook), but is presumably corrected.

[3] Source: *Official Yearbook*. It does not include agriculture, and to the extent that average hours in primary production may have fallen less than in manufacturing, is incorrect. The male–female ratio was assumed 3 : 1 over the whole period for purposes of weighting. The deviation is fractional. For 1938 no data existed, so 1939 was used. The adjustment was made by the operation:

$$\left[\frac{\text{GNO}}{\text{Civilian Labour Force}} \times \frac{1}{\text{Working Hours Index}}\right]$$ where 1938 = 100.

as important a component of national income as in New Zealand or in Canada. Thus in 1950, when both the net and the gross barter terms of trade improved appreciably above the preceding year, Maddison's method gives us a 10% increase in productivity, while the actual increase was no more than 5%.

The most significant results are rows (4) and (6). One thing that becomes apparent from them is the extent to which more leisure was chosen to replace potentially higher output. Another, more interesting result is that apparently the new high level of average productivity reached in 1943 as a consequence of the substantial diminution of the labour force, became a new norm, only partly and temporarily receded from in 1946, when the armed forces came back to civilian employment. The expanding character of the New Zealand economy may be discerned from the absence of a unique inverse relationship between labour force and productivity : the fact that in 1947 the labour force was 20% above 1943 and the output per man hour slightly above that of 1943, while that per person actively engaged was practically the same, makes it plausible to argue that for the economy as a whole, increasing, or at least constant, returns to labour still exist. Political authorities, deciding on the merits or demerits of immigration, might do well to ponder this fact.

An attempt is now made to reduce these overall indices of productivity, to the sum of their components. Independent calculations of physical productivity in New Zealand agriculture have been made by Bray for the International Labour Office.[1] In Table II, from his results, column 2 is deduced.

TABLE II

Agricultural Productivity Index

	1901 = 100.	1938 = 100.
1901	100	56
1906	105	58
1936	180	100
1945	245	125

Bray's productivity index, is " . . . obtained by dividing farm production figures in terms of livestock units, by the number of persons employed in farming . . . "

Based on this, he uses weights of 1 head of cattle = 5 sheep, 1 breeding ewe = 3·5 dry sheep and 1 dairy cow = 10 dry cattle

[1] F. R. Bray, " Employment, Productivity and Income in New Zealand Farming," *International Labour Review*, May 1950.

(steers). Output of butterfat per cow was considered to increase 1% per annum, but quality improvements were not measured.

The weakness of Bray's method appears to be the explicit and necessary assumption of a long-run normal relationship between the different branches of agriculture over fifty years, and the inability to account for different rates of technical progress between them. Because of greater advance in labour-saving devices in dairying than in sheep farming, which made the relative labour requirements per livestock unit change from the base year, and because dairying expanded more than sheep farming, Bray concludes that his index may well understate the actual rise in output. With this reservation, if we use his 1936 figures for 1938 and his 1945 data for 1943, we can compare the rate of change of productivity in agriculture with the total change in productivity as shown in row (4) of Table I, and by a process of subtraction weighted for employment, arrive at the rate of change in the rest of the economy.

The compound annual rate of change 1938–43 was 8·5% in row (4), Table I, and 4·6% for the same years in Table II. Now if

E = Total Employment = 608,000
e' = Agricultural Employment = 142,000
$e'' = E - e'$ = 466,000
ΔP = Overall rate of change = 8·5
$\Delta p'$ = Rate of change in agriculture = 4·6
$\Delta p''$ = Rate of change elsewhere

$$\Delta p'' = \frac{(E\Delta P) - (e'\Delta p')}{e''} = 9{\cdot}7\%$$

This result, *i.e.*, that the compound rate of change in the non-agricultural sectors of the economy was over twice that of agriculture while the absolute labour force decreased in both by roughly the same proportion seems in need of further verification to become wholly credible.

Some such verification is supplied by Colin Clark. His data on New Zealand's manufacturing industries [1] shows an increase in productivity per head of 33% from 1933 to 1938, or 6% per annum, and an increase in productivity per hour of 50% or 8·5% per year. As this was over a period of an increasing labour force actively engaged, the rise in productivity can well be expected to be lower than that of the following five years.

No figures for productivity in tertiary industries exist for New Zealand, but Colin Clark's data for other countries impresses on one the relatively stable character of the physical " output " per

[1] Colin Clark, *op. cit.*, p. 279. Overall figures differ because Clark includes Armed Forces in the labour force.

person in these industries. This calculation of a long-run annual rate of increase of 1·3% may well be used for New Zealand.[1] In that case the burden of the high rate of increase calculated for all other sectors except agriculture, must mainly fall on manufacturing, and the high rate found is made plausible by Colin Clark's similar rate for a less favourable period, calculated on a " value added " basis. Comparing Colin Clark's long-run data for manufacturing, and Bray's for agriculture, we get, for the former from 1905 to 1938 a compound annual rate of change of 2·3%, and for the latter from 1901 to 1936 one of 1·7%.

There are various possible explanations for the differential rates of progress shown. One might be a " natural " tendency for production techniques to change less, over time, in agriculture, than elsewhere. But if one considers that the tractor horse-power available, between 1925 and 1949 increased thirty-six times, one becomes doubtful of this explanation. On the other hand, shearing machine stands over the same period only doubled, and milking machines, measured by the number of cows capable of being milked simultaneously, rose 120%. The area occupied and cultivated in 1948–49 was 20,128,199 acres, against 18,453,708 in 1924–25, or only 9% more. That production functions changed considerably, even if technical knowledge had remained constant, is quite certain from this data, but whether they did so more or less than in manufacturing is not apparent.

Another hypothesis that might be advanced is that under the protective tariff system in force ever since 1895, profit in manufacturing was made great enough to account for a flow of the available investment capital into secondary industries and thus to explain greater *increases* in the physical output per labourer. It need hardly be emphasized that our index numbers have not given us any indication about absolute productivity comparisons between labour employed in the two branches, which would indeed be senseless as long as purely physical productivity is considered. A programme for further research should thus include an inquiry into the causes of the unequal flow of capital into manufacturing and agriculture, which must, according to our figures, have taken place.

E. LERDAU

Auckland University College.
New Zealand.

[1] Colin Clark, *op. cit.*, p. 314.

CURRENT TOPICS

THE official address of the Royal Economic Society in London has been changed from 4 Portugal Street, London, W.C.2, to *21 Bentinck Street, London, W.1*, where the Society will continue to be provided by the Royal Statistical Society, in the latter's new headquarters, with the same facilities that it has enjoyed in the past.

WE offer our most sincere congratulation to Sir Robert Hall, Honorary Secretary of the Society, on the conferment of the K.C.M.G. in the New Year's Honours List. This honour very appropriately serves to mark the great services of the Economic Section under his direction.

WE are equally delighted to congratulate Professor R. G. D. Allen on his advancement to the Companionate of the British Empire. He has made very notable contributions to the improvement of official statistics, as well as to the teaching of statistical techniques.

THE March issue of the UNESCO *Bulletin of the Social Sciences* will contain both very full summaries of the papers and a record of the discussions at the Conference of the International Economic Association, held last September at Santa Margherita, on the subject of Economic Progress.

A REPORT on the Teaching of Economics prepared by the International Economic Association at the request of UNESCO will shortly be published. The report includes both a general survey of the teaching of economics written by Mr. C. W. Guillebaud and detailed studies of actual methods and syllabuses of teaching in eleven countries, including the United Kingdom, also by Mr. Guillebaud, the United States, by Professor Horace Taylor of Columbia University, France, by Professor E. James of the University of Paris, India, by Professor C. N. Vakil of the University of Bombay. Copies of the report will be available to fellows of the Royal Economic Society at a price of 7*s.* on application to the Assistant Secretary, Royal Economic Society, 6 Humberstone Road, Cambridge.

The following have compounded for life membership of the Royal Economic Society :

Hagen, E. E.
Hilton, G. W.
James, Dr. R. G.
John, M. J.
Kravis, Prof. I. B.
Meyer, F. V.
Oishi, Prof. Y.
Robinson, Romney.
Sur, Dr. Sir Ananda, Mohan.
Swerling, B. C.
Woitrin, Prof. M. G.

The following have been admitted to membership of the Society :

Ady, Miss P. H.
Allan, D. G. C.
Als, G.
Amin, D. C.
Azhar, S. K. A.
Bain, J. F.
Bamji, J. D.
Banks, B. A.
Blake, B. P.
Bliss, R. E. P.
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Campbell, Dr. K. O.
Casey, N. V.
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RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society

VOL. CXVI, PART III, 1953. *Construction of an Index Number of Gilt-Edged Values :* M. S. RIX. *Statistical Investigations of Labour Productivity in Cotton Spinning :* L. H. C. TIPPETT and P. D. VINCENT. *The Treatment of Errors :* D. SEERS. *The Industrial Wages Bill and Earnings of Operatives in 1935 and 1948 :* H. LEAK. *Criminal Statistics :* T. S. LODGE. *Timber Statistics :* J. J. MACGREGOR.

VOL. CXVI, PART IV, 1953. *An Experimental Study of Quota Sampling :* C. A. MOSER and A. STUART. *A Comment on a Criterion of Efficiency in Local Administration. International Air Transport Statistics :* A. M. LESTER. *Statistics Relating to the Use of Land in the United Kingdom.*

Applied Statistics

VOL. II, NO. 3, NOVEMBER 1953. *Quality Control in the U.S.A. :* E. D. VAN REST. *An Experiment in the Sampling of Agricultural Returns :* H. PALCA. *A Technique for Standardising Massed Batteries of Control Charts :* S. BEER. *An Index of the Volume of Net Exports :* W. Z. BILLEWICZ. *The Evaluation of Detergent Performance in Domestic Dishwashing :* C. PUGH. *The Use of Samples in Auditing :* N. WILLIAMS. *Planning an Experiment in a Cotton Spinning Mill :* R. E. PEAKE. *A Change in the Proportion of Jurors :* T. CORLETT.

Economica

VOL. XX, NO. 80, NOVEMBER 1953. *Long-run Adjustments in the Balance of Trade :* A. C. PIGOU. *Concentration in Tropical Trade : Some Aspects and Implications of Oligopoly :* P. T. BAUER. *Dutch Foreign Investment, 1738–1800 :* A. CARTER. *The Technique of Monetary Insulation, December 1932 to December 1937 :* D. S. LEES. *The Conception of Jevons's Utility Theory :* J. A. LA NAUZE. *A Note on Monopoly and Economic Progress :* G. C. ALLEN.

The Review of Economic Studies

VOL. XXI, NO. 54, 1953–4. *Prices of Factors and Goods in General Equilibrium :* P. A. SAMUELSON. *Complementarity and the Excess Burden of Taxation :* W. J. CORLETT and D. C. HAGUE. *Colonial External Finance since the War :* A. HAZLEWOOD. *Recoupment as an Aid in Financing Nineteenth Century Street Improvements in London :* R. TURVEY. *Investment, Saving and the Inflationary Gap : Some Comments on Dr. Hansen's Models :* K. K. F. ZAWADZKI. *A Note on the Price Level and Interest Rate in a Growth Model :* R. SOLOW.

Oxford Economic Papers

VOL. 5, NO. 3, OCTOBER 1953. *The Full-Employment Economy, with Special Reference to Wages Policy :* SIR D. COPLAND. *How Long does a Company Live ? :* G. LINDGREN. *Marginal Preference and the Theory of Welfare :* J. ROTHENBERG; *A Reply :* W. E. ARMSTRONG. *The Effect of Taxation on Risk-Taking :* P. STREETEN. *Scarcity, Marxism, and Gosplan :* P. J. D. WILES. *Competition and Control in the British Sugar Industry :* P. E. HART.

Bulletin of the Oxford Institute of Statistics

VOL. 15, NOS. 10–11, OCTOBER–NOVEMBER 1953. *National Survey of Personal Incomes and Savings : Part IV, Personal Savings and Consumption Expenditure :* H. F. LYDALL. *The Instability of Sterling Commodity Prices :* C. D. HARBURY and E. NEVIN.

Journal of Industrial Economics

VOL. II, NO. 1, NOVEMBER 1953. *English Law and Monopolistic Practices :* C. A. COOKE. *The Sale of the Synthetic Rubber Plant :* R. SOLO. *A Note on Forecasting Demand for Special Offers in a Magazine :* M. K. ADLER. *The Efficiency of the Road Haulage Industry under Nationalization :* P. E. HART. *A Note on Labour Turnover and the Individual Factory :* H. BEHREND. *Cotton and Wool Textiles—Case Studies in Industrial Migration :* J. A. MORRIS.

Economic Trends

VOL. I, NO. 1, NOVEMBER 1953. This is the first issue of a new monthly publication of the United Kingdom Central Statistical Office, published by H.M. Stationery Office, 2*s*. It prints, with corresponding charts in each case, twenty-five of the tables in the *Monthly Digest of Statistics* which have most value and significance for business decisions. They are divided under the headings : Manpower; Production; Raw Materials; External Trade and the Balance of Payments; Finance; Prices, Earnings and Personal Expenditure.

The Manchester School of Economic and Social Studies

VOL. XXI, NO. 3, SEPTEMBER 1953. *Allocation and Programming in Modern Economics :* K. S. LOMAX. *Wage Rates and Earnings in the Cotton Industry from 1946 to 1951 :* G. EVANS. *The Underlying Issues of the 1949–50 Engineering Wage Claim :* A. TATLOW. *Employment for Women in the Development Areas 1939–51 :* J. H. DUNNING.

The Economic History Review

VOL. VI, NO. 2, DECEMBER 1953. *English Population in the Eighteenth Century :* H. J. HABAKKUK. *Naval Dockyards under the Later Stuarts :* D. C. COLEMAN. *Russian Financial Policy and the Gold Standard at the end of the Nineteenth Century :* O. CRISP. *Overseas Trade in the Reign of Henry VII : The Evidence of Customs Accounts :* P. RAMSEY.

Population Studies

VOL. VII, NO. 2, NOVEMBER 1953. *Social and Psychological Factors Affecting Fertility :* C. V. KISER and P. K. WHELPTON. *Age at Marriage and Proportions Marrying :* J. HAJNAL. *The Derivation of Fertility and Reproduction Rates from Restricted Data on Reproductive Histories :* W. BRASS. *Analysis of Patterns of Immigration and Absorption of Immigrants :* S. N. EISENSTADT. *Natural Increase of the African Population of British East Africa :* C. J. MARTIN.

The Sociological Review

VOL. XLIV, SECTION 4, 1952. *The Contribution of Psychopathology to Sociology :* J. H. ROBB.

VOL. XLIV, SECTION 5, 1952. *Job and Health in a Shipyard Town :* K. C. WIGGANS.

International Affairs

VOL. XXX, NO. 1, JANUARY 1954. *Communism and Islam :* B. LEWIS. *The Background of Russian Sea Power :* A. COURTNEY. *Syria Today :* A. CARLETON. *The International Court of Justice :* E. HAMBRO. *Satellite States in the Post-Stalin Era :* G. LIAS. *The Decline of the West in the Middle East : A Jewish Comment :* N. BENTWICH. *The Racial Picture in the Southern States of the U.S.A. :* M. B. ABRAM.

The Political Quarterly

VOL. XXIV, NO. 4, OCTOBER–DECEMBER 1953. *Commercial Television. Commercial Television : The Argument Examined :* H. MORRISON. *Monopoly and Broadcasting :* LORD BEVERIDGE. *Television and the*

Young Viewer : M. STOCKS. *B.B.C. or Commercial Radio :* S. TAYLOR. *The Nature of "Competitive" Television :* N. COLLINS. *Broadcasting in other Countries :* LORD SIMON OF WYTHENSHAWE. *Public Control of Commercial Television :* E. DAVIES. *The Hiss Case :* R. H. S. CROSSMAN.

VOL. XXV, NO. 1, JANUARY–MARCH 1954. *Capital Punishment :* LORD CHORLEY. *Korea and the Balance of Power :* C. BELL. *The British Communist Party :* E. J. HOBSBAWN. *The Transport Act, 1953 :* C. GRUNFELD. *The Volta River Aluminium Scheme :* R. B. DAVISON. *Italian Crisis :* N. JUCKER. *Party Politics and Local Government in Wales :* T. BRENNAN, E. W. COONEY and H. POLLINS. *Recent French Books :* J. P. MAYER.

Political Studies

VOL. 1, NO. 3, OCTOBER 1953. *Parliament and Foreign Policy in Sweden :* N. ELDER. *The Significance of the Campaign in General Elections :* H. POLLINS. *Civil Servants in Washington : II : The Higher Civil Service and its Future :* R. N. SPANN. *Discipline and Loyalty in the French Parliament during the Pinay Government :* P. CAMPBELL.

Soviet Studies

VOL. V, NO. 3, JANUARY 1954. *Some Notes on the 1953 Budget and the Peasants :* A. NOVE. *The Decisions on Agriculture :* R. SCHLESINGER. *Soviet Housing—the Historical Aspect :* A. BLOCK.

Accounting Research

VOL. 4, NO. 4, OCTOBER 1953. *The Finance of Public Companies—an Exploratory Study of Two Industries :* A. LUBOFF. *Income and Capital in Income Taxation—Distributions by Companies :* H. EDEY. *The Mathematics of Variance Analysis : II :* G. AMERMAN. *The Mathematics of Variance Analysis and the Possibilities of its Application :* K. C. BANERJEE. *The Formal Principles of Public Company Accounting :* F. SEWELL BRAY. *The Distinction between Sub-Accounts and the Sides of an Account :* M. N. MONTEIRO.

The Incorporated Statistician

VOL. 4, NO. 3, OCTOBER 1953. *Road Accidents :* G. PRYS WILLIAMS. *Correlation for the Non-Mathematician :* J. KEEN and A. N. JAMES. *Annual Conference. The Statistical Approach to Weights and Measures :* D. J. DESMOND. *Retail Audit Research :* J. A. P. TREASURE. *Some Notes on Occupations and Socio-Economic Groups :* L. PARKINSON.

The Banker

VOL. CI, NO. 334, NOVEMBER 1953. *Primrose Path ? Evolving a Monetary Policy. Where the United Nations is Wasting Money :* M. AARONSON. *Aircraft for Export :* M. S. GOLDRING. *France's Familiar Crisis :* C. R. HARGROVE. *Scotland—an Economic and Industrial Survey : Scotland's Industrial Future :* W. J. JENKINS; *Shipbuilding : The Steel Bottleneck :* D. MURRAY; *Why Scottish Coal Output is Lagging :* A. CONNER.

VOL. CI, NO. 335, DECEMBER 1953. *Liberalising the Tories. From E.P.U. to I.M.F. Farming Policy in Perspective. American Trends and British Policy :* T. BALOGH. *Trade Behind the Curtain :* S. SCHATTMANN. *Disinflation in Israel :* H. SCHLOSS and H. MILLNER. *What Future for Industrial Assurance ?*

VOL. CII, NO. 336, JANUARY 1954. *Tasks for the Sydney Conference. America : More Abundance or Less ? :* J. E. HARTSHORN. *Why Attack "Take-Overs" ? :* H. COWEN. *Legal Aspects of Take-Over Bids :* S. G. MAURICE. *Clouded Outlook for the Reserves :* A. R. CONAN. *Australia in the Sterling Area :* J. O. N. PERKINS. *A Hundred Years of Eastern Exchange Banking :* G. TYSON.

The Bankers' Magazine

NO. 1316, NOVEMBER 1953. *Fairly Even Course. International Survey :* H. E. EVITT. *A Disappointing Surplus :* J. HUNSWORTH.

NO. 1317, DECEMBER 1953. *Elusive Recession. Charges and Services :* W. RIDLEY. *At the Sign of "The Anchor." A Branch is Born.*

NO. 1318, JANUARY 1954. *Confounding the Issues. The Frontiers of Europe :* M. J. BONN. *Britain's Best Customer.*

Barclays Bank Review

VOL. XXVIII, NO. 4, NOVEMBER 1953. *Tariffs under G.A.T.T. Sources of Saving. The Sudan Gezira Scheme.*

District Bank Review

NO. 108, DECEMBER 1953. *Should Commodity Prices be Stabilised ? :* A. J. BROWN. *The Future of Technological Education :* D. G. CHRISTOPHERSON. *Farming in the North-west.*

Lloyds Bank Review

NO. 31, JANUARY 1954. *The European Trade and Payments System :* R. MARJOLIN. *The House of Lords and its Reform :* D. W. BROGAN. *The Evolution of Shopkeeping :* B. YAMEY.

Midland Bank Review

NOVEMBER, 1953. *Post-War Capital Development in Britain. Diminishing Scope of the Ministry of Food. Business Conditions in Scotland.*

National Provincial Bank Review

NO. 24, NOVEMBER 1953. *The Young Worker in British Industry :* A. E. MORGAN. *Links with the Past.*

The Three Banks Review

NO. 20, DECEMBER 1953. *Agricultural Policy : Some Economic Results and Prospects :* J. R. RAEBURN. *Man-Made Fibres :* D. W. HILL. *An Early Scottish Development Corporation.*

Westminster Bank Review

NOVEMBER 1953. *Some Facts about the French Economy :* B. DE JOUVENEL. *The Hyperbarbarous Technology :* A. T. PEACOCK. *On Not Having it Both Ways :* G. R. ALLEN.

Journal of the Institute of Transport

VOL. 25, NO. 7, NOVEMBER 1953. *Presidential Address : an Account of Stewardship :* J. ELIOT. *Road Passenger Transport and Economic Laws :* E. R. L. FITZPAYNE. *The Decline and Fall of London Tramways :* C. F. KLAPPER. *The Organisation and Functions of I.A.T.A. and I.C.A.O. :* E. C. MURRAY.

Planning

VOL. XIX, NO. 356, OCTOBER 1953. *Technical Aid after Three Years.*

VOL. XIX, NO. 357, NOVEMBER 1953. *Choosing University Students.*

VOL. XIX, NO. 358, DECEMBER 1953. *Schools under Pressure : I : The Shortage of Teachers.*

VOL. XIX, NO. 359, DECEMBER 1953. *Schools under Pressure : II : Buildings and Costs.*

Town and Country Planning

VOL. XXI, NO. 115, NOVEMBER 1953. *Industry's Criticisms of Planning. School Playing Fields : Do They Take Too Much Land ? :* L. C. KITCHING. *Opencast Mining. Revitalizing the Village : The Place of the School :* M. G. LLEWELYN. *Planning and Agriculture :* W. ARTER. *"King Villages" :* A. B. HUDSON. *A New Colonial Town :* C. W. DUMPLETON. *Planning Education : The Manchester University School :* L. B. KEEBLE.

VOL. XXI, No. 116, DECEMBER 1953. *Houses, The Next Step:* D. DONNELLY. *TCPA French Tour:* F. J. OSBORN. *Glasgow and New Cumbernauld:* E. MITCHELL. *England's Little Holland: Must it be Destroyed?:* K. W. GRIMES. *Harrow and the Hill:* N. PEARSON. *Totteridge and its Preservation:* M. S. BRIGGS. *Short Cuts:* H. MACE. *Village Signs:* P. H. LOVELL.

VOL. XXII, No. 117, JANUARY 1954. *Success of the New Towns:* F. J. OSBORN. *Financial Factors of Planning:* A. E. TELLING. *Community Life and Industrial Output:* S. H. TODD. *Gardens in Harlow:* L. E. WHITE. *The Church's Opportunity:* C. H. BUTLER. *Providing for Education:* B. E. LAWRENCE. *The Importance of Playing Fields:* W. THOMAS. *Progress of New Towns to December 1953. A Look at the Shops:* A. E. HAMMOND. *Social Facilities: Deputation to Ministry:* D. R. MORIARTY. *An Industry Moves to Crawley:* C. H. CUTTRISS. *A New Border Town:* P. E. R. BAILEY. *Corby's Major Problem:* K. H. TURNER. *Some Notes on Harlow:* E. S. HARRIS. *The People are the Town:* P. C. WALES.

Cartel

VOL. 3, No. 6, OCTOBER 1953. *Machlup on Monopoly:* J. E. VAIZEY. *The Consumers' Council in Norway:* P. SÖLLAND. *Self-Service—Realm of the Giants?:* R. EVELY. *The Art of Registration. Two Swedish Cartels. Sharing the Sugar Market. ECOSOC Plays Safe.*

Progress (Lever Bros.)

VOL. 43, No. 240, AUTUMN 1953. *The War Against Hunger:* SIR H. BROADLEY. *Trends in Trade Union Organization:* B. C. ROBERTS. *Lessons of Benelux:* P. KUIN. *Civilization and the Growth of Dental Disease:* SIR W. K. FRY. *Industry and the Common Reader:* SIR G. BARRY. *Education for Productivity:* B. HOLLOWOOD. *Are Executives Paid Enough?:* R. BIRD. *Venture in the Solomons.*

Hard Fibres

No. 10, 1953. *Hard Fibre Price Levels. World Situation. Trends in Manufacturing Countries: France. Market Reports.*

Statistical and Economic Review (The United Africa Company)

No. 12, SEPTEMBER 1953. *Kingsway Stores, Lagos. Textile Imports, British West Africa.*

Canadian Journal of Economics and Political Science

VOL. 19, No. 4, NOVEMBER 1953. *Perspective on Change in the Prairie Economy:* G. E. BRITNELL. *Newfoundland and the Labrador Potential:* C. R. FAY. *Delegated Legislation in Canada:* J. R. MALLORY. *Statistics of Canada's Balance of Payments:* C. D. BLYTH. *Equilibrium Growth in an International Economy:* H. G. JOHNSON.

The South African Journal of Economics

VOL. 21, No. 3, SEPTEMBER 1953. *Economics as a Tool of Business Management:* T. H. KELLY. *The Notion of Money of Constant Value—Part I:* W. H. HUTT. *The Theory of International Trade—a New Approach:* H. W. J. WIJNHOLDS. *The South African Fishing Industry:* W. H. STOOPS. *David Ricardo:* O. ST. CLAIR.

The Indian Economic Journal

VOL. I, No. 2, OCTOBER 1953. *The State of Consumption Theory:* B. DATTA. *The Economics of Restrictionism:* S. R. SEN. *The Supply of Labour to the Bombay Cotton Textile Industry, 1854–1951:* M. D. MORRIS. *On the National Sample Survey Estimates of Consumption of Foodgrains in India:* V. M. DANDEKAR. *The Burden of Land Taxation in the Punjab (India) 1927–8 to 1949–50:* S. B. RANGNEKAR.

Tata Quarterly

VOL. VIII, No. 3, JULY 1953. *Post-War Quantitative Import Restrictions. Economic and Financial Review, April–June 1953. Statistical Tables.*

VOL. VIII, No. 4, OCTOBER 1953. *Sterling Convertibility. Economic and Financial Review, July–September 1953.*

The Ceylon Economist

VOL. 4, No. 2, JULY 1953. *The Mission to China:* S. P. AMARASINGHAM. *The Kandyan Peasantry Problem: II:* J. B. KELEGAMA. *The Paddy Lands Bill:* W. RUPESINGHE. *China's Foreign Trade:* T. KAO.

Journal of the Statistical and Social Inquiry Society of Ireland

VOL. XIX. *Drifting to Absolutism?:* F. C. KING. *Agricultural Education and Research:* B. J. SENIOR. *Economic Leviathans:* J. JOHNSTON. *The Northern Ireland Housing Trust:* SIR L. O'BRIEN. *Accounting and Economic Decision:* E. A. GRACE. *The Economic Future of Northern Ireland:* SIR R. NUGENT. *The International Labour Organisation:* B. STAFFORD.

Social and Economic Studies

VOL. 1, No. 3, JULY 1953. *National Income and National Accounts:* N. M. SIFFLEET. *Incentives to Private Investment as an Aspect of Development Programmes:* A. F. EARLE.

VOL. 1, No. 4, AUGUST 1953. *A Survey of Income and Consumption Patterns in Barbados:* K. H. STRAW. *Currency and Banking in Jamaica. Social Structure in the British Caribbean about 1820:* M. G. SMITH. *Land Tenure and the Family in four Communities in Jamaica:* E. CLARKE.

VOL. 2, No. 1, SEPTEMBER 1953. *Industrial Training Methods:* E. CAMPBELL. *A Study of the Beliefs of the Akawaio:* A. J. BUTT.

VOL. 2, NOS. 2 and 3, OCTOBER 1953. *Social Stratification in Trinidad:* L. BRAITHWAITE. *Motherhood Tables of the 1946 Census:* G. W. ROBERTS.

International Journal of Agrarian Affairs

VOL. 1, No. 5, SEPTEMBER 1953. *Land Settlement: The Making of New Farms.*

Economic Bulletin for Europe

VOL. 5, No. 3, SECOND QUARTER 1953. *Review of the Economic Situation in Europe during the Second Quarter of 1953. A Note on Index Numbers of Terms of Trade. Rent Control Policies in Western Europe.*

International Labour Review

VOL. LXVIII, No. 3, SEPTEMBER 1953. *Rent Policy in Western Europe:* H. UMRATH. *The Labour Code for French Overseas Territories: An Answer to an Urgent Problem:* P. RIVIÈRE. *Some Economic Considerations:* P. DEVINAT. *The Parliamentary Inquiry into Unemployment in Italy:* R. TREMELLONI. *Productivity and the Trade Unions in France:* R. RICHARD.

VOL. LXVIII, NOS. 4–5, OCTOBER–NOVEMBER 1953. *International Balance in Social Security Costs:* P. LAROQUE and A. ZELENKA. *The Effective Application of International Labour Standards:* E. A. LANDY. *The Common Employment Market for the Northern Countries:* B. OLSSON. *Raising Productivity in Israel:* H. FISH. *An Indian Experiment in Rural Development: The Etawah Pilot Project:* S. K. JAIN.

VOL. LXVIII, No. 6, DECEMBER 1953. *The Thirty-Sixth Session of the International Labour Conference, Geneva, June 1953. Industrial Relations in Great Britain: A Survey of Post-War Developments:* H. S. KIRKALDY. *Tribal Labour and Social Legislation in French Africa:* SISTER MARIE-ANDRÉ DU SACRÉ-COEUR. *Trade Unionism among Agricultural Workers in Chile:* F. WALKER LINARES.

International Financial Statistics

VOL. VI, No. 10, OCTOBER 1953. *Revision of IFS Price and Trade Distribution Tables. Balance of Payments Statements for France, Brazil, Peru and Venezuela.*

VOL. VI, No. 11, NOVEMBER 1953. *Recent Changes in Monetary Policy. Syrian Money and Banking Statistics.*

VOL. VI, No. 12, DECEMBER 1953. *A Review of Chile's Experience with Multiple Currencies. Reconciliation of Foreign Exchange Assets and Liabilities.*

Kyklos

VOL. VI, No. 3, 1953. *Depressed Zones and Economic Progress :* F. CHESSA. *Development of Underdeveloped Countries and the Economics of Poland since 1945 :* O. NATHAN. *Grundprobleme der Anthropologie in den U.S.A. :* L. v. WIESE. *Die Theorie vom öffentlichen Nutzen :* C. GRILLI. *The Theory of Inflation :* G. ACKLEY. *Zum Problem der Wirtschaftssysteme :* H. BÖHI.

Economia Internazionale

VOL. VI, No. 3, AUGUST 1953. *A Model of the Undulatory Economic Process :* A. D. BILIMOVICH. *Di alcune condizioni relative all'accrescimento del reddito nazionale :* A. FRANCHINI-STAPPO. *Social Structure and Economic Growth :* B. F. HOSELITZ. *Intorno al concetto di sviluppo economico :* V. MARRAMA. *Influences Regulating the Amount of Currency and the Institutional Problem of Money :* J. RUEFF.

Revue de l'Institut International de Statistique

VOL. 21, No. 1–2, 1953. *Analyse générale des liaisons stochastiques : étude particulière de l'analyse factorielle linéaire :* G. DARMOIS. *The Organisation of National Accounts Statistics in Under-developed Countries : a Report on Turkey :* M. GILBERT. *"Average Confidence" limits for binomial probabilities :* H. C. HAMAKER. *A Note on Heteroscedastic Errors in Regression Analysis :* S. J. PRAIS.

The American Economic Review

VOL. XLIII, No. 4, SEPTEMBER 1953. *The Theory of the Offset Factor : The Impact of Labor Disputes upon Coal Production :* C. L. CHRISTENSON. *The Burden of Soviet Taxation :* F. D. HOLZMAN. *Cyclical Turning Points : Canada, 1927–1939 :* E. MARCUS. *Sraffa's* Ricardo *:* G. J. STIGLER.

VOL. XLIII, No. 4, SEPTEMBER 1953, SUPPLEMENT. *Graduate Education in Economics :* H. R. BOWEN.

VOL. XLIII, No. 5, DECEMBER 1953. *Mathematical, or "Linear," Programming :* R. DORFMAN. *Vertical Equilibrium—Quality Competition :* L. ABBOTT. *"Realism" in Policy Espousal :* C. PHILBROOK. *"Full Employment" 1955–1960 :* R. S. WEINBERG.

The Annals of the American Academy of Political and Social Science

VOL. 290, NOVEMBER 1953. *The Impact of Atomic Energy.*

The Journal of Political Economy

VOL. LXI, No. 5, OCTOBER 1953. *The Population Upsurge and the American Economy, 1945–80 :* J. S. DAVIS. *Conditions for a Social Welfare Function :* J. ROTHENBERG. *Professor Tawney : Essayist and Christian Socialist :* F. H. KNIGHT. *The Logic of Union Growth :* J. SHISTER. *Cardinal Utility in Welfare Economics and in the Theory of Risk-Taking :* J. C. HARSANYI. *Dirlam and Kahn on the A & P Case :* M. A. ADELMAN; *A Reply :* J. B. DIRLAM and A. E. KAHN.

VOL. LXI, No. 6, DECEMBER 1953. *The Crédit Mobilier and the Economic Development of Europe :* R. E. CAMERON. *New Soviet Economic Plan : Its Agricultural Aspect :* V. P. TIMOSHENKO. *Money and Business Fluctuations in the Schumpeterian System :* C. WARBURTON. *Fiscal Policy in a Growing Economy :* J. G. GURLEY. *The Structure of Aggregate Saving : Correction and Addendum :* J. N. MORGAN.

The Review of Economics and Statistics

VOL. XXXV, No. 4, NOVEMBER 1953. *On the American Economy in 1960 : Projection, Prediction and Precariousness :* K. E. BOULDING. *Growth and Stability :* S. H. SLICHTER. *Long-run and Short-run Adjustments :* A. H. HANSEN. *First Tests of the Schuman Plan :* H. MENDERSHAUSEN. *The Impact of Steel upon the Greater New York–Philadelphia Industrial Region : A Study in Agglomeration Projection :* W. ISARD and R. E. KUENNE. *The Secular Trend in Income Distribution by Type, 1869–1948 : A Preliminary Estimate :* G. J. SCHULLER. *Veterans Transfer Payments and State per Capita Incomes, 1929, 1939 and 1949 :* H. G. SCHALLER.

Econometrica

VOL. 21, No. 4, OCTOBER 1953. *Le Comportement de l'Homme Rationnel devant le Risque : Critique des Postulats et Axiomes de l'École Americaine :* M. ALLAIS. *A Spatial Equilibrium Model of the Livestock-Feed Economy in the United States :* K. A. FOX. *On a Pooling Problem from the Statistical Decision Viewpoint :* W. D. FISHER. *On the Optimal Character of the (s,S) Policy in Inventory Theory :* A. DVORETZKY, J. KIEFER and J. WOLFOWITZ. *Non-negative Square Matrices :* G. DEBREU and I. N. HERNSTEIN. *A Theorem on the Construction of Voting Paradoxes :* D. C. MCGARVEY.

The Journal of Economic History

VOL. XIII, No. 3, SUMMER 1953. *Agenda for the Study of British Imperial Economy, 1850–1950 :* W. K. HANCOCK. *Agricultural Conditions in the Northern Colonies Before the Revolution :* W. S. SACHS. *Business Attitudes Toward European Immigration, 1880–1900 :* M. HEALD.

The Southern Economic Journal

VOL. XX, No. 2, OCTOBER 1953. *Effects of North–South Wage Uniformity on Southern Coal Production :* G. G. SOMERS. *The Impact of Multi-Unit Bargaining on Industrial Relations :* H. E. STEELE. *Effects of the Taft–Hartley Act on Labor Agreements, 1947–1952 :* T. J. LUCK. *The Tax Status of Social Security Benefits :* B. U. RATCHFORD. *Wage Stabilisation—a Regional Eye View :* S. COHEN. *Investment in Belgium in the Post-War Period :* H. PRICE.

Harvard Business Review

VOL. 31, No. 5, SEPTEMBER-OCTOBER 1953. *Organizing for Defense :* E. S. DUFFIELD. *Management Communication and the Grapevine :* K. DAVIS. *Public Relations down to Earth :* J. A. R. PIMLOTT. *How to Design the Salesman's Compensation Plan :* H. R. TOSDAL. *A Program for Cost Reduction :* B. PAYNE. *Should Industry Move South ?* H. T. LEWIS. *Profitable Inventory Levels :* F. B. TODD and I. SCHARF. *Industry Calls in the Doctor :* R. C. PAGE. *Plan your Retirement Activities Early :* H. R. HALL.

VOL. 31, No. 6, NOVEMBER–DECEMBER 1953. *Politics, Pressure Groups, and the Businessman :* R. F. BRADFORD. *Train Executives While They Work :* R. C. SAMPSON. *The Administrator's Skill : Communication :* F. J. ROETHLISBERGER. *Automation—the New Technology :* J. DIEBOLD. *What Employees Want from Their Work :* R. SALTONSTALL. *Plan for a Secondary Home Mortgage Market :* M. E. COLEAN. *Automatic Merchandising :* W. B. ENGLAND. *Would Tariff Suspension Hurt U.S. Business ? :* H. S. PIQUET. *Stimulating Private Investment Abroad :* M. C. CONICK. *Executive Compensation : Tax Gimmicks vs. Incentives :* A. PATTON. *The I.L.O.—Threat or Opportunity ? :* G. P. DELANEY.

Explorations in Entrepreneurial History

VOL. VI, No. 1, 1953–4. *Social Attitudes, Entrepreneurship, and Economic Development:* A. GERSCHENKRON. *Social Adjustment in Business Management:* W. ALDERSON. *Post Trading in the West:* W. N. DAVIS. *Introduction of Technological Changes in Industrial Plants:* M. SEGAL. *The Recruitment of British Management:* C. ERICKSON.

Social Research

VOL. 20, No. 3, AUTUMN 1953. *Population and Food Supply:* J. H. RICHTER. *An Examination of Theories of Race Prejudice:* I. GRAEBER. *Splinter Groups in American Radical Politics:* R. J. ALEXANDER. *Atheist Theocracy:* E. HEIMANN. *Public Housing: A Critique and a Proposal:* M. S. BARATZ. *Aspects of the Theories of W. I. Thomas:* E. H. VOLKART. *The German Army in Retrospect:* A. BRECHT.

Review of Social Economy

VOL. XI, No. 2, SEPTEMBER 1953. *The Challenge of Legal Supremacy:* R. L. KOERNER. *International Trade Organizations:* M. SEGAL. *Some Aspects of the Irish Balance of Payments, 1948–1950:* J. RYAN. *Problems of Emergency Arbitration:* J. V. SPIELMANS. *The Role of Economic Theory in Policy-Making:* W. H. KLEIN. *The English Major in the Economics Class:* R. WARD.

Journal of Farm Economics

VOL. XXXV, No. 4, NOVEMBER 1953. *Linear Programming Applied to Feed-Mixing Under Different Price Conditions:* W. D. FISHER and L. W. SCHRUBEN. *Economics in Agricultural College Curricula:* J. D. BLACK. *Agricultural Policy and Farmers' Freedom: A Suggested Framework:* D. D. HATHAWAY. *Agricultural Integration in Europe:* J. H. RICHTER. *Alternative Functions for Analyzing a Fertilizer–Yield Relationship:* P. R. JOHNSON. *Minimizing Grain Storage Costs:* G. TOLLEY. *Hedging Reconsidered:* H. WORKING. *Forage-Grain Substitution: Its Importance in the Economics of Milk Production:* E. RAUCHENSTEIN. *Proper Planning Reduces Research Errors:* R. L. ANDERSON. *Agricultural Problems of the Middle West:* L. D. SCHWENG.

VOL. XXXV, No. 5, DECEMBER 1953. *Proceedings of the Annual Meeting of the American Farm Economic Association Meeting Jointly with the Western Farm Economics Association.*

Economic Geography

VOL. 29, No. 4, OCTOBER 1953. *Community of Interest Areas in Western Europe—Some Geographical Aspects of Local Passenger Traffic:* F. H. W. GREEN. *Louisiana Iron Rock:* J. MCCARTER and F. KNIFFEN. *The Outlook for the Gas and Oil Industry of Southwest France:* G. G. WEIGEND. *The Impact of Tourism on the Economy of Cape Cod, Massachusetts:* L. M. ALEXANDER. *Motoring in the Sahara: The French Raids of 1951–1953:* B. E. THOMAS. *Agricultural Shifts in the Ventura Lowland of California:* H. F. GREGOR. *Patterns and Problems of Land Tenure in the Lesser Antilles: Antigua, B.W.I.:* J. P. AUGELLI.

Land Economics

VOL. XXIX, No. 4, NOVEMBER 1953. *Flood Insurance:* W. B. LANGBEIN. *Some Problems of British New Towns:* L. RODWIN. *Middle Income Housing: The Co-operative Snare?:* C. M. HAAR. *Co-operative Techniques and Effective Reduction on Housing Costs:* R. WILLCOX. *Land Reform and Industrial Development in Meiji Japan:* I. I. KRAMER. *Cartographic Aids in Economics Research:* J. B. CULVER and A. D. FENTEM.

The Journal of Accountancy

VOL. 96, No. 4, OCTOBER 1953. *Stock Dividends and Concepts of Income:* G. O. MAY. *Premature Revenue Recognition:* W. A. PATON. *New Changes in Federal Income-Tax Law:* B. HARROW. *Effect of Direct Costing on Company's Accounting:* T. R. HOSIOK. *The Thin Corporation Problem:* J. O. KRAMER. *Reasons for Encouraging Broader Utilization of Life:* J. V. VAN PELT. *Building and Keeping a Clientele:* D. FAGERBERG. *Auditing Program of Audit Bureau of Circulations:* J. K. LASSER. *Finding Transposition Errors with Rule of Nine:* F. T. NEELY. *Common Aims of Bankers, Accountants, Borrowers:* W. G. F. PRICE.

VOL. 96, No. 5, NOVEMBER 1953. *Resurgence of the Balance Sheet;* W. W. WERNITZ. *Consolidated and Parent Company Statements. Value to Individual of Adherence to Code of Ethics:* L. G. KELLY. *Lessening Tax Burden on Lump-Sum Income:* C. B. BAYLY. *Useful Variations in Short-Form Audit Report:* J. H. MYERS. *Profit-Sharing-Trust Retirement Plans:* D. R. L. FRANKLIN. *Answers to Uniform CPA Law Examination:* F. C. BRADLEY.

VOL. 96, No. 6, DECEMBER 1953. *Court Decisions and Income Determination:* S. I. SIMON. *Elements in Solving Shortage of Accounting Personnel:* C. E. JOHNSON. *Problems in Taxing Partnerships:* R. T. WARNER. *Internal Auditor's Function in Annual Audit:* G. A. LEE. *Accountants' Failure to Deal with Effects of Inflation:* M. E. PELOUBET.

Revue d'Économie Politique

VOL. 63, No. 6, NOVEMBER–DECEMBER 1953. *Quelques considérations sur les rapports de la liberté et de propriété:* R. GONNARD. *La naissance de la "Revue d'économie politique" vue à travers la correspondance de Charles Gide et Léon Walras:* C. GIDE. *Aspects actuels du contrôle du crédit:* C. PENGLAOU. *Unité ou pluralité des cadres de comptabilité nationale:* P. MAILLET.

Revue Économique

VOL. IV, No. 5, SEPTEMBER 1953. *La Modernisation de l'Agriculture Française. La productivité du travail:* H. BROUSSE. *La modernisation de l'agriculture:* J. KLATZMANN. *Les plans de modernisation, 1946–1952:* F. HOUILLIER. *Le commerce des produits agricoles:* J. CARREL. *Fiscalité et para-fiscalité:* P. COUTIN. *L'avenir de la viticulture française:* J. MILHAU. *Les projets d'expansion agricole européenne:* P. FROMONT.

VOL. IV, No. 6, NOVEMBER 1953. *La rémunération progressive:* A. SAUVY. *Leontief et l'étude du circuit économique:* J-R. BOUDEVILLE. *La convertibilité internationale des monnaies:* P. MENDÈS-FRANCE. *Études sur les zones monétaires: la zone sterling, la zone escudo, la zone franc:* F. BLOCH-LAÎNÉ, J. DELLAS, A. TEYSSIER D'ORFEUIL, M. COURCIER. *La situation économique:* L-A. VINCENT and G. MATTHYS.

Revue de Science et de Législation Financières

VOL. XLV, No. 4, OCTOBER–DECEMBER 1953. *The Economic Position of Independent Japan:* M. BRONFENBRENNER. *The Executive Regulating Powers in Financial Matters:* G. MORANGE. *Repartition of Financial Making Powers between the Bund and the Laender in the German Federal Republic:* F. TERHALLE. *Economic Legislation and Taxation:* J. DUFOUR. *The Evolution and Basic Problems of the Spanish Taxation System:* J. M. NAHARRO. *The Income Tax and Economic Fluctuations:* C. COSTANTINO.

VOL. XLVI, No. 1, JANUARY–MARCH 1954. *Gaston Jèze:* C. RIST, C. A. COLLIARD, M. DUVERGER, H. LAUFENBURGER, M. CLUSEAU, P. COULBOIS and L. TROTABAS. *Some Current Problems in Fiscal Theory:* K. E. POOLE. *Government Borrowing with a Sliding Scale for Interest Payments:* L. CARTOU. *Current Trends in Canadian Public Finance:* F. A. ANGERS. *Double Taxation of Savings:* E. D'ALBERGO. *The Spanish Tax System:* J. M. NAHARRO. *French Public Finance: Does the Volume of the Composition of Budgetary Expenditure Affect more Economic Expansion?:* H. KRIER and P. LE BOURVA. *The Budgets of French West Africa:* J. LECAILLON. *French Tax Legislation.*

Population

VOL. 8, NO. 3, JULY–SEPTEMBER, 1953. *Perspectives sur la population active européenne :* J. BOURGEOIS-PICHAT. *Sur les origines de la contraception en France :* P. ARIÈS. *Vues sur la statistique des familles :* L. HENRY. *Etude démographique de quelques villages Likouala (Moyen-Congo) :* J. CROCQUEVIEILLE. *Structure de la mortalité dans les familles consanguines :* J. SUTTER and L. TABAH. *La jeunesse dans la population active de la France :* E. PERITZ. *La localisation de quelques professions libérales dans Paris et le département de la Seine :* J. DARIC.

Journal de la Société de Statistique de Paris

VOL. 94, NOS. 7, 8, 9, JULY, AUGUST, SEPTEMBER 1953. *Le hasard et les causes rythmées :* G. BAUDEZ. *Possibilité de calcul d'un indice du coût de la construction :* P. DELAIN. *Chronique des statistiques agricoles :* M. CÉPÈDE. *Chronique de production industrielle :* P. VIENNOT.

Annales de Sciences Économiques Appliquées

VOL. 11, NO. 4, SEPTEMBER 1953. *Aperçu de la conjoncture économique en Belgique. Choix du type de hiérarchie :* U. VAES. *L'information des actionnaires :* V. LEVAUX.

Bulletin de l'Institut de Recherches Économiques et Sociales

VOL. XIX, NO. 7, NOVEMBER 1953. *L'étude de la société urbain. Synthèse de recherches :* D. SZABO. *Les Paroisses de Bruxelles, 1803–1951 :* F. HOUTART. *Une profession féminine : l'assistante sociale :* G. CORIN.
VOL. XIX, NO. 8, DECEMBER 1953. *La conjoncture économique de la Belgique :* M. WOITRIN.

Institut Universitaire d'Information Sociale et Économique

NO. 4–5, 1953. *Épargne et Investissements :* G. JACQUEMYNS.

Schmollers Jahrbuch

VOL. 73, NO. 6, 1953. *Alfred Vierkandt als Soziologe :* F. BÜLOW. *Die Hauptrichtungen der modernen Kredittheorie :* B. ISCHBOLDIN. *Das Gesetz der wachsenden Zouveränität :* J. GUMPERT.

Wirtschaftsdienst (in German with English Air Mail Digest)

VOL. 33, NO. 10, OCTOBER 1953. *Ways and Limits of Financial Reform in Germany :* W. HERRMANN. *The Major Tax Reform :* H. RITSCHL. *The Rehabilitation of German Merchant Shipping (II) :* R. STÖDTER. *Traffic Problems in the East Bloc :* K. WESSELY-LINZ.
VOL. 33, NO. 11, NOVEMBER 1953. *Inflated Volume of Money ? Criticisms of Europe's Coal and Steel Community. New Role for Trade Unions ? "Wage Dumping"—a Statistical Game of Dice :* F. SPIEGEL-HALTER. *Russia's Agricultural Programme. The New Agrarian Policy in Yugoslavia :* D. PEJČIČ. *Rationalization Problems of German Agriculture :* H. V.D. DECKEN and A. V. SETTEN.
VOL. 33, NO. 12, DECEMBER 1953. *The Deutschmark Mature for Convertibility ? Is European Integration Really Getting On ? France's Present Economic and Currency Position and its Effects on European Integration :* J. GUITON. *How to Attract American Investment Capital to Germany :* R. G. WERTHEIMER.

Zeitschrift für Nationalökonomie

VOL. XIV, NO. 1, OCTOBER 1953. *Leo Illy (Schönfeld) :* H. MAYER. *Amerikanische Beziehungen zur wirtschaftlichen Integration Europas :* T. SURÁNYIUNGER. *Zur Problematik der Wechselkurse in Österreich :* O. DANNEBERG. *Zur Ökonometrischen Behandlung Wirtschaftlicher Ganzheitsprobleme (Dargestellt Insbesondere am Verhältnis des Preises zu Seinen Kosten- und Gewinnbestand-teilen) :* O. KÜHNE. *Der Trugschluss in der Lehre vom Güttermaximum :* H. ALBERT. *Zur Entwicklung der Preistheorie in Deutschland :* J. SZNAHOVICH. *Zur Erinnerung an Alfonso de Pietro-Tonelli :* O. WEINBERGER.

Wirtschaft und Statistik

VOL. 5, NO. 10, OCTOBER 1953. *Die landwirtschaftliche Bevölkerung und die Erwerbspersonen in der Land- und Forstwirtschaft :* K. HORSTMANN. *Veränderungen im Arbeitskräftebestand der Land- und Forstwirtschaft :* W. SCHMIDT. *Das Lohngefüge in der Bundesrepublik (II) :* P. DENEFFE.
VOL. 5, NO. 11, NOVEMBER 1953. *Die Bilanzen der Aktiengesellschaften in den Jahren 1950 und 1951.*
VOL. 5, NO. 12, DECEMBER 1953. *Zur Bevölkerungspolitischen Lage in der Bundesrepublik Deutschland :* K. HORSTMANN. *Vorausberechnung der Bevölkerung in der Bundesrepublik Deutschland bis zum Jahre 1972 :* K. HORSTMANN and F. HAGE. *Die Umsätze der Unternehmungen :* W. ANTON. *Nettoproduktionswerteder Industrie des Bundesgebietes im Jahr 1950 :* K. WERNER. *Die Bundesrepublik Deutschland im Aussenhandel Westeuropas und der Welt 1950 bis 1952 :* J. GÜNTHER. *Die Gesamtausgaben der öffentlichen Verwaltung im Rechnungsjahr 1951 :* K. HERRMANN. *Zahl und Bruttolohn der Lohnsteuerpflichtigen :* K. HERRMANN.

Jahrbücher für Nationalökonomie und Statistik

VOL. 165, NO. 5–6, DECEMBER 1953. *Die Bedeutung des Akzelerationsprinzips für die Dynamisierung der Keynes'schen Systems :* K. ROSE. *Die Problematik der Stagnation im wirtschaftlichen Wachstumsprozess :* K. BRANDT. *Wüstungen und Preisfall imspätmittelalterlichen Europa :* W. ABEL. *Horten und Hortungsvorliebe :* W. UNGERER. *Zur Kritik der Lehre vom Grenznutzenniveau, eine Erwiderung an Wilhelm Krelle :* A. MAHR. *Replik :* W. KRELLE.

Zeitschrift für die Gesamte Staatswissenschaft

VOL. 109, NO. 4, 1953. *Historischer Rückblick auf die Entwicklung der Psychologie der Arbeit und der Akkumulation :* C. GINI. *Gesellschaftliche Strukturwandlungen und nationalökonomische Theorie :* H. SULTAN. *Produktivitätssteigerung :* H. BAYER. *Aktivitätsanalyse der Produktion und des Wirtschaftens :* M. BECKMAN. *Das Quantenproblem in der Produktionswirtschaft :* D. SCHMIDT.

Die Weltwirtschaft

NO. 2, 1953. *Weltwirtschaftlicher Überblick. Länderberichte. Marktberichte. Amerikanische Institutionen im Dienste der Wirtschaftsstabilisierung :* R. BINDER. *Steuerprobleme der Montanunion :* W. ALBERS. *Die Einkommensentwicklung in der westeuropäischen Landwirtschaft :* U. EWALD.

Allgemeines Statistisches Archiv

VOL. 37, NO. 3, 1953. *Beklemmungen gegenüber der Statistik in Deutschland:* K. KRIEGER. *Die Bedeutung der zeitlichen Auswahl bei Erhebungen, insbesondere bei Repräsentativerhebungen :* H. TRÜSTEDT. *Über die Anwendung von Stichprobenverfahren zur Kontrolle der Bearbeitung von Kartei- und Erhebungsunterlagen :* H. ZINDLER. *Die Volkszählung 1953 in Jugoslawien :* V. BONAČ. *Conurbation in Grossbritannien :* A. KÜHN. *Probleme der Baupreisstatistik und Baupreisindexberechnung :* P. DENEFFE.

Bayern in Zahlen

VOL. 7, NO. 9, SEPTEMBER 1953. *Die Ehescheidungen in Bayern 1952 :* C. MÜHLE. R. MAIS. *Die Todesursachen in Bayern im Jahre 1952 :* J. EICHINGER. *Die Industrie der Der Gemüseanbau in Bayern 1953 :* J. MAYR-ERLACHER. *Weitere Zunahme Heimatvertriebenen in Bayern :* J. LEIPNER. *Totalerhebung des bayerischen Exports im 1 Halbjahr 1953 :* J. LEIPNER. *Totalerhebung über den Fremdenverkehr Bayerns im Fremdenverkehrsjahr 1951–52 :* J. LEIPNER. *Arbeitsunfälle und Berufserkaankungen in Bayern :* E. SCHMIDT. *Die Wohnungsmieten in Bayern :* F. ENGEL.

VOL. 7, NO. 10, OCTOBER 1953. *Die bayerischen Stadt- und Landkreise :* H. LEHMANN. *Die Krankheiten mit rückläufigen Sterbezahlen :* C. MÜHLE. *Handelsdüngerversorgung der bayerischen Landwirtschaft im Düngejahr 1952–53 :* F. ILLNER. *Die Untermietverhältnisse in Bayern :* F. ENGEL. *Die Rundfunkdichte in Bayern :* J. LIEPNER.

VOL. 7, NO. 11, NOVEMBER 1953. *Die Schlepperverwendung in der bayerischen Landwirtschaft :* J. RAAB. *Die Bodenbenutzungserhebung 1953 :* J. EICHINGER. *Die Getreideernte 1953 :* J. EICHINGER. *Die Lage der bayerischen Wirtschaft zu Beginn des Herbstes 1953 :* H. RANZ. *Betriebserhebung im Beherbergungsgewerbe zum 1 April 1953 :* J. LEIPNER. *Hohe Spiel- und Wettumsätze in Bayern :* R. SCHNEIDER. *Die Kriegsfolgenhilfe im Rahmen der öffentlichen Fürsorge :* E. SCHMIDT. *Der Einfluss der Gemeindegrösse auf di Verbrauchsstruktur :* H. SCHMUCKER.

Vierteljahrshefte zur Wirtschaftsforschung

No. 4, 1953. *Zur konjunkturellen Situation :* A. WISSLER. *Die Ergebnisse der vierteljährlichen Volkswirtschaftlichen Gesamtrechnung für die Bundesrepublik : Drittes Quartal 1953 :* F. GRÜNIG and H. SCHIMMLER. *"Investieren" und "Sparen" im Rahmen der Volkswirtschaftlichen Gesamtrechnung :* F. GRÜNIG. *Deutschlands Bevölkerungsverluste durch den zweiten Weltkrieg :* B. GLEITZE. *Der Interzonenhandel Deutschlands von 1946 bis Mitte 1953 :* F. FEDERAU. *Strukturwandlungen im westdeutschen Personenverkehr :* H. OTTO.

Europa Archiv

VOL. 8, NO. 19, OCTOBER 1953. *Die Notwendigkeit eines europäischen Kartenwerks :* W. KRALLERT. *Der zivile Bevölkerungsschutz im Ausland :* W. VON DREISING. *Grossbritannien und die Europäische Zahlungsunion :* H. CAMMANN.

VOL. 8, NO. 20, OCTOBER 1953. *Der Fall Karpathorussland : Ein Beitrag zur Entstehungsgeschichte des Kalten Krieges :* J. W. BRÜGEL.

VOL. 8, NO. 21, NOVEMBER 1953. *Zur Entwicklung der deutschen Sprache in der sowjetischen Besatzungszone :* W. RICHTER. *Die Sozialarbeit der Brüsseler Paktmächte im Rahmen einer europäischen Sozialpoitik :* H. VOLLE.

VOL. 8, NO. 22, NOVEMBER 1953. *Das Kolonialproblem als Aufgabe der Europaforschung :* R-J. GUITON. *Probleme der Französischen Union : VIII : Die Französische Union und die Europäische Einigung :* R-J. GUITON.

VOL. 8, NO. 23, DECEMBER 1953. *Einwirkungen der russischen Literatur auf die Literatur der sowjetischen Besatzungszone in Deutschland :* K. WERNER. *Studien zum Föderalismus. Ergebnisse einer amerikanischen Untersuchung über die Probleme einer europäischen Staatengemeinschaft.*

VOL. 8, NO. 24, DECEMBER 1953. *Studien zum Föderalismus. Ergebnisse einer amerikanischen Untersuchung über die Probleme einer europäischen Staatengemeinschaft.*

VOL. 9, NO. 1, JANUARY 1954. *Aufgaben und Funktionen der wissenschaftlichen Institute auf den Gebieten des Völkerrechts, der Zeitgeschichte, der Wissenschaft von der Politik und der internationalen Beziehungen :* E. MENZEL. *Die soziale Arbeit des Europarates :* H. PFEFFERMANN. *Supranationaler Rechtsschutz : Sein Umfang und seine Organisation innerhalb der europäischen Gemeinschaft :* F. BREITNER.

Weltwirtschaftliches Archiv

VOL. 71, NO. 1, 1953. *Saving, Investment and Imperialism :* L. J. ZIMMERMAN and F. GRUMBACH. *Wachstum und Entwicklungsaussichten der amerikanischen Wirtschaft :* W. G. HOFFMANN. *Probleme einer Koordination der Wirtschaftsformen :* T. SURANYI-UNGER. *The Partial Equilibrium of a Continuous Space Market :* M. J. BECKMANN. *British Monetary Policy 1945–1952 :* J. LANNER.

Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung

VOL. XXVI, NO. 9, SEPTEMBER 1953. *Die wirtschaftliche Lage in Österreich. Österreichs handelsvertragliche Beziehungen seit Kriegsende.*

VOL. XXVI, NO. 10, OCTOBER 1953. *Die wirtschaftliche Lage in Österreich. Der Bundesvoranschlage 1954. Der Schweinemarkt im Jahre 1954.*

VOL. XXVI, NO. 11, NOVEMBER 1953. *Die volkswirtschaftliche Bedeutung der Einkommensteuerreform : Die wirtschaftliche Lage auf einzelnen Gebieten. Zur Erhöhung der Personentarife der Österreichischen Bundesbahnen.*

Schweizerische Zeitschrift für Volkswirtschaft und Statistik

VOL. 88, NO. 5, OCTOBER 1953. *Zur Frage der Rechenbarkeit des subjektiven Wertes :* H. MAYER. *Open Market Operations in English Central Banking :* R. S. SAYERS. *Die schweizerische Kapitalverkehrsbilanz :* G. JAQUEMET. *Über Wirtschaftsprognosen :* L. A. HAHN. *Eine Haushaltungsrechnung Über fünfzig Jahre :* O. H. JENNY.

Aussenwirtschaft

VOL. 8, NO. 3, SEPTEMBER 1953. *Betrachtungen zur Aussenwirtschaftspolitik :* H. BACHMANN, A. BOSSHARDT and F. LÜTOLF. *Die Konjunkturassichten in den Vereinigten Staaten von Amerika :* G. HABERLER. *Die Wiedereinschaltung Deutschlands in den Welthandel nach dem zweiten Weltkrieg :* F. BAADE. *Probleme der Exportrisikogarantie :* H. ALLENSPACH.

Statistische Vierteljahresschrift

VOL. VI, NO. 1–2, 1953. *Die Änderung des Zahlenverhältnisses der aktiven und nichtakiven Bevölkerung Österreichs durch den Geburtenund Sterberückgang 1910 bis voraussichtlich 1969 :* W. WINKLER. *Indexzahlenprobleme :* W. WINKLER. *Zur Theorie des Konjunkturtestes :* O. ANDERSON. *Das Betriebssprktrum :* A. ADAM. *Ein Beitrag zur Testung der Panmixie :* W. OSSADNIK.

De Economist

VOL. 100, NO. 10, OCTOBER 1953. *Wereldbevolking en wereldvoedselproductie :* H. J. FRIETEMA. *Concurrentie, kartellering en kartelwetgeving :* H. HOELEN.

VOL. 100, NO. 11, NOVEMBER 1953. *Enige kwantitatieve aspecten van het probleem der hulpverlening aan onderontwikkelde landen :* H. THEIL. *Notitie betreffende Karl Marx' bijdrage tot de economische theorie :* L. H. KLAASSEN. *Economische en sociale kroniek :* W. J. v. D. WOESTIJNE. *Internationale economische kroniek :* E. D. DE MEESTER.

VOL. 100, NO. 12, DECEMBER 1953. *Hrt sociaal element in het economisch leven :* T. P. v. D. KOOY. *Het ontwerp-Ziekenfondswet :* S. J. RADEMAKER. *Economische en sociale kroniek :* W. J. v. D. WOESTIJNE.

Ekonomisk Tidskrift

VOL. LIV, NO. 4, DECEMBER 1952. *Innovations and the Cumulative Process :* JOHAN ÅKERMAN. This article argues that the achievements of the Stockholm School, as compared with the ideas of Wicksell and of Veblen, Mitchell and Schumpeter, constitute a return to classical equilibrium analysis. For example, the theory of the Stockholm School is held to be valid in all political, economic and monetary structures, whereas Wicksell was trying to explain a particular situation—the development of prices in gold-standard countries in the last three decades of the nineteenth century. Another reason is that the "dynamic" role of innovations has been replaced in Stockholm analysis by "anticipations." The author sketches the requirements of what he calls a "causal analysis." *The Application of the Theory of Games in Economics :* C. WELINDER and G. BERGENDAL. In the main von Neumann and Morgenstern confined themselves to the application of their theory to

market problems in the narrow sense. This article discusses its application to the macro-economic sphere, the labour market and the distribution of income.

VOL. LV, NO. 1, MARCH 1953. *On the Grounds for the Existence of Interest*: G. ARVIDSSON. A discussion of Böhm-Bawerk's theory of interest and of various criticisms of it, particularly that of Irving Fisher.

VOL. LV, NO. 2, JUNE 1953. *Some Reflexions on Research Projects in the Social Sciences*: JOHAN ÅKERMAN. An inaugural lecture given at a joint seminar in Lund University covering work done in the fields of economic history, geography, economics, sociology, statistics and government. Examples of projects involving contributions from several disciplines are as follows: the development of Swedish Provinces under industrialism; social groups, economic fluctuations and election results in Sweden in the parliamentary era; the economic and social background of farmers' organisations; the significance of wars in the evolution of society; the impact of technical development on the transformation of society; fluctuations in natural increase and their bearing on the evolution of society; criteria of social value in an advanced industrial society. *On Simultaneity in Economic Models*: RAGNAR BENTZEL and BENT HANSEN. A contribution to the discussion inspired by Haavelmo's article in *Econometrica* (1943), "The Statistical Implications of a System of Simultaneous Equations." The debate on the merits of simultaneity and non-simultaneity cannot be resolved in a clear-cut manner; both types of model have their uses, and the choice must depend on the particular problem in hand.

Giornale Degli Economisti e Annali di Economia

VOL. XII, NO. 9–10, SEPTEMBER–OCTOBER 1953. *Achille Loria nella Storia del Pensiero Economico Italiano*: A. FOSSATI. *La Posizione dell'Uomo nel Pensiero Economico Contemporaneo*: F. VITO. *La Fecondità Matrimoniale in Italia dal 1930 al 1950*: L. LENTI. *La Ricerca delle Leggi Economiche Mediante l'Interpolazione dei Dati Statistici*: G. SENSINI. *L'Economia Meridionale e il sui Sviluppo*: G. R. VELLA.

Rivista Italiana di Economia Demografia e Statistica

VOL. VI, NO. 3–4, JULY–DECEMBER, 1952. *Atti della XIV Riunione Scientifica della Società Italiana di Economia Demografia e Statistica.*

Review of the Economic Conditions in Italy (Banco di Roma)

VOL. VII, NO. 6, NOVEMBER 1953. *Revisionary Trends and Apprehensions Regarding G.A.T.T.'s Future*: F. COPPOLA D'ANNA. *Italian Forests*: A. MERENDI. *Italy's Railway Problem*: G. DELLA PORTA.

Banco Nazionale del Lavoro Quarterly Review

VOL. VI, NO. 25, APRIL–JUNE 1953. *A Second-Year Review of Mr. Butler's Monetary Policy*: R. S. SAYERS. *Italian Economic Developments in 1952 as Reported by the Bank of Italy*: V. LUTZ. *Some Aspects of the Italian Demographic Situation: the First Results of the 1951 Census*: N. FEDERICI. *The Natural Gas Industry in Italy. Central Banking in the Commonwealth*: D. ROWAN.

Italian Affairs

VOL. II, NO. 6, NOVEMBER 1953. *Trieste and Italy.*

L'Industria

NO. 3, 1953. *Analisi delle modificazione strutturali dell'economia italiana*: H. B. CHENERY. *La programmazione lineare ed il metodo del simplesso*: S. RICOSSA. *Ricerca econometrica sulla domanda e l'offerta di tessuti di cotone in Italia dal 1928 al 1938*: A. PREDETTI. *La povertà dello storicismo*: C. POPPER.

Boletin de Estudios Economicos

VOL. VIII, NO. 30, SEPTEMBER 1953. *En Torno a la Contribución General Sobre la Renta*: C. A. CARCIA-QUINTANA. *La Sociedad Total*: J. A. FERNÁNDEZ. *De las Soluciones a la Depreciación Monetaria*: J. A. SÁNCHEZ-ASIAIN. *La Estructura de la Balanza Comercial Española*: J. L. EZCURDIA.

Revista Brasileira de Economia

VOL. 7, NO. 3, SEPTEMBER 1953. *Problemas do Desenvolvimento Econômico: I. Seis Conferências do Professor Arthur F. Burns. II. A Sensibilidade do Sistema Bancário Nacional*: J. KINGSTON.

Revista de Economia

VOL. VI, NO. 3, SEPTEMBER 1953. *Sobre a productividade da indústria no Brasil*: N. F. DE FIGUEIREDO. *Teoria da amostragem e estatística matemática: ensaios de recepçao e ensaios de hipóteses*: G. DE CASTRO. *Prémio de risco e prémio de reserva em seguros de vida*: A. DA C. MIRANDA. *Os impostos pessoais sobre os rendimentos e o imposto complementar*: V. MOREIRA.

El Trimestre Economico

VOL. XX, NO. 3, JULY–SEPTEMBER 1953. *Efectos económicos de ciertas prácticas de cambios múltiples*: J. MARSHALL. *La planificación de Colombia*: A. GARCÍA. *La asistencia técnica transformadora*: A. E. CALCAGNO. *El "Comercio esterior de México" de Miguel Lerdo de Tejada*: R. A. POTASH. *La reforma agraria de Bolivia*: E. FLORES.

The Economic Review (in Japanese)

VOL. 4, NO. 3, JULY 1953. *A Contribution to the Dynamic Theory of International Economics*: H. KITAMURA. *The Trade of Southeast Asia*: Y. ITAGAKI. *The Methodological Framework for Japan's Foreign Trade Policy*: S. TSURU.

VOL. 4, NO. 4, OCTOBER 1953. *Classical Theory of Technical Development*: T. SHIONOYA. *Land Reform and Industrialization in China*: Y. MURAMATSU. *Consideration of the Long-Term Deflators*: R. IOCHI.

The Annals of the Hitotsubashi Academy

VOL. III, NO. 2, APRIL 1953. *Accumulation of Capital in the Japanese Economy*: I. NAKAYAMA. *A Note on "Long Term Changes in the National Product of Japan"*: K. OHKAWA. *The Development of War-time Reproduction Theories in Japan*: K. NONOMURA. *Real and Money Income Multiplier*: M. SHINOHARA. *Interrelations between "Ginme" Bar Silver, the Mexican Silver Dollar, and Foreign Exchange Rates during the Early Meiji Era*: S. YAMAGUCHI. *Are Japanese* Turu *and* Ito *Related to Korean* Turumi *and* Sil *Respectively?*: T. KAMEI. *The "Boxers" in 1898–1899, the Origin of the "I-ho-chuan" uprising, 1900*: Y. MURAMATSU. *The Basic Idea of Fiscal Science*: H. ITO.

Statisztikai Szemle (Hungarian text)

SEPTEMBER 1953. *Let Us Struggle for the Accuracy of Cost Price Calculations in the Building Industry*: A. KÖVESDI-HAJDU. *Reserves for Cutting Turnover Costs in State Retail Trade*: G. PETROSYAN. *The Calculation in Wholesale Prices of Unfinished Production in the Determination of Total Output in Engineering Enterprises*: G. EDELGAUZ. *The New Tasks of Cost Statistics*: L. TUU. *The Position of Technical Statistics in the Building Industry*: G. LÁZI. *Questions of Statistical Analysis of Procurement Enterprises*: O. PALLAGI. *The Classification of Workers and Employees in Planning*: N. ERHARD.

OCTOBER 1953. *Statistics*: K. MIKSZÁTH. *The Reform of Statistical Reporting in the Ministry of Building*: I. HUSZÁR and J. TAR. *On the Method of Selection of Families of Workers, Employees and Collective*

Farmers for the Collection of Household Budget Data : S. POSTNIK
Some Problems in Livestock Statistics : J. ARVAY. *The Conditi*
Required to Ensure the Accuracy of Statistical Reporting by Enterpris
G. BÁES. *Reform of the Statistical Work of the Industrial Section of*
Budapest Municipal Council. Statistical Observation of the Quality
Coal : F. LÁNYI.

Voprosy Ekonomiki (Russian text)

No. 8, 1953. *The Outstanding Events in the History of the Commur*
Party of the Soviet Union (50th anniversary of the II Congress of RSDW.
Some Problems of the Pattern of the Soviet Trade Turnover : P. OREK
OVICH. *Ways to Utilise Internal Reserves in Medium-sized and Sm*
Engineering Enterprises (the Example of the Novosibirsk Factory) :
SACHKO. *The Importance of Up-to-date Techniques for Increas*
Agricultural Production in the U.S.S.R. : N. SHABALIN. *The Conf*
between the Principal Capitalist States for Colonies and Dependent Ter
tories : I. LENIN. *The European Coal and Steel Community and*
Controversities among its Participants : R. TSVYLEV. *The Subj*
Matter of Transport Economics : T. KHACHATUROV. *The Pauperisat*
of United States Farmers : E. SHIFRIN. *The Struggle of the Ker*
People for Land and Freedom : B. ALEXANDROV.

No. 9, 1953. *Towards New Upsurges in the Socialist Economy. T*
Imperialist Struggle for Strategic Materials : A. SANTALOV. *The Eco*
mic Expansion of Western German Monopolies : N. ZHUKOV and
GRIGOREV. *Anglo-American Rivalry in Canada :* V. SUSHCHENI
Works of Russian Manufacturers at the End of the XVIII Century :
STRUMILIN. *Characteristics of the Economic Views of N.I. Ziber :*
TSAGALOV. *Questions of Sector Economics :* M. KAMYSHIN.

No. 10, 1953. *A Magnificent Programme for the Upsurge of U.S.S.*
Agriculture. The Problem of Form and Contents of Various Econon
Categories During Socialism : D. TRIFONOV. *The Tasks of Stockbreedi*
Development : A. SHCHERBAKOV. *Electrification as an Important W*
to Further Strengthen the Material-technical Basis of Agriculture :
KHANKOVSKY. *Agrarian Reform and its Significance in the Developm*
of the Resources of the Chinese People's Republic : V. MASLENNIK
Chronic Unemployment during the General Crisis of Capitalism :
GUTSAYT. *The Struggle for the Further Increase of Agriculture in*
European People's Democracies : V. TIKHOMIROV. *The Struggle of*
Vietnam People for National Independence and Democracy : S. MKH
ARYAN. *Questions of the History of Russian Economic Thought (Disc*
sion on Volume I of A History of Russian Economic Thought *of*
Economic Institute of the Academy of Sciences of the U.S.S.R.). Questic
of the Generalisation of Advanced Production Experience : N. NAROVYANS
and A. ROTSTEIN.

Planovoe·Khozyaistvo (Russian text)

No. 4, 1953. *The State Plan is a Law, Obliged to be Fulfilled. The Plann*
of the Economic Development of Economic Regions : V. KOSTENNIK
The Continual Increase of Labour Productivity in Socialist Productio
M. YAMPOLSKY. *Standardisation and Quality of Production :*
VYATKIN. *The Use of Chemicals in Productive Processes in the U.S.S.*
National Economy : N. MEKROSOV. *Ways to Increase Fish Process*
Production : S. MILHAILOV. *The Work of Regional Planning Comm*
sions : M. URINSON.

No. 5, 1953. *For a Powerful New Increase in Socialist Production and*
Well-being of the People. A Magnificent Programme for the Furt
Increase of Agriculture. The Development of the Energy-Basis of
National Economy during the Five Year Plan : E. RUSSAKOVSI
Complex Mechanisation in Coal and Ore Mining : I. SHEVYAK
Reserves for Cost Decreases in Construction : I. SUPRUNENKO. *Cont*
by the Rouble in the National Economy : V. LAVROV. *The Improvem*
of Economic Work in Local Planning Commissions : Y. CHADAEV.
Planning of Health Services : V. SHUSTOV.

Vestnik Statistiki (Russian text)

o. 3, 1953. *The Law of Planned and Proportionate Development of the*
National Economy : B. SMEKHOV. *On the Method of Selection of Families*
of Workers, Employees and Collective Farmers for the Collection of Budget
Data : S. POSTNIKOV. *The Valuation in Wholesale Prices of Unfinished*
Production in Estimates of Total Production of Engineering Enterprises :
J. EDELGOUS. *Questions of Accounting Production and Consumption of*
Electric Power in Collective Farms : I. BUTORIN. *Methods of Computa-*
tion of Labour Productivity Index-numbers in the Cotton Textile Industry :
V. GORELKIN. *Statistics as a Science :* V. OVSIENKO. *Experience of*
Verifying Accounts and Reporting in Enterprises and Departments :
P. OSIFOR. *Questions of the Direction and Inspection of the Statistical*
Organization of Enterprises and Departments : A. DRUCHIN. *From the*
Experience of the Statistical Inspectorate of Likhosilavsky Rayon, Kalinin
Oblast : A. GARSHOV. *The Census of Vineyards.*

o. 4, 1953. *For a Higher Level in Statistical and Economic Work. Ques-*
tions of the Definition of the Gross Production of Industrial Enterprises :
N. LYUBIMOV. *Statistical Indicators of Livestock Productivity :* A.
BRYANSKY. *On the Subject Matter of Statistics :* V. SOBOL. *On the*
Enumeration of the Migratory Movement of the Population : A. VOSTRI-
KOVA. *From Experience in the Analysis of the Cost of Production in*
Building : V. BELKIN. *Conference on the Statistics of Workers', Em-*
ployees' and Collective Farmers' Budgets..

Finansy i Kredit S.S.S.R. (Russian text)

o. 7, 1953. *Secure the Success of the Flotation of the New State Loan.*
The Development of Trade Turnover and State Bank Credit : V. USHAKOV.
The Clear Execution of Credit-service and Accounting of State Procurement :
G. KOVALENKO. *Improve Rouble-Control of the Movement of Material*
Values : O. KADINSKY. *Eliminate Mistakes in Accounting Building*
Equipment : N. SHUMOV. *Tasks of Postal Tuition for Finance and*
Bank Employees : P. TSVETKOV. *Greater Attention to the Young*
Specialist : M. MIKHAILOV. *Improve the Inspection of Taxation Depart-*
ments : N. ZHDANOV and N. KUZNETSOV. *Review the Norms for Turn-*
over Funds in the Timber Procurement Industry : YU. ROSENTAL. *What*
is Hindering the Development of Personal Insurance ? : A. MULNER.
The State Budget of the Mongolian People's Republic in the Service of
Economic and Cultural Construction : N. TSANKIN.

o. 8, 1953. *Fulfil Successfully the U.S.S.R. State Budget for 1953. The*
U.S.S.R. State Budget for 1953 and the Tasks of the Financial System :
A. ZVEREV. *Ways to Strengthen Bank Control by the Rouble :* U. USOSKIN.
Reserves for Decreasing Costs of Production in Engineering : S. RYUMIN.
The Economic Work of the Industrial Bank of the U.S.S.R. : I. SUPRUN-
ENKO and I. GRINSHPAN. *The Marxist–Leninist Education of Personnel*
in the Central Offices of the U.S.S.R. Ministry of Finance : G. TEPLOV.
The Budget of the Polish People's Republic is a Budget of Peaceful Socialist
Construction : V. GENERALOV. *The French Franc in Danger of a*
New Devaluation : M. POLYAKOV.

o. 9, 1953. *Republican and Local Budgets for 1953 and the Tasks of*
Finance Departments. The New Law on the Agricultural Tax : V.
GARBUZOV. *Fulfil the R.S.F.S.R. 1953 Budget in Time :* I. FADEEV.
The Soviet Rouble is the Valuta for Prices and Accounts in the New World
Market : I. ZLOBIN. *The Improvement of Economic Work is the Basis*
for a Further Strengthening of Bank Control by the Rouble : V. KULMANOV
and V. LOVTSOV. *Reserves for Expanding the Construction of Enter-*
prises Producing Consumer Goods : V. DYADIN. *The Effectiveness of*
Credit Accounts in the National Economy : A. IVANOV. *Rouble Control*
in State Farms in the Struggle for the Lowering of Production Costs :
M. NESMY.

o. 10, 1953. *The Further Increase of Agriculture and the Tasks of the*
Financial-credit Systems. U.S.S.R. State Budget Expenditures during

the Post-war Period : K. PLOTNIKOV. *To Collaborate Actively in Increasing the Production of Mass Consumption Goods :* V. PROBEKHIN. *Pay More Attention to Private Housing :* G. KUTUROV. *The Chinese National Bank and the Economic Progress of the Chinese People's Republic :* A. ZIKOV and B. SEMILOV. *The Balance of Money Incomes and the Expenditure of the Population :* N. MORGOLIN. *The Financial Indebtedness of Western Germany to American Capital :* R. LOGOVINSKAYA.

Probleme Economice (Rumanian text)

VOL. VI, NOS. 5–6, MAY–JUNE 1953. *Speech at the Closing Session of the Supreme Soviet of the U.S.S.R. :* G. M. MALENKOV. *The Economic-Organisational Security of Collective Farms, One of the Tasks for the Development of Agriculture :* GH. VICIU and I. POPESCU. *For a Further Development of the Timber, Paper and Cellulose Industry :* M. SUDER. *For an Even Fulfilment of Production Programmes in the Metallurgical Industry :* C. LONCEAR. *The Generalisation of Internal Factory Cost Accounting, a Way to Improve Further the Work of Our Enterprises :* A. TANASE. *The Uninterrupted Progress of Technology in the U.S.S.R. :* L. MARCOVICI. *The Korean People in the Struggle for the Reconstruction of their Country :* P. BRUDARU. *The Decline of the French Economy Since the Second World War :* F. DUCA.

Plánované Hospodářstvi (Czech text)

NOS. 7–8, 1953. *The Tenth Congress of the C.P.C. and the Socialist Industrialisation of Slovakia :* J. BRÁNIK. *For a Correct and Timely Establishment of the State Plan for 1954 :* D. SCHEJBAL and L. NEČAS. *For the Further Mechanisation of Building :* P. STAHL. *The New Book-keeping Accounts are an Efficient Way to Plan Production Costs :* B. KLIČKA. *The Preparation and Training of Personnel in Production :* B. VOBORNÍK. *Correct Accounts and Statistics, a Necessary Condition for Checking Plan Fulfilment :* F. HERBST.

NEW BOOKS

British

BEVERIDGE (LORD). Power and Influence. An autobiography. London : Hodder & Stoughton, 1953. 9″. Pp. vii + 448. 30*s*.

[To be reviewed.]

BEVERIDGE (W. I. B.). The Art of Scientific Investigation. Second edition. London : Heinemann, 1953. 9″. Pp. ix + 176. 10*s*. 6*d*.

[This is the second edition of a book first published in 1950. In it the author, who is Professor of Animal Pathology in the University of Cambridge, describes with great clarity and vividness the methods of scientific research, particularly as applied to experimental biology. No specific attempt is made to apply the principles enunciated to research in social studies, but the author's wide reading and skill in exposition make his work of interest to a much wider circle of readers than those to whom it is primarily addressed.]

BIGG (W. W.) and BEATTIE (C. N.) (Eds.). Ranking, Spicer & Pegler's Mercantile Law, incorporating Partnership Law and the Law of Arbitration and Awards. 9th Edition. London : H.F.L., 1953. 9″. Pp. 422. 21*s*.

[The present edition has been revised to take account of recent developments in case law. The book has also been reset in a new format, which has made possible a substantial reduction in price.]

BRAY (F. SEWELL). Four Essays in Accounting Theory. London : Oxford University Press, for the Incorporated Accountants Research Committee, 1953. 8½″. Pp. 94. 15*s*.

[Mr. Bray here reprints four lectures given during 1951–52, his titles being "Accounting Principles," "Company Accounting," "Accounting and Statistical Relationships" and "Accounting Form." For the most part, the ideas expounded in this book will be familiar to anyone acquainted with Mr. Bray's other published work, with quotations from which, incidentally, these lectures are generously larded. Indeed, not only do they embody much of the author's earlier work; they also overlap and repeat each other. The book constitutes a set of variations on a single theme, which is expressed in the following passage : "I think most of us will admit there is a fair degree of regularity and system in economic life. It is this regularity and system which we have to transpose in terms of accounting forms. As a consequence it is the classification of transactions into formal categories which is important and not necessarily the transactions themselves. The more woolly our notions of regularity and system the more complicated and manifold will be our categories and therefore the more diverse and incomprehensible will be our design of accounts. The more clear-headed and fundamental our understanding of these things the fewer will be our categories and therefore the simpler and more straightforward will be our forms of account." It is the prerogative of a highly developed science like physics to be constantly reducing the number of its categories and expanding the scope of its syntheses. Is Mr. Bray right in borrowing Schroedinger's views about physics and applying them to accounting? Or is it premature to look too hard for a philosopher's stone in accounting, when what is really needed is development and growth from which alone, in due time, a significant synthesis can emerge?]

BRITISH INSTITUTE OF MANAGEMENT. Education and Training in the Field of Management. London : British Institute of Management, 1953. 9″. Pp. 200. 7*s*. 6*d*.

[The British Institute of Management has attempted in this survey to describe all academic courses available in this country which can be regarded as being within the field of Education for Management. In the first two sections of the book courses at twenty-six Universities and their associated Colleges of Technology and at one-hundred and ninety Technical and Commercial Colleges and Colleges of Further Education are listed. In the third section an account is given of the management subjects included in the examinations of professional and educational bodies. In deciding which courses to include in this survey, the British Institute of Management has had to use a considerable measure of discretion, especially where Universities are concerned. It has taken the view that all courses in subjects which are included in the British Institute of Management's own Certificates in Management Studies should be mentioned, even though there may be no intention of teaching these subjects with a management "slant" in the institutions concerned. As a result of this policy, courses in economics, commerce, the social sciences and public administration have all been included in this survey. Although opinions will differ about whether or not certain items should have been included, there is no doubt that this is on the whole a useful hand-book which satisfies a long-felt need. It is intended that it should be followed up with further studies describing courses offered at Adult Education Colleges, the conferences, courses, summer schools and other educational activities of professional and other bodies, and the training schemes and courses organised by trade associations, trades unions and individual firms.]

CAIGER (G.) (Ed.). The Australian Way of Life. London : Heinemann, 1953. 9″. Pp. v + 158. 12*s*. 6*d*.

[This is the first of a projected series of volumes prepared under the auspices of the International Studies Conference, on the request and with the financial assistance of UNESCO. The chapters comprising this book are as follows : "The Australian Nation," by Sir F. W. Eggleston; "The Family," by W. D. Borrie; "The Educational System," by K. S. Cunningham; "Political Institutions and Aspirations," by P. H. Partridge; "Economic Institutions and Aspirations," by G. L. Wood; "Religious Institutions and Aspirations," by Rev. K. T. Henderson; and "The Australian People and the World," by F. Alexander.]

CALPIN (G. H.) (Ed.). The South African Way of Life. London Heinemann, 1953. 9″. Pp. v + 200. 12*s*. 6*d*.

[The first half of this book is occupied with chapters on the various racial groups that form the population of the Union, each written by a representative of or expert on the group in question. The latter part deals with political economic and social questions in more general terms. The long chapter on economic factors is by Professor Jan Goudriaan and Professor D. G. Franzsen.]

CAVENAGH (W. E.). Four Decades of Students in Social Work. University of Birmingham Studies in Economics and Society, Monograph B 1. Birmingham: Faculty of Commerce & Social Science, 1953. 10″. Pp. 97. 12*s*. 6*d*.

[This is a roneo-ed record of the experience of Birmingham University in education for social work by a combination of practical experience, academic teaching, discussions and examinations. Mrs. Cavenagh herself, who combines the offices of tutor in practical work in the university and chief welfare officer of the Ministry of Labour, is uniquely placed to appraise the results. From 1909 to 1949 the number who have passed the examinations has been 593; not quite a quarter of all students left without a qualification. Many of both classes could not be traced; in all, contact was established with 64% of those who qualified and 48% of the failures and withdrawals. The study throws much light both on the family backgrounds and on the subsequent work of those trained. The wastage has been high; of women who passed 56% were employed in 1950; 94% of the men. Of women who dropped out, 63·5% did so after marriage. Full detail is given of marriage partners, size of families and so on. Only about 13% of all women put in a normal working life before retirement. The report throws very interesting light on the changing origins and backgrounds of the students, the extent to which their training has been subsidised and the growing "professionalism" of certain activities.]

COLE (G. D. H.). An Introduction to Trade Unionism. London: Allen & Unwin, 1953. 8½″. Pp. 324. 18*s*.

[To be reviewed.]

COLE (H.) and SHANKS (M.). Policy for the Sterling Area. Fabian Tract No. 293. London: Fabian Publications and Gollancz, 1953. 8½″. Pp. 32. 1*s*. 3*d*.

[The policy recommended by the authors includes the adoption of tighter import controls by sterling-area countries and the endeavour to bring about greater self-sufficiency within the area. The suggestion is made that a more formal central authority should be set up with a view to co-ordinating policy and strengthening discipline amongst members of the area. The authors have some interesting things to say on the desirable directions for long-term investment in the sterling area, and on the importance of making membership of the area attractive not merely to the dominions but also to colonial dependencies that may attain political independence in the future.]

COLLIER (A.). The Crofting Problem. Social and Economic Studies, I. London: Cambridge University Press, for the Department of Social and Economic Research, Glasgow University, 1953. 9½″. Pp. ix + 191. 25*s*.

[To be reviewed.]

DEANE (P.). Colonial Social Accounting. National Institute of Economic and Social Research, Economic and Social Studies, XI. London: Cambridge University Press, 1953. 9½″. Pp. v + 360. 50*s*.

[To be reviewed.]

ELLIS (A.). Bold Adventure. London: National Provincial Bank, 1953. 8″. Pp. 26.

[A popular illustrated history of the National Provincial Bank.]

FEDERATION OF BRITISH INDUSTRIES. Estate Duty and the Family Business. London: Federation of British Industries, 1953. 9″. Pp. 15. 1*s*. 6*d*.

[The chief purpose of this booklet is to set forth the grounds for the F.B.I.'s contention that the method of estate valuation laid down by Section 55 of the Finance Act 1940 imposes an inequitable burden on certain classes of private companies.]

FORD (P.), and FORD (G.). Select List of British Parliamentary Papers, 1833–1899. Oxford: Basil Blackwell, 1953. 10″. Pp. v + 165. 27*s*. 6*d*.

Hansard's Catalogue and Breviate of Parliamentary Papers 1696–1834. Reprinted in Facsimile. With an Introduction by P. FORD and G. FORD. Oxford: Basil Blackwell, 1953. 13″. Pp. 220. 40*s*.

[In 1951 Professor and Mrs. Ford, with a team of research workers, published *A Breviate of Parliamentary Papers, 1917–1939*, the value of which, as preliminary work of reference, was emphasised by Mr. Asa Briggs in a review in the issue of this JOURNAL for December 1952. Their earlier work is now supplemented by two further volumes. The first is a photographic reprint of the very valuable but generally inaccessible *Hansard's Catalogue and Breviate of Parliamentary Papers, 1696–1834*, covering the important period down to the end of the unreformed Parliament. The *Select List of Parliamentary Papers, 1833–1899* applies to all but eighteen years of the intervening period the same system of selection and arrangement which had been followed in the volume of 1951. All research workers using this material will have good reason to be perennially grateful to the industry of Professor and Mrs. Ford and their co-workers.]

FORD (P.) and THOMAS (C. J.). Shops and Planning. The second report of the Southampton Survey. Oxford: Basil Blackwell, 1953. 8½″. Pp. 54. 4*s*.

[This report is intended to cast light, first, on the question whether Southampton is "over-shopped," and, secondly and more generally, on the criteria to be followed in the allocation of space for shops in New Towns and in new municipal estates. On the basis of figures collected for the Census of Distribution the authors conclude that the norm laid down by the New Towns Committee of one shop per 100 to 150 inhabitants is much too low. A sample survey carried out by the authors in Southampton leads them to the conclusion that competition in retailing is less imperfect than is often supposed. They also give evidence to show that "dispersed shops," that is to say shops not in main shopping centres, still have an important part to play, and they suggest that town planners should have greater regard to this, as to other economic aspects of retailing.]

FORD (P.) and THOMAS (C. J.). Housing Targets. The third report of the Southampton Survey. Oxford: Basil Blackwell, 1953. 8½″. Pp. 56. 4*s*.

[This survey is based chiefly on the 1% sample figures of the Census of 1951. On the basis of certain housing standards which they lay down, the authors compare the number of dwellings of different sizes in existence in Southampton in 1951 with those needed in the light of the number and composition of households. The result is to show a large deficiency of small houses (especially three-roomed houses) and a smaller but still substantial surplus of larger houses (especially five-roomed houses). Estimates of prospective housing needs in 1962 and 1971 are added on similar principles, and the method is then applied to the housing needs of Great Britain as a whole. The results for Great Britain are found to resemble broadly those for Southampton. It is computed that at the current rate of building the 1962 target should be reached by about 1959. The survey contains much other interesting material in addition to the calculations described.]

FULFORD (R.). Glyn's 1753–1953. Six generations in Lombard Street. London: Macmillan, 1953. 9″. Pp. v + 267. 21*s*.

[To be reviewed.]

FUSSELL (G. E. and K. R.). The English Country-Woman. A farmhouse social history, A.D. 1500–1900. London: Melrose, 1953. 9½". Pp. v + 221. 30*s*.

[The compilers of this work, the first-named of whom is already well known as the author of *The Farmer's Tools*, have, in effect, produced an anthology of the activities, *in rure*, of the sex feminine. In this enterprise they have inevitably been compelled to draw heavily upon contemporary sources, but in certain sections, *e.g.*, those covering the seventeenth and eighteenth centuries, the proportion of matter quoted *verbatim* (on many occasions half a page of more) seems unduly high; the excerpts are, however, well selected and diversified. The book opens with a short account of the Tudor landscape and its agrarian economy. Then follow seven Chapters, covering successively the Elizabethan, the Cavalier and Puritan, the Restoration, the Georgian, the Regency, and the Victorian eras. There are many excellent illustrations, reproduced, in the main, from familiar sources and augmented by nineteenth-century photographs. Incidentally, great praise is due to Geoffrey Fraser for his most attractive decorations on the dust-cover and chapter-heads. An excellent bibliography and a meagre index complete a work which historians and economists will accept as a fair introduction for the general reader desirous of knowing something about the manner in which his, or her, forebears lived and laboured.]

GEARY (H. V. R.). The Background of Business. London: Oxford University Press, 1953. 7½". Pp. 224. 9*s*. 6*d*.

[This is designed as a text-book for students of commerce. The author describes the structure of the joint-stock company and other forms of business undertaking, the capital market, management and accounting, and then passes on to deal with commercial activities in the stricter sense, treating in turn international trade, wholesale trade and retail trade. His book will provide a useful source of reference for university students of economics who wish to inform themselves on the institutional background of business in greater detail than is usually provided in their text-books.]

HANSEN (A. H.) and CLEMENCE (R. V.). Readings in Business Cycles and National Income. American Economic Association Series. London: Allen & Unwin, 1953. 8½". Pp. v + 588. 30*s*.

[Reviewed in this issue.]

HARROD (R. F.). The Dollar. Sir George Watson Lectures 1953. London: Macmillan, 1953. 7½". Pp. v + 156. 9*s*. 6*d*.

[To be reviewed.]

THE INSTITUTE OF ACTUARIES. Yearbook 1953–1954. London: Cambridge University Press for the Institute of Actuaries, 1953. 8½". Pp. 335. 2*s*. 6*d*.

[A feature of this year's edition is the inclusion of a portrait of the mathematician Abraham de Moivre, the bicentenary of whose death falls in 1954, and an article on his part in the foundation of actuarial science. The usual full particulars are included on the activities of the Institute during the year.]

INTERNATIONAL ASSOCIATION FOR RESEARCH IN INCOME AND WEALTH. Bibliography on Income and Wealth, Volume III, 1950. Edited by Phyllis Deane. Cambridge: Bowes & Bowes, 1953. 10". Pp. 66. 37*s*. 6*d*.

[With the publication of its third volume, this admirable annotated bibliography assumes what will presumably be its permanent form, with each volume dealing with one year's publications. 435 items are listed, and the notes maintain the high standard established in the first two volumes.]

INTERNATIONAL ECONOMIC ASSOCIATION. International Economic Papers No. 3. Edited by A. T. Peacock, R. Turvey and Elizabeth Henderson. London: Macmillan (New York: The Macmillan Co.), 1953. 10". Pp. 255. 15*s*.

[Reviewed in this issue.]

JAMIESON (A. B.). Chartered Banking in Canada. Toronto: The Ryerson Press, 1953. 9". Pp. v + 394. $5.

[This book is primarily though not exclusively addressed to those who are engaged in the business of banking in Canada. In the first part the author surveys the history of banking in Canada since the earliest times. In the second part he describes and analyses current banking practice. The emphasis throughout is on practical operation, and no attempt is made to deal with theoretical issues. The author is a retired official of the Royal Bank of Canada.]

KENDALL (M. G.). Exercises in Theoretical Statistics. With answers and hints on solutions. London: Charles Griffin, 1954. 9". Pp. v + 179. 20*s*.

[Professor Kendall has filled another intense, if not long-felt, want; he has collected together 400 highly instructive exercises in theoretical statistics, culled in part from the examination papers of the universities of Cambridge, London, Manchester and Oxford and of the Diploma of the Royal Statistical Society. These exercises relate to the fields of distribution theory, sampling, statistical relationship, estimation and inference, and time series. Within each division of the subject they have been arranged in the approximate order both of the development of the ideas concerned and of increasing difficulty. The problems are designed for the serious and advanced student of statistics, and the welcome inclusion of both answer and hints for each exercise will be of assistance not only to those who read alone, as Professor Kendall hopes, but also to the ageing and possibly slightly weary student who is endeavouring to teach others.]

KIRBY (E. S.). Introduction to the Economic History of China. London: Allen & Unwin, 1954. 9". Pp. 202. 18*s*.

[To be reviewed.]

KUPER (L.) and others. Living in Towns. Selected research papers in urban sociology. London: The Cresset Press, for the Faculty of Commerce and Social Science of the University of Birmingham, 1953. 9". Pp. v + 370. 21*s*.

[To be reviewed.]

LITTLE (I. M. D.). The Price of Fuel. London: Oxford University Press, 1953. 8½". Pp. ix + 197. 12*s*. 6*d*.

[To be reviewed.]

MCNEILL (W. H.). America, Britain and Russia, Their Co-operation and Conflict, 1941–1946. Survey of International Affairs, 1939–1946. London: Oxford University Press, under the auspices of the Royal Institute of International Affairs, 1953. 9½". Pp. v + 819. 63*s*.

[To be reviewed.]

MANN (F. A.). The Legal Aspect of Money, with special reference to comparative, private, and public international law. 2nd Edition. London: Oxford University Press, 1953. 9". Pp. v + 488. 50*s*.

[This is the second edition of a comprehensive treatise first published in 1938. It has now been revised in the light of subsequent contributions to the subject, and substantial additions have been made to take account of the establishment of the I.M.F., the extension of exchange control and changes in the valuations of different national currencies.]

MANVELL (R.). On the Air. A study of broadcasting in sound and television. London: André Deutsch, 1953. 8½". Pp. v + 196. 16*s*.

[This book contains a survey of systems of sound and vision broadcasting in various countries and a discussion of the artistic and social questions involved by the development of these media of mass communications. While the author's

treatment of the economic and social aspects of broadcasting is not, on the whole, particularly original or closely reasoned, he has some interesting things to say about the art and technique of broadcasting, and he writes in an easy readable style. Dr. Manvell is well known as a film critic.]

MEADE (J. E.). Problems of Economic Union. London: Allen & Unwin, 1953. 8½". Pp. 102. 9*s*. 6*d*.

[To be reviewed.]

MENDENHALL (T. C.). The Shrewsbury Drapers and the Welsh Wool Trade in the XVI and XVII Centuries. London: Oxford University Press, 1953. 9". Pp. v + 248. 21*s*.

[To be reviewed.]

MINKES (A. L.). An International Census of Manufactures. Duplicated for private circulation, London School of Economics, 1953. Pp. 107. (Available from the author.)

[This paper, with a slightly misleading title, contains a set of tables compiled from pre-war industrial censuses of nine European countries and the U.S.A., with a short explanatory note. The countries covered include the United Kingdom, the U.S.A., the three Scandinavian countries, Finland, Italy, Bulgaria, Hungary and Roumania. The information relates to a year between 1937 and 1939, except for the United Kingdom. Fifty-seven individual industries are distinguished, grouped into ten orders or major industrial groups. For each order, with appropriate subdivisions, there are nine tables giving such information as the number of persons employed; the value of net output in national currencies and in "dollar equivalent"; installed horse-power in total and per person; net output per person and per unit horse-power in dollar equivalent. The United Kingdom data refer to 1930, presumably because this is the last year for which horse-power data are available. This is to be regretted, since horse-power data do not enter into all the tables, and comparison between the United Kingdom and other countries is largely invalidated. The author's main contribution is the manipulation of the primary data in two respects: first, he has tried to fit the national statistics into his own standard industrial classification; second, he has converted national currencies into so-called dollar equivalents to make them internationally comparable. It is not clear from the explanatory notes how far he has attempted to adjust figures of employment, net output and the like to a comparable definition. For horse-power he explains that he has used three different definitions according to availability of data. In the case of employment he states that handicraft is excluded; but only in the case of the United Kingdom is it stated that small firms with less than ten employees are also excluded. For the scope of the Census the reader is left to consult the original sources. The dollar equivalents, as the author confesses, are subject to considerable doubt. What he has done is to compile a purchasing parity rate of exchange for all European currencies in terms of sterling (a most tricky proposition); these were then converted into dollars at the official sterling rate of exchange—a very doubtful procedure. Apart from a few broad conclusions, the author provides no analysis of his material. Without it one cannot detect inconsistencies in the statistical compilation, test the usefulness of concepts used or of the classification applied. Even a superficial inspection of the tables suggests that some of the results, such as the enormous variations in net output per person in a Finnish–Danish comparison, may be spurious. The tables will save research workers a good deal of preliminary labour; but they will be well advised to regard them as material in need of further treatment and refinement.]

MISES (L. VON). The Theory of Money and Credit. New edition, enlarged with an essay on Monetary Reconstruction. London: Jonathan Cape, 1953. 9". Pp. 493. 28*s*.

[This is a new edition of a book which in its German original goes back to 1912. This edition follows almost without change the original English translation of 1934, but adds, after p. 410 of the old (and now) edition, a new section of about fifty pages entitled "Monetary Reconstruction." The three chapters which compose this section deal respectively with "The Principle of Sound Money" "Contemporary Currency Systems"—the inflexible gold standards, the flexible standard, the freely vacillating currency, the illusive standard; "The Return to Sound Money." Some concluding remarks are in Prof. von Mises' best vein: "The suggested reform of the currency system and the return to sound monetary conditions presuppose a radical change in economic philosophies. There cannot be any question of the gold standard as long as waste, capital decumulation, and corruption are the foremost characteristics of the conduct of public affairs."]

MORRIS (S. T.) and LUXTON (H. W. B.). An Economic and Financial Survey of Farming in the South West of England. Bristol: Department of Economics, University of Bristol, 1953. 8½". Pp. 68. 5*s*.

[This report is the fourth in a series based on the Farm Management Survey. Costs, production and net income in a sample of farms in Cornwall, Devon and Dorset are studied in detail for the crop years 1950 and 1951, and briefer comparisons are made with results since 1947.]

NATIONAL INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH. Register of Research in the Social Sciences in progress and in plan and Directory of Research Institutions. No. 10, 1952–3. London: Cambridge University Press, 1953. 10". Pp. 213. 25*s*.

[This year's edition of the register follows closely the lines established in earlier issues, and maintains the accustomed high standard of accuracy and usefulness.]

PAREKH (H. T.). The Bombay Money Market. London: Oxford University Press, 1953. 9". Pp. v + 226. 18*s*.

[The author, a graduate of London University, has provided a full and detailed account of the Bombay money market, including such features as the handling and rediscount of *hundis* and the dealings in gold and silver, as well as more familiar money-market practices. He regards the market as "on the whole well integrated" and able to lend, therefore, at relatively lower rates and to handle without difficulty the normal and orderly movements of funds within Bombay itself. More distant movements, apart from those to Calcutta, are impeded by bad communication, so that in markets outside those two cities much higher rates often rule. In both this and other respects things might be better if more funds were normally available for use by the market.]

PLANT (SIR ARNOLD). The New Commerce in Ideas and Intellectual Property. The Stamp Memorial Lecture, 1953. London: The Athlone Press, University of London, 1953. 8½". Pp. 36. 2*s*. 6*d*.

[Sir Arnold Plant here considers the economics of our copyright laws in relation to modern developments in mass communications. He argues in favour of the maintenance and extension of the principle now present in limited form in British legislation by which a distinction is drawn between the copyright protection enjoyed by the author of a work and that enjoyed by its publisher. He suggests that a shortening of the publisher's period of monopoly is desirable, notwithstanding certain recommendations in the opposite sense made at the International Conference in Brussels in 1948. Sir Arnold then goes on to consider the complicated network of copyright restrictions affecting gramophone records. He argues that the pressure exerted by the Musicians' Union upon the gramophone companies to discourage public performances of their records can and should be prevented by simply removing the legal authority of the record companies to control the use made of their records. After some brief remarks on the related issue of the relaying of B.B.C. programmes in public places, Sir Arnold suggests in conclusion that the most promising way of overcoming the financial difficulties of television lies in the further development of the "scrambler" system of diffusion, by which it is possible to levy charges on viewers of particular programmes.]

PIGOU (A. C.). Alfred Marshall and Current Thought. London: Macmillan, 1953. 7½". Pp. v + 85. 7*s*. 6*d*.

[This little book includes the three Marshall Lectures which Prof. Pigou delivered in 1952, and a separate paper on the Trade Balance. The main theme of the lectures was "what, if he could return to earth, Marshall would think of

our present goings on." None of Marshall's pupils alive to-day could speculate with greater authority on these questions. On mathematical economics, according to his interpreter, Marshall, a former second wrangler to Lord Raleigh, would have been very sceptical and fearful that it would have led to unrealities. The new plethora of statistics would on the whole have pleased him, with the safeguard that not all the relevant data of economics can be expressed statistically. He would have welcomed with open arms much of what has been done to fill the empty economic boxes with solid calculations of elasticities. On the rate of interest as applied to long-term analysis in the *Principles* he would probably "have held that Keynes had simply misunderstood him." On utilities, he would probably say to-day, as when alive, that "the happiness of the rich man does not exceed that of the poor man nearly in proportion to the difference in their commands over material wealth." On socialism, he would have been torn between welcoming State pressure towards more even distributing and condemning considerable inroads of Government into industry. In all, Prof. Pigou's undimmed admiration for his master shines out: the final picture he gives is of "a mixture of philanthropist and scientist, with the philanthropist always struggling, not always struggling successfully, to keep the scientist in order."]

REGISTRAR OF BANKS, UNION OF SOUTH AFRICA. Seventh Annual Report. Period ended 31st December, 1952. Pretoria: The Government Printer, 1953. 13". Pp. 40. 5*s*. 6*d*.

SELF (P.). The Planning of Industrial Location. London: University of London Press, for the Town and Country Planning Association, 1953. 8½". Pp. 47. 2*s*. 6*d*.

[The subject of this pamphlet is the relation between the problems of industrial location and town and country planning. The author argues that the aim of attracting industry to areas with higher than average unemployment rates—which, in his view, is what the development areas policy has really amounted to—provides a very inadequate criterion of good policy and may even conflict with sound planning. As an example he instances the attraction of new industry to Merseyside and Clydeside, areas which on planning grounds represent excessive concentrations of population in need of dispersal.]

SLEEMAN (J. F.). Basic Economic Problems. A Christian Approach. London: S.C.M. Press, 1953. 8½". Pp. 192. 10*s*. 6*d*.

[This book is extraordinarily difficult to describe or appraise. Mr. Sleeman writes as a Christian for Christians. He is anxious to examine and explain just how a Christian economic order would differ from a non-Christian economic order. But the book is not wholly successful in achieving his purpose. It somehow fails to go to the roots of matters, in the way, for instance, that Archbishop Temple's *Christianity and the Social Order* managed to do. Very properly the book is full of the value judgments that a Christian might wish to import into his own economic thinking. But it is arguable that the author would have been more successful if he had devoted less attention to a general survey, with a Christian tinge to it, of the whole range of economic problems and had devoted more of his space to the special values and value judgments that a Christian should wish to emphasise. As it is, even a reader who has great potential sympathy with his outlook may remain puzzled as to whether there is a specifically Christian answer to the rival merits of planning and *laisser faire*, or to monetary controls as opposed to physical controls. And he may be still more puzzled as to the moral and intellectual processes by which we should seek to establish value judgments in a field that is simultaneously moral and technical.]

SOCIALIST PARTY OF GREAT BRITAIN. Questions of the Day. Fourth edition revised. London: Socialist Party of Great Britain, 1953. 7". Pp. 123. 1*s*.

[This provides a general survey of the policy and history of the S.P.G.B. The characteristic feature of its doctrine is that it is extremely left-wing but hostile to the U.S.S.R.]

UNIVERSITY OF BRISTOL, DEPARTMENT OF AGRICULTURAL ECONOMICS. An Economic Survey of Farming in an Area of South Devon in 1950. A second report on a study of the organisation and financial results on 194 farms in 18 parishes. 13". Pp. 71. 3*s*. General Report on the Investigation into the Economics of Milk Production in the South West Province, 1951–52. 13". Pp. 29. 2*s*. Some Economic Aspects of Store Cattle Rearing in Devon and Cornwall in 1951–2 and 1952–3. By V. H. BEYNON and E. T. DAVIES. 13". Pp. 39. 3*s*. Newton Abbot: Department of Economics, University of Bristol, 1953.

UNIVERSITY OF READING, DEPARTMENT OF AGRICULTURAL ECONOMICS. Costs and Returns of Barley Production on 23 Farms in the South of England in 1951–52. By I. G. REID. 10". Pp. 5. 2*s*. Costs and Returns from Milk Production in the Southern Province in 1951–52. By R. S. COOK. 10". Pp. 22. 2*s*. Financial Results of 29 Poultry Flocks in Southern England during 1951–52. By J. A. MOLLETT. 10". Pp. 18. 2*s*. Reading: Department of Agricultural Economics. University of Reading, 1953.

UTTING (J. E. G.). Social Accounts of Local Authorities. National Institute of Economic and Social Research, Occasional Paper No. XVI. London: Cambridge University Press, 1953. 9½". Pp. v + 89. 16*s*.

[To be reviewed.]

WILLAN (T. S.). The Muscovy Merchants of 1555. Manchester: Manchester University Press, 1953. 8½". Pp. v + 141. 16*s*.

[To be reviewed.]

WILLIAMS (T. I.). The Chemical Industry, Past and Present. London: Penguin Books, 1953. 7". Pp. 192. 2*s*.

[The scope of this book is scientific rather than economic. The author traces the development of the chemical industry in Britain from the earliest times and its relation to the growth of scientific knowledge. He then goes on to describe the various types of product made by the industry at the present time.]

WILSON (H.). Social Ownership in Britain's Fight for Independence. The Thirteenth Blandford Memorial Lecture. Leicester: Co-operative Co-partnership Propaganda Committee, 1953. 7½". Pp. 14. 6*d*.

[The author discusses the future of social ownership with special reference to its relation to the co-operative movement.]

Indian

BASU (S. K.). Industrial Finance in India. A study in investment banking and state-aid to industry with special reference to India. Third edition. Calcutta: University of Calcutta, 1953. 10". Pp. 467. Rs. 12/-.

[This book ranges rather more widely than its title would suggest. Its main objective is the improvement of methods of industrial finance in India, but as a means to that end the author studies critically the methods used in other countries, including Germany, Australia, Japan, Central Europe, as well as recent trends in the United Kingdom. The book includes a very interesting and valuable re-appraisal of the managing agency system, to which the author attributes great value at various stages in Indian development, but also serious defects in some cases. He gives a useful account of the recent work of the Industrial Finance Corporation of India. It is, perhaps, a pity that at the end of the book the author makes no attempt to pull together his various ideas and conclusions or to give a reader a clear impression of where he thinks the greatest opportunities for improvement are to be found.]

GADGIL (D. R.) and PATIL (R. K.). Gold and Silver Thread Industry in Surat. Surat: Sarvajanik Education Society, 1953. 8½". Pp. 69. Rs. 1/8.

[A study of a depressed industry whose markets have been seriously affected by the partition of India.]

INDIAN NATIONAL CONGRESS. The Sixth Year of Freedom, August 1952–August 1953. New Delhi: All India Congress Committee, 1953. 9½". Pp. 185. Rs. 3/-.

[A popular account of Indian development in 1952–53, which includes information about progress with the various valley projects, with other parts of the five-year plan, and industry and agriculture generally.]

KRISHNASWAMI (O. R.). Essentials of Commerce. Madras: Theagaraya Publications, 1953. 7½". Pp. 332. Rs. 4/8.

[A small text-book, designed to cover the syllabus of the University of Madras on "elements of commerce" at the I.Com. level. It deals first with the basic ideas, and goes on to industrial organisation, the comparison of different types of business unit, credit, banking, sales, transport, distribution and trade promotion.]

LALWANI (K. C.) (Ed.). Labour Economics. Handbooks on Economics & Commerce, No. 6. Calcutta: Mandir, 1953. 7½". Pp. 240. Rs. 6/4.

[This is a new addition to the series of Handbooks on Economics and Commerce edited by Kastur Chand Lalwani. It deals with a wide range of problems, including the supplies and efficiency of labour, industrial health, wages and methods of payment, trade unions, industrial disputes, social security, unemployment and labour legislation.]

RANGNEKAR (D. K.). Agricultural Finance in India. Bombay: Co-operators' Book Depot, 1952. 9". Pp. 241. Rs. 15/-.

[This very thorough small study, by an economist on the staff of *The Times of India*, was by origin an M.Com. Thesis of the University of Bombay. The author recognises the importance of Co-operative Societies as the main instruments of lending, but rightly studies how their limited resources can be enlarged through the banks and other institutions.]

RESERVE BANK OF INDIA. Trend and Progress of Banking in India. Annual Report for 1952 under Section 36 (2) of the Banking Companies Act, 1949. Bombay: Reserve Bank of India, 1953. 9½". Pp. 100. 6*s*.

[This annual report of the Reserve Bank of India includes tables covering all the main monetary phenomena, down to the end of 1952. During the year, which is described as "less strenuous for banks," there was a reduced volume of bank credit in general and a reduced dependence on Reserve Bank Credit. But the Reserve Bank looks forward to increased need for such assistance as the five-year plan leads to greater needs for working capital by private industry and trade.]

SAHNI (J. N.). Indian Railways, One Hundred Years, 1853 to 1953. New Delhi: Ministry of Railways, Government of India, 1953. 11". Pp. 200. 25*s*.

[A handsomely printed and illustrated volume, addressed rather to railway enthusiasts than to economists, but containing, none-the-less, a great deal of information about the history and present activities of the Indian railways.]

Statistical Outline of India, 1953. Bombay: Department of Economics and Statistics, Tata Industries, 1953. 6½". Pp. 46.

[A small pocket-book of essential statistical data relating to India, including national income, population, resources, industrial production, labour, foreign trade, banking, finance, prices, the five-year plan and so on. It will be of added interest to some of us as yet another example of the ever-wider adoption of Gill Sans type for statistical work since it was first used in the Central Statistical Office very early in the last war.]

American

ALLEN (R. G. D.) and ELY (J. E.) (Eds.). International Trade Statistics. New York: John Wiley (London: Chapman & Hall), 1953. 9". Pp. v + 448. 54*s*.

[To be reviewed.]

BAKKEN (H. H.). Theory of Markets and Marketing. Madison, Wisconsin: Mimir Publishers, 1953. 9½". Pp. 362.

[To be reviewed.]

BAKKEN (H. H.). The Marketing and Manufacturing of Wisconsin Stemming Tobacco. Research Bulletin No. 162. Madison, Wisconsin: University of Wisconsin, 1949. 9". Pp. 16.

[A study of marketing structure and price and production trends in the declining industry of scrap chewing tobacco manufacture.]

BAKKEN (H. H.) and MUELLER (W. F.). The Market for Wisconsin Binder Leaf Tobacco. Research Bulletin No. 181. Madison, Wisconsin: University of Wisconsin, 1953. 9". Pp. 47.

[This monograph is concerned to assess the effectiveness of competition in a market in which oligopsonistic elements are strong. The situation is much complicated by the government price-support programme, which has had a major influence on prices in recent years.]

BARLOW (E. R.). Management of Foreign Manufacturing Subsidiaries. Boston, Mass.: Harvard Graduate School of Business Administration, 1953. 8½". Pp. v + 223. $3.50.

[This study has special reference to the experience of United States manufacturing firms with branches in Mexico. The problems of management are shown to be in part the same as those involved in running a branch factory in the same country as the parent factory, but there are also many differences. Cost of production has usually been found to be higher in Mexico than in the United States, despite the cheaper labour, chiefly on account of the smaller market, which limits the exploitation of the economies of scale and long runs. The managerial questions to which the author gives most of his attention are the degree of autonomy to be granted to the foreign subsidiary, the issue of 100% United States ownership versus partial local capital participation and the relative advantages of employing United States citizens and foreign nationals to executive positions. The author concludes by suggesting that the aims of American foreign policy would be better served by encouraging direct investment abroad by United States firms than by loans from the United States government to foreign governments addicted to *dirigisme*.]

BELL (J. F.). A History of Economic Thought. New York: The Ronald Press Co., 1953. 9½". Pp. v + 696. $6.50.

[To be reviewed.]

CHRISTENSEN (C. R.). Management Succession in Small and Growing Enterprises. Boston, Mass.: Harvard Graduate School of Business Administration, 1953. 8½". Pp. v + 217. $3.25.

[During the last few years the Division of Research of the Harvard Business School has published a number of studies on the management of small, growing businesses. This study by Professor Christensen takes up the problem of providing for management succession in such firms. It does so in a competent and comprehensive fashion, discussing such subjects as the advisability of going outside the concern for advice, the comparative merits of developing a "crown

prince " or a number of possible candidates for succession to the top manager's job, the desirability of giving better training to potential managers and so on. This book, like most others emanating from the same source, contains a large number of case studies which illustrate the general principles under discussion. It will, no doubt, be of considerable assistance to business men who have reason to give thought to this problem.]

COPELAND (M. T.). The Executive At Work. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1952. 8½". Pp. 278. 24*s*.

[As Director of Research and Professor of Administration at the Harvard School of Business Administration, and as a consultant to many business firms, Professor Copeland has had ample opportunity of studying administrators at work. He has distilled his experience into this very readable book, which is notable for the balance and wisdom with which the author approaches his subject. Starting with a consideration of the authority of the executive, Professor Copeland goes on to discuss such matters, among others, as relationships with subordinates, attitudes to change and risk-taking, standards of conduct, and the rewards of management. He concludes with a consideration of the personal and organisational problems associated with retirement. The discussion gains both in authority and interest from the numerous case studies with which Professor Copeland illustrates his points. Although it is intended primarily for executives in business, this book will be of interest to administrators in many other spheres.]

COPLAND (SIR DOUGLAS). Problems of the Sterling Area, with special reference to Australia. Essays in International Finance, No. 17. Princeton, New Jersey: International Finance Section, Princeton University, 1953. 9". Pp. 28.

[" On the one hand, Australia will want to cling to the sterling area in so far as it insulates her economy from the growing harshness of a competitive world; on the other hand, she will want the capital that the outside world can offer for her development." This is the crux of the dilemma with which Sir Douglas Copland is here concerned. He makes no attempt to conceal his disquiet at certain trends in the economic development and balance of payments policies of Australia and other sterling-area countries since the war. He suggests that it is essential for means to be found by which Australia can obtain capital from the dollar area to finance the enormous volume of investment needed in order to absorb the hoped-for increase in population.]

EASTMAN (S. E.) and MARX (D.). Ships and Sugar. An evaluation of Puerto Rican offshore shipping. Puerto Rico: University of Puerto Rico Press, 1953. 9". Pp. v + 239.

[The authors describe the present structure and functioning of the external transport services on which the standard of living in Puerto Rico largely depends. While most passenger traffic is now by air, air transport has not yet become important for freight. Sea traffic between the island and the mainland of the United States ranks as coastwise shipping, so that only American vessels may operate. Much the greater part of the shipping concerned consists of liner services, competition between which is regulated by conferences. The restriction of competition is considered by the authors to be inevitable, but they suggest certain means by which its worst consequences might be avoided, notably the creation of regulatory bodies on which there would be effective representation of the interests of shippers and of the Insular Government.]

The Economics of the Guaranteed Wage. Report of a Committee on Economic Policy. Washington, D.C.: Chamber of Commerce of the United States, 1953. 9". Pp. 34. 50c.

[It is argued that while there is nothing to be said against guaranteed wage schemes voluntarily adopted by employers, the compulsory extension of the scheme to industry as a whole, including the unstable durable-goods industries, would be impracticable without an inordinate degree of coercion.]

FERBER (R.). The Railroad Shippers' Forecasts. University of Illinois studies in business expectations and planning. Urbana, Ill.: University of Illinois, 1953. 9". Pp. 140. $1.

[This is a piece of work with distinct originality, despite its very limited scope. It is the practice in the United States for firms responsible for the bulk of railway freight traffic to assist the railroads by furnishing them with forecasts one quarter in advance of the amounts of each of the chief classes of goods which they expect to be sending by rail. The author analyses the apparent basis on which these forecasts are made and compares them with the actual volume of shipments. The value of the railroad shippers' forecasts as material for a study in entrepreneurial expectations is limited by the fact that those responsible for drawing up the forecasts are mostly at a level of management below the highest; moreover, the forecasts relate only to the immediate future. The results are none the less interesting. It appears that, on account of the importance of seasonal fluctuations, shippers are much influenced in their forecasts by the level obtaining in the corresponding quarter in the previous year. This is scaled up or down if the trend in the intervening period has been up or down, but the adjustment is only partial; that is to say, the rise or fall (in quarterly time-units) between period $t-4$ and period t is expected to be less than the rise or fall that took place between periods $t-5$ and $t-1$. In comparing forecasts with events, it emerges that this conservatism is as a rule unjustified, and a mechanical forecast based on the product of the volume in $t-4$ and the ratio of the volumes in $t-1$ and $t-5$ would usually have yielded more accurate results. The forecasts have tended to underestimate the rate of change to a particularly great extent in periods of business contraction. The occasions when the actual forecasts proved superior to those that would have been yielded by a mechanical formula of the sort described were mostly those on which some major disturbance such as a strike was correctly anticipated.]

HAMBURG (M.), SCHOR (S.) and WINN (W.). Characteristics of Transactions on Over-the-Counter Markets. Philadelphia: University of Pennsylvania Press, 1953. 10". Pp. iii + 131. $1.25.

[This is the fourth in a series of studies of dealing in securities elsewhere than on organised exchanges. It is based on a sample survey of 25,000 separate transactions. These are analysed by type of security, size of transaction, type of customer and various other classifications.]

HAMILTON (D.). Newtonian Classicism and Darwinian Institutionalism. A study of change in economic theory. University of New Mexico Publications in Economics, No. 1. Albuquerque: University of New Mexico Press, 1953. 9". Pp. 138. $1.

[To be reviewed.]

HELLER (W. W.), BODDY (F. M.) and NELSON (C. L.) (Eds.). Savings in the Modern Economy. A Symposium. Minneapolis: University of Minnesota Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. 370. 40*s*.

[To be reviewed.]

HOOD (W. C.) and KOOPMANS (T. C.) (Eds.). Studies in Econometric Method. Cowles Commission Monograph, No. 14. New York: Wiley (London: Chapman & Hall), 1953. 9". Pp. xiii + 323. 44*s*.

[To be reviewed.]

HOSELITZ (B. F.) (Ed.). The Progress of Underdeveloped Areas. Chicago: University of Chicago Press (London: Cambridge University Press), 1953. 9". Pp. v + 297. 36*s*.

[This volume contains the lectures delivered at the Twenty-seventh Institute of the Norman Wait Harris Memorial Foundation at the University of Chicago in 1951. One of the aims of this conference was to draw together scholars from

different branches of the social sciences, and many of the lectures are concerned with the social and cultural aspects of economic development. The more strictly economic contributions include "Economic Backwardness in Historical Perspective," by Alexander Gerschenkron, "America's Aims and the Progress of Underdeveloped Countries," by Jacob Viner, and "Effects of Industrialisation on the Markets of Industrial Countries," by Albert O. Hirschman.]

JOHNSTON (B. F.). Japanese Food Management in World War II. Stanford University Food Research Institute Series on Food, Agriculture, and World War II. Stanford, California: Stanford University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. vii + 283. $7.50.

[The earlier chapters of this book contain a fairly detailed study of the structure of agriculture and of food supply and consumption in Japan before the war. The author then goes on to describe the growing difficulties experienced in procuring adequate food supplies during the war and the attempts made to overcome them. These efforts were ultimately unsuccessful; by the end of the war shipping losses and the tightening of the blockade had almost brought the importation of food to a standstill, and in the author's view this weighed heavily in the decision of the Government to surrender in 1945. A concluding chapter deals more briefly with the food-supply situation in Japan since the end of the war.]

KINDLEBERGER (C. P.). International Economics. Homewood, Illinois: Richard D. Irwin, 1953. 9". Pp. ix + 543. 64*s*.

[To be reviewed.]

MARJOLIN (R.). Europe and the United States in the World Economy. Durham, North Carolina: Duke University Press (London: Cambridge University Press), 1953. 8½". Pp. v + 105. 15*s*.

[To be reviewed.]

NOURSE (E. G.). Economics in the Public Service. Administrative aspects of the Employment Act. New York: Harcourt Brace (London: Allen & Unwin), 1953. 9½". Pp. vii + 511. 45*s*.

[To be reviewed.]

A Program for Expanding Jobs and Production. Report of a Committee on Economic Policy. Washington, D.C.: Chamber of Commerce of the United States, 1953. 9". Pp. 28. 50c.

[This contains a discussion of the prospects of maintaining a high level of demand and employment in the United States in the next few years. Some shift in attitude from previous United States Chamber of Commerce publications seems to be indicated by the approval extended to fiscal and monetary stabilisation measures which are Keynesian in all but name.]

SCHLEIFFER (H.) and CRANDALL (R.). Index to Economic History Essays in Festschriften, 1900–1950. Cambridge, Mass.: Harvard University Press for Arthur H. Cole (London: Geoffrey Cumberlege), 1953. 11". Pp. 68. 20*s*.

[This contains an elaborately classified list of 1532 articles on economic history contained in over 500 *Festschriften*. The coverage is world wide, and German is naturally the language most extensively represented. There are indexes of authors and proper names. This compilation will be widely welcomed and should save many important contributions from oblivion.]

SCHULTZ (T. W.). The Economic Organization of Agriculture. New York and London: McGraw-Hill, 1953. 9½". Pp. vii + 374. 44*s*.

[To be reviewed.]

SCOTT (W.). An Essay of Drapery, 1635. Boston, Mass.: Baker Library, Harvard Graduate School of Business Administration, 1953. 10½". Pp. 41.

[The author of the seventeenth-century essay here reprinted was a young man at the start of his business career. His essay is at once an encomium on the moral and religious dignity of trade and a manual of prudential maxims calculated to ensure business success. As Sylvia L. Thrupp remarks in her interesting introduction, *An Essay of Drapery* is not an intellectually distinguished piece of work, but it has some interest as an example of the speculative thinking of practical men of business at this time.]

SHEPHARD (R. W.). Cost and Production Functions. Princeton, New Jersey: Princeton University Press (London: Geoffrey Cumberlege), 1953. 9". Pp. 104. 12*s*. 6*d*.

[This monograph over-elaborately develops mathematical conditions under which either the cost or the production function may be determined from the other, given information about factor prices and the level of output. Several implications of these one-to-one correspondences between the two functions for such special cases as linear and homogeneous production functions are explored.]

SMITH (W. B.). Economic Aspects of the Second Bank of the United States. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. v + 314. 32*s*. 6*d*.

[In this scholarly work the author analyses the history of the Bank against the background of the economic structure and development of the United States during its lifetime (1816–41). At least in its golden era, the late 1820s, the Bank made a conscientious and largely successful attempt to carry out the functions of a central bank, and those responsible for its policy probably had fully as clear an understanding of what these functions were, at least in principle, as did their contemporary counterparts in the Bank of England. At the same time the extensive loans made by the Bank to its own directors and officials, not always on unimpeachable security, indicated a weakness in the execution of policy from which the Bank of England was certainly immune. Professor Smith traces clearly and interestingly the course and causes of the deterioration in the standard of management of the Bank during the brief period between 1836 and its ultimate failure in 1841 when it was operating under a Pennsylvanian charter. His work will be indispensable to students of the history both of banking and of economic fluctuations in the United States before the Civil War.]

SWEEZY (P. M.). The Present as History. Essays and reviews on capitalism and socialism. New York: Monthly Review Press, 1953. 8½". Pp. vi + 376. $5.

[To be reviewed.]

WALLICH (H. C.) and TRIFFIN (R.). Monetary and Banking Legislation of the Dominican Republic, 1947. New York: Federal Reserve Bank, 1953. 10". Pp. 98.

[In 1947 there took place a general overhaul of the monetary and banking system of the Dominican Republic, and the United States dollar was replaced by a new Dominican peso as legal tender. This document contains the English text of the monetary law, the central banking law and the general banking law by which these changes were effected. The texts of the laws are accompanied by commentaries and an introductory survey of the economic and monetary background by Messrs. Wallich and Triffin, who served as advisers on behalf of the Federal Reserve System in drawing up the reform legislation.]

WHITIN (T. M.). The Theory of Inventory Management. Princeton, New Jersey: Princeton University Press (London: Geoffrey Cumberlege), 1953. 8½". Pp. v + 245. 30*s*.

[Mr. Whitin hopes that this book will serve the double purpose of making business-men more aware of the need for efficient inventory control and economists more aware of the need to incorporate inventory behaviour into the theory

of the firm and of the business cycle. The book is divided into three sections, in which the author discusses inventory levels for the firm, inventories in the economy and inventories in military establishments. Starting from a consideration of inventory systems in use at the present time, Mr. Whitin goes on to consider the theory of inventory control. One of his principal conclusions is that, under certain assumptions, a rational entrepreneur should attempt to vary the level of his inventories with the square root of sales rather than directly with sales. Mr. Whitin turns next to a discussion of the role of inventories in business cycles, first expounding then criticising the views of various economists who have made contributions to the subject. His conclusion is that, while it is necessary to include inventories in dynamic models to make them realistic, insufficient data are available at present to make possible any satisfactory method of doing so. He considers the suggestion that there should be social control of inventories in order to mitigate business-cycle fluctuations, but dismisses it on both political and economic grounds. He is not, however, opposed to schemes involving stock regulation in particular segments of the economy. In the final section of the book the author examines the problem of military inventories, using the same form of analysis as in previous chapters, but applying the theory of games instead of profits as a means of evaluation.]

WOYTINSKY (W. S. and E. S.). World Population and Production. Trends and outlook. New York: Twentieth Century Fund, 1953. 10″. Pp. v + 1268. $12.

[To be reviewed.]

French

BAUDIN (L.). L'Aube d'un Nouveau Libéralisme. Paris: Génin, 1953. 7½″. Pp. 220.

[Professor Baudin examines relationships, the discussion of which appears to be very widespread among contemporary French scholars. They are those between the individual personality, the social group and the economic order. The author traces the development of the liberal society and the attacks which have been launched against it by all forms of *dirigisme*. In the development of that socialism without doctrine which is to be found especially in Britain and Sweden, and which also has its place in France, and the reinforcement of liberalism by a more effective social conscience, Professor Bandin sees the rise of a new liberalism. If the book is somewhat diffuse, it nevertheless makes many important points, supported by great erudition. The opening discussion of the special characteristics of individualism in France does much to explain that combination of civilised plenitude and political waste which commands the affection and provokes the despair of countless foreign admirers of France. There are many other telling passages; those, for example, in which the author rejects the argument that the liberal society is inevitably self-destructive.]

BERNARD (P.). Économie et Sociologie de la Seine-et-Marne 1850–1950. Paris: Armand Colin, 1953. 9½″. Pp. 303. 1000 frs.

[This is a study of the development of the economic, social and political life of the department in the past hundred years. The author sets out some general conclusions at the beginning and end of the book. Throughout the bulk of the text he has concentrated on presenting data. In so doing, he has given the reader abundant information without falling into the trap of making the book merely a catalogue.]

FRIEDMANN (G.) and OTHERS. Villes et Campagnes. Civilisation urbaine et Civilisation rurale en France. Paris: Armand Colin, 1953. 9″. Pp. 1,200 frs.

[This is a record of the proceedings of the second biennial "Semaine Sociologique" organised by the *Centre d'Études Sociologique* in 1951. The first conference in 1949 was concerned with the subject of "Industrialisation and Technocracy." In the present volume, the historical, geographical and social factors in the urban and rural structure of France are exhaustively discussed.]

NÉEL (A.). Le Marché Mondial de l'Étain. Ministére des Affaires Économiques, Études et Documents Série C3 1952. Paris: Presses Universitaires de France, 1952. 9½″. Pp. 229. 1,000 frs.

[Dr. Néel has divided his informative study of the economic problems of the world market for tin (including the regenerated metal) into two main parts. In the first, he examines the sources of supply, the modes of extraction and the structure of production and consumption. In the second, Dr. Néel discusses the commerce in tin, the development of prices, and commercial and strategic policies. The book is amply documented with statistics and other useful data.]

SELLIER (F.). Morale et Vie Économique. Paris: Presses Universitaires de France, 1953. 7½″. Pp. 112. 240 frs.

[This little book is the fourth in a series entitled "Initiation Philosophique," of which six have so far appeared. M. Sellier is concerned with the relationships between individual and social morality and economic life. As he sees the development of industrial civilisation, an initial effect was the depersonalisation of industrial relations. Subsequently, employers, trades unions and governments have endeavoured to improve those relations. At the same time, the author contends, the power to control economic affairs by deliberate policy has greatly increased, and with it the significance of the study of welfare. The problem is, how to express in the laws of States, the appropriate "moral constraint" for a complex society. The analysis is extremely inconclusive, and there are oddities in the argument, for example, M. Sellier says that the amount of tax fraud is greater in less-developed than in more-advanced economies and simply deduces a relationship between economic development and civic sense. That is hardly the whole of the explanation.]

Swedish

OHLSSON (I.). On National Accounting. Stockholm: Konjunkturinstitutet, 1953. 9½″. Pp. iii + 353. Kronor 22.

[To be reviewed.]

Italian

COSCIANI (C.). Principii di Scienza delle Finanze. Turín: Unione Tipografico-Editrice Torinese, 1953. 10″. Pp. 587. Lire 3000.

[To be reviewed.]

LOMBARDINI (S.). Il Monopolio nella Teoria Economica. Milan: Società' Editrice "Vita e Pensiero", 1953. 10″. Pp. 317. Lire 1700.

[To be reviewed.]

MENEGAZZI (G.). Corso di Scienza Sociale. In three volumes. Vol. I; fondamenti nuovi della sociologia. Vol. II; principî dell'ordine economico e finanziario. Vol. III; l'equilibrio economico-sociale. Verona: Lecce, 1953. 8½″. Pp. 407, 464 and 430. Lire 1800 each volume.

[This is an attempt to provide a text-book which will bring economics and sociology together as a single discipline. Much of the treatment of economic theory in Volume II consists of discussion of the relations between social and economic values and allied questions, but a general outline of the theory of price and distribution is also included.]

PARETO (V.). Scritti Teorici. With an introduction by G. Demaria. Milan: Malfasi, 1953. 10″. Pp. vii + 651. Lire 10000.

[This splendidly produced volume contains photographic reprints of Pareto's chief contributions on theoretical economics to the *Giornale degli economisti* and other periodicals. This collection, which should be of the greatest value to students of Pareto's thought, is prefaced by an assessment of Pareto's work in economics by Giovanni Demaria.]

Dutch

PALVIA (C. M.). An Econometric Model for Development Planning (with special reference to India). The Hague: Institute of Social Studies, 1953. 8½". Pp. 85.

[In this study, an econometric model is used to forecast the level of investment required to double the Indian *per capita* income between 1948–49 and 1970–71. The model is of a closed economy with the labour force distributed between two sectors, agriculture and all other industries. Labour co-operates with "land-potential" in the first sector and capital in the second. Free competition and full-employment are assumed within each sector; however, because of workers' preferences and such dynamic factors as population pressures, it is also assumed that wages in agricultural occupations are a fixed fraction of wages elsewhere. Once there have been assembled as many equations as unknowns, many of the variables and coefficients are replaced by rough data for India in 1948–49 or by estimates compiled from empirical investigations in other countries. The remaining unknowns are found by solving the system. In conjunction with hypothetical growth rates of population and technical efficiency, a target for the 1970–71 levels of real income and food production are fed into the model. The solutions to the system reached under alternative sets of values for: (1) the two-sector wage-ratio; (2) the price elasticity of demand for food; and (3) a sometimes exogenous agricultural price level, yield forecasts of the amounts of investment in "land-potential" and capital goods required to reach the target. Even under the more favourable of these sets of values, the necessary investment will probably be greater than domestic saving and the author concludes that an annual import of foreign capital equal to about 20% of the 1948-49 national income will be called for.]

Egyptian

LEWIS (W. A.). Aspects of Industrialisation. Cairo: National Bank of Egypt, 1953. 9½". Pp. 41.

[Professor Lewis takes as his theme the special problems involved in the attempt to industrialise countries lacking in mineral resources. The problems of marketing and capital supply naturally come foremost. In approaching the vexed question of the relative pace at which countries should seek to advance on the two fronts of agriculture and manufacturing, Professor Lewis begins by laying down that in the absence of foreign trade the proper balance will normally be determined simply by the marginal propensities to consume agricultural and manufactured products respectively. The situation is complicated, however, where foreign trade is possible, and also where there is over-population (in the sense of a zero marginal productivity of labour in agriculture). Where over-population is present, industrialisation has a special urgency, and Professor Lewis argues that in view of the relative abundance of land and labour in the different continents "it may well be that with increasing population the world will depend more and more for agricultural products upon the fertile plains of North and South America, and that an increasing share of world trade in the simpler manufactured products must pass from the United States to the over-populated countries." The problem of capital supply, in so far as it involves import of capital, is seen by the author as closely connected with the problem of management; in his view managerial expertise is a sphere in which foreign assistance is even more indispensable than it is in the sphere of technical knowledge. The lectures are marked throughout by the author's characteristic lucidity and assurance.]

Jugoslav

BAJT (A.). Marxov Zakon Vrednosti. Ljubljana: Prevna Fakulteta, Univerza v Ljubljani, 1953. 8". Pp. 359.

[This book on the Marxian Law of Value is based on a doctoral dissertation of the University of Ljubljana. It is accompanied by a summary in English. The author considers the difficulties involved in the Marxian labour theory of value, especially the problems of varying qualities of labour and the relation between value and price. He concludes that on account of these difficulties, the theory as expounded by Marx is not generally applicable to reality, and he then proceeds to discuss the simplifying assumptions made by Marx for the purpose of analysing capitalism which require to be relaxed to render his theory of value applicable to a non-capitalist economy.]

Japanese

KANO (H.). Banking in Japan. An outline of its history. Tokyo: The Bank of Tokyo, 1953. 7". Pp. 21.

[This short factual survey has a somewhat broader scope than its title might indicate, since, as the author points out, the banking system in Japan tended to run ahead of the economy in general, so that its development has been integrally connected with the country's industrialisation.]

Indonesian

THE JAVA BANK. Report for the Financial Year 1952–1953. Djakarta: The Java Bank, 1953. 10½". Pp. 243.

[This is the last report of the Bank to appear under its old constitution. The Java Bank is now replaced by the nationalised Bank Indonesia, and the present report begins by explaining the provisions of the nationalisation statute and the relation of the new bank to the old. It then goes on to give a full and valuable survey of recent economic developments in Indonesia in relation to their international context.]

Official

BRITISH

GENERAL REGISTER OFFICE. Census 1951, England and Wales. County Report, London. London: H.M. Stationery Office, 1953. 13". Pp. 90. 22*s*. 6*d*.

[This is the first of the County Reports series for England and Wales. The County of London over the period 1931–51 had a decline of over 1 million persons. The number of dwellings occupied by private households or vacant has increased since 1931 by about 72,000; there are about 100,000 new permanent dwellings, nearly one-third since the war; 30,000 new dwellings have been added by conversions and adaptations; at least 70,000 were totally destroyed; there has been a decline from 0·98 persons per room to 0·83 persons. Apart from this, the report includes the usual information about birthplace, nationality, sex, age and marital condition, education, and social class as measured by broad classification of occupations.]

REINERS (W. J.) and BROUGHTON (H. F.). Productivity in House-Building. Second Report. National Building Studies, Special Report No. 21. London: H.M. Stationery Office for the Department of Scientific and Industrial Research, 1953. 9½". Pp. 37. 1*s*. 9*d*.

[This is based on a sample survey of local-authority housing contracts completed between March 1949 and March 1951. The report contains a careful statistical analysis of the relationship found in the sample between productivity and the following factors: size and character of houses; extent of sub-contracting; methods of wage payment; degree of supervision; contractors' experience of house-building; size of the contract; date; and region.]

AMERICAN

UNITED STATES OF AMERICA MUTUAL SECURITY AGENCY. The Structure and Growth of the Italian Economy. Prepared by the Program Division of the Special Mission to Italy for Economic Co-operation. Rome: Mutual Security Agency, 1953. 10½". Pp. 165.

[To be reviewed.]

LATIN AMERICAN

INTER-AMERICAN COUNCIL OF COMMERCE AND PRODUCTION. Plain Talk in Lima. Position of Argentine economic forces in the sixth plenary meeting of the Council. Argentine Section of the Inter-American Council of Commerce and Production, 1953. 9″. Pp. 133.

[A reproduction and elaboration of the opinions advanced by the Argentine delegates at the sixth plenary meeting of the Inter-American Council of Commerce and Production, a body composed of representatives of business interests in the countries of the American continent.]

THAILAND

NATIONAL ECONOMIC COUNCIL OF THAILAND. Statistical Yearbook, 1952. Bangkok: Central Statistical Office, National Economic Council, 1952. 10½″. Pp. 408.

[The publication of this Year Book, which was temporarily suspended after 1949, is here resumed in a new form. Detailed historical data will in future be given only in Census years.]

INTERNATIONAL

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT. The Economic Development of Nicaragua. Report of a mission organised by the Bank at the request of the Government of Nicaragua. Baltimore: Johns Hopkins University Press (London: Geoffrey Cumberlege), 1953. 8½″. Pp. vii + 424. 40*s*.

[The literature on this Central American republic is scanty, and a book of this authority and comprehensiveness is to be welcomed. The volume divides into five main sections—The Main Report; Industries, Power and Mining; Transport and Communications; Agriculture and Forestry; The Fiscal System. For the most part it is pleasantly written and gives a clear and interesting picture of the country. Nicaragua is an underdeveloped land—a fact of which its Government is well aware. There is much to be done in education (in its widest sense) and the modernising of agriculture, industry, land use and trade. But the country offers many potentialities. It is difficult for a European to realise the complete absence of any topographical surveys—and this is a serious lack which is being remedied slowly by American surveyors, who, very rightly, are spending much time on basic triangulation. Nor is there any comprehensive geological knowledge of the country. Nevertheless, it is a pity that the Mission did not include some better general maps in the volume. In the three which are given there is no attempt even to show the general physical appearance of the Republic such as is given in any ordinary atlas. The map of Land Use is interesting, but would be of far more value if it were combined with even an outline of the topography. Economists, geographers and others should welcome this volume as a contribution of no little value and merit. It contains much information, and can be read with advantage and pleasure. The account of the railways and telephone systems will soon convince the student that there is plenty of room for improvements!]

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT. Surinam. Recommendations for a ten year development program. Report of a mission organized by the Bank at the request of the governments of the Netherlands and of Surinam. Baltimore: Johns Hopkins Press, 1952 (London: Geoffrey Cumberlege), 1953. 8½″. Pp. v + 271. 40*s*.

[The first hundred pages of this book form the report, and the remainder of the book is devoted to technical appendices. The latter are very interesting and informative. They deal with agriculture, forestry, mining, industry and power, transportation and marketing. There is also one devoted to the Brokopondo project—a project involving the building of a dam and the development of water power. In all these appendices there is a fairly close integration of the geographical background and the matter discussed. Two or three simple diagram maps are the only illustrations. Even if Surinam has not yet been surveyed, it would have been possible to insert a general map showing physical features and some climatic and other relevant statistics. The economic discussions are interesting, and the reader will find the book as a whole pleasant to read. He will, too, learn a great deal about a little-known place. Nevertheless, if the report and appendices had been illustrated with appropriate maps, they would have been far more valuable. After all, economic discussions must largely depend on geographical facts and conditions, and these can usually be shown on maps.]

INTERNATIONAL LABOUR ORGANISATION. Problems of Wage Policy in Asian Countries. Geneva: International Labour Office, 1953. 9½″. Pp. 135.

[In no part of the world are the problems of wage policy more urgent and difficult than in Asia. In many Asian countries two-thirds or more of the population depend for their livelihood on agriculture and other primary production, the majority of the working population are self-employed, and the proportion of wage-earners is considerably smaller than in economically advanced countries. Real income per head is the smallest in the world, and the food consumption of many millions is insufficient to sustain physical efficiency. Most of the wage-earners are in agriculture, small-scale handicraft industries and domestic service, and their wages cannot be raised appreciably without simultaneous measures to raise the income of vast numbers who are not wage-earners. This implies carefully planned programmes of economic development, with which wage policy must be co-ordinated. The Report reviews these problems, outlines the objectives of wage policy, gives an account of existing systems of wage regulation and examines the relation between wage policy and economic development. Special attention is given to the need for capital investment if productivity is to be increased, and to the need for a wage policy which will ensure savings for this purpose. Consideration is given to the accumulation of funds in good years in order to stabilise the wages of workers engaged in the production of rubber, tin and other commodities which experience wide price fluctuations in world markets.]

INTERNATIONAL MONETARY FUND. Annual Report 1953. Washington, D.C.: International Monetary Fund, 1953. 9″. Pp. v + 160.

[This report contains the usual survey of world balance-of-payments movements during the year. The authors welcome the increased reliance on monetary policy recently shown by many national authorities, and they also give their support to the view that progress towards the convertibility of currencies is to be regarded as means of assisting in the solution of balance-of-payments problems rather than merely as an ideal capable of attainment only after balance-of-payments difficulties have ceased to exist.]

INTERNATIONAL MONETARY FUND. Summary Proceedings of the Eighth Annual Meeting of the Board of Governors, September 1953. Washington, D.C.: International Monetary Fund, 1953. 9″. Pp. 165.

[The chief feature of these proceedings is the speech made by Mr. Ivar Rooth, Managing Director of the Fund, in presenting its eighth annual report (noted above). In it he restates and elaborates the views about convertibility contained in that report.]

INTERNATIONAL MONETARY FUND. The Revival of Monetary Policy. Text and charts of an informal discussion at the Eighth Annual Meeting of the Board of Governors. Washington, D.C.: International Monetary Fund, 1953. 11″. Pp. 16.

[This contains half a dozen brief articles on recent trends in monetary policy in different countries. Some interesting material is included, but the analysis is mostly rather slight.]

UNITED NATIONS. A System of National Accounts and Supporting Tables. Studies in Methods, No. 2. New York: United Nations Department of Economic Affairs, 1953. 11″. Pp. 46. 3*s*. 9*d*.

[As a concise and up-to-date description of the frame of reference of the social accountant and as a manual for the working statistician this report effectively replaces the earlier U.N. report, *Measurement of National Income and the Construction of Social Accounts* (1947), to which it is described as a sequel. It sets

out clearly the principles of classification of activities, transactions and sectors, it defines precisely the principal flows in the accounting system, and it constructs a set of tables which in their form and emphasis distil some five years' international experience of social accounting. The needs of under-developed countries, for example, are now explicitly recognised in a special account for the rural sector. A detailed analytical table of contents adds enormously to the practical usefulness of the manual. This report, however, takes the subject for granted, and its predecessor is a more readable and informative introduction to social accounting for the uninitiated.]

UNITED NATIONS. Yearbook of International Trade Statistics, 1952. New York: United Nations Department of Economic Affairs, 1953. 11". Pp. 384. 30*s*.

[This third issue contains statistics for seventy countries (as against fifty-two in the second issue) covering about 97% of world trade.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION. The State of Food and Agriculture, 1953. Part I—Review and outlook. Rome: FAO, 1953. 11". Pp. 125. 5*s*.

[1952/53 was a year in which primary-product prices tended to fall in consequence both of improved supplies and the end of the Korean war boom. It is estimated that world production per head (outside the communist countries) in 1952/53 regained for the first time its pre-war level, although disparities between different parts of the world remained as great as ever, and food production per head in the Far East remained 15–20% below pre-war. The present report contains useful information on recent trends in prices and world trade, as well as a review of production and outlook by regions and by commodities.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION. Survey of National Measures for Controlling Farm Prices in Western European Countries. Commodity Policy Studies, No. 2. Rome: FAO, 1953. 11". Pp. 70. 3*s*. 9*d*.

[The author of this survey is Miss Ruth Cohen. The survey describes and analyses national policies relating to farm prices in ten Western European countries in the year 1951. In the opening chapter the author considers in general terms the objectives, methods and effectiveness of these policies and their impact on other countries. The two remaining chapters describe in greater detail the policies adopted in individual countries and in respect of individual commodities.]

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IMPERIAL PREFERENCE: A QUANTITATIVE ANALYSIS[1]

INTRODUCTION

The Need for Quantitative Analysis

MUCH has been written, and perhaps even more spoken aloud, on the subject of Imperial Preference. But the discussion has been to a large extent theoretical and political rather than quantitative. There have, it is true, been analyses of the changing pattern of Commonwealth trade after Ottawa. But the figures are not easy to interpret, since the changes recorded are by no means wholly the result of Imperial Preference. There has been little attempt to analyse in a systematic way the proportion of trade enjoying preference and the size of the preferential margins. Information on such matters would seem to be essential in any attempt to assess the changing importance of Imperial Preference in Commonwealth trade over the past twenty-five years, and the main object of the present study is to provide some of the relevant orders of magnitude. Some of the more detailed results obtained are also given in the hope that they may be of value in the study of particular problems, but these are in general subject to a wider margin of error. No attempt has been made here to relate the results obtained to changes in Commonwealth trade; that would require much further research.

The Choice of Years

The statistical work involved in a study of this sort is very considerable; detailed analyses have to be made of the trade returns and tariff lists of a large number of countries. Only a few years could therefore be studied, and those selected were: 1929, to represent the position before Ottawa; 1937, as a typical

[1] We are indebted to the Oxford University Institute of Statistics for technical assistance and to government officials and others in many countries for valuable help and advice.

year after Ottawa but before the process of extending preferences went into reverse; 1948, as a post-war year.

1937 was chosen partly because work had already been done on this year in connection with an earlier article,[1] but it is probably as good a year as could be found for the purpose. The Ottawa Agreements of 1932 involved the overhaul of Dominion tariffs, and this was a lengthy task; nor was the extension of preference by the Colonies completed for several years after Ottawa. It would thus have been unwise to select a year before, say, 1936; and the U.S./U.K. Trade Agreement of 1938 is sometimes regarded as an important landmark in the " retreat " from Imperial Preference.

1929 was the latest pre-Ottawa year which it was thought fit to compare with the relatively prosperous 1937; 1930 and 1931 were years of depression.

1948 was the latest post-war year for which reasonably complete information was available when the calculations were made. But it is a useful year to take. By then a large part of the reduction in Imperial Preference that has occurred since 1937 had taken place. The tariff lists we have used in calculating the figures for 1948 incorporate most of the reduced preferences resulting from the negotiations at Geneva under G.A.T.T. in 1947; subsequent reductions have been less important. And by 1948 a large part of the rise in prices that has greatly reduced the *ad valorem* incidence of specific preferences since 1937 had already taken place. In a later section some broad indications are given of what is likely to be the present position (1953).

Scope and Definitions

The study covers U.K. exports to and imports from the Commonwealth, but not trade between Commonwealth countries other than the U.K.[2] The " Commonwealth " is defined to cover all countries classified as " British " in the U.K. trade returns for the three years, but to include Burma in 1948 as preference continued to be given; under this definition Eire is included throughout.

The analysis of U.K. exports does not include our trade with some of the least important Colonies, but covers countries that took some 95% of our total exports to the Commonwealth.

[1] ECONOMIC JOURNAL, September 1952.

[2] Trade of the latter type comprised about one-sixth of total intra-Commonwealth trade in 1929, one-fifth in 1937 and one-quarter in 1948.

Only tariff preferences are considered, and no account is taken of the preferential effects of other trade and financial measures.

For Commonwealth imports from the U.K., the margin of preference *on any item* is defined as the difference between the percentage duty paid on it when imported from the U.K. and the percentage it would have paid had it come from the U.S., specific duties being reduced to their *ad valorem* equivalents. The margin is reckoned as a percentage of the import value excluding duty; had it been based on the value including duty, which is more relevant when assessing competitive power, the figures would have been lower. The comparison was made with the U.S., since the practice in some Dominions of charging different rates of duty on goods from different foreign countries made some such clear-cut definition necessary; and the U.S., as our largest competitor in the world market for manufactures to-day, seemed the most interesting country to choose. Where statistical difficulties necessitated departure from the strict definition this has been mentioned in the notes to the tables concerned.

The margin of preference *on a country's total imports from the U.K.* is the average of the margins on all the items weighted by the value of imports of each from the U.K. The average margin of preference *on the U.K.'s exports to the Commonwealth as a whole* is likewise the average of the margins granted by the various countries weighted by the value of U.K. exports to each.

The method of calculation used may, incidentally, tend to overstate the average margins of preference, since the existence of preference tends to increase the proportion of U.K. exports enjoying higher preferences and to reduce the proportion enjoying lower preferences or none at all.[1]

For each country the average margin of preference is in fact the difference between the total duty paid on imports from Britain and the total duty that would have been paid had the goods been American, expressed as a percentage of the total value of imports from Britain. This is, of course, not at all the same as the difference between the average rates of duty actually paid on imports from the U.K. and from the U.S. in any year. For example, between 1900 and 1932, although Canada granted preference to Britain, the average rate of duty paid on Canadian imports from the U.S. was consistently below that paid on imports from the U.K.; Canada took large imports of heavily taxed alcoholic beverages from the U.K. and large imports of raw

[1] See ECONOMIC JOURNAL, September 1952, p. 519.

materials and semi-manufactures from the U.S., which paid low duties or none at all.

For U.K. imports from the Commonwealth the margins of preference are defined in a similar way.

The Tables

Table I shows, for each year, for each country and for all countries taken together: (*a*) the proportion of imports from the U.K. enjoying preference; (*b*) the average margin of preference on such "preferred goods"; and (*c*) the average margin on all imports from the U.K., including those enjoying no preference. (Outside limits are sometimes given instead of precise figures; this is usually where it has been impossible to reconcile the tariff lists with the trade returns for particular items.) Table II gives a fuller picture of the amounts of trade passing at different rates, and the chart a summary for U.K. exports to the Commonwealth as a whole. The main results in these tables are brought together in Summary Table A, which also gives similar figures for U.K. imports from the Commonwealth not included in Table I.

Summary Table B attempts to show how far the changes that occurred between 1929 and 1937 and between 1937 and 1948 in the proportion of trade enjoying preference and in the average rates of preference were the result of: (*a*) changes in the pattern of trade, both commodity-wise and country-wise; (*b*) changes in prices [1] which altered the *ad valorem* incidence of specific duties; and (*c*) changes by governments in tariff rates. To save space, no table is given of the figures for each country obtained in the course of this calculation; but some interesting cases where changes in the pattern of trade or in prices were important are mentioned in the footnotes to Table I.

Finally, Table III and Summary Table C give some details which help us to discover how far the intensification of Imperial Preference between 1929 and 1937 was brought about by reducing tariff rates on trade between Commonwealth countries and how far by increasing rates on foreign goods. Some similar figures are given for 1937–48.

The order of countries in the tables corresponds to the value of U.K. exports to them in 1937.

The rest of the article describes the main findings.

[1] Strictly speaking, "average values"; but, for the sake of brevity, we refer to changes in "prices" throughout this paper.

The Results

The Position in 1929

(a) *Preferences Accorded U.K. Goods in British Countries in* 1929

In 1929 preferences enjoyed by U.K. exports were already fairly widespread. Canada had introduced preference in 1898, New Zealand and South Africa in 1903, Australia in 1908 and India in 1927, while U.K. exports to the Irish Free State enjoyed

Summary Table A

Proportion of Trade Enjoying Preference and Margins of Preference

	U.K. exports to Commonwealth.			U.K. imports from Commonwealth.		
	1929.	1937.	1948.	1929.	1937.	1948.
Percentage enjoying preference	35–36	55–57	49–51	7	60–61	54–56
Of which enjoying preferential margins of:						
10% or less	9	18	19	2	27	39
Over 10%, not over 20%	24	18	22	1	24	12
Over 20%	3	20	9	4	9	4
Average percentage margin of preference:						
On goods enjoying preference	13	19–20	14–15	29–49	17–20	11–13
On all goods	5	10–11	7	2–3	10–12	6–7

Notes: 1. See Tables I and II for further details and explanations.

2. To obtain the figures showing percentage of trade enjoying various rates of preference, the more detailed information contained in Table II has been adjusted:

(*a*) to allow so far as possible for extra information contained in footnotes to Table II;

(*b*) to be consistent with figures in first line of above table, which are based on fuller information.

3. The figures for U.K. imports cover 98% of imports from the Commonwealth in 1929 and 1937, and 100% in 1948, except the figures showing percentage of trade enjoying various rates of preference, which are based on less complete information (see Table II).

preferences from the inception of a separate Customs administration in the latter part of 1923. By 1929 Britain was thus receiving preferences in all the most important trading countries of the Commonwealth. They applied to over 80% of our trade to Australia and New Zealand, over 60% of our trade to Canada, but under 30% of our exports to South Africa and less than 10% of our exports to India and Eire. Among the smaller countries, we had preferences covering a substantial part of our exports to the West Indies and British Guiana and to the Rhodesias, but, partly

as a result of treaty obligations, partly for other reasons, few preferences of much importance in the rest of Africa or elsewhere.[1]

All told, rather more than one-third of U.K. exports to British countries enjoyed preferences. The great bulk of these were of

Summary Table B

Analysis of Changes Shown in Summary Table A

	U.K. exports to Commonwealth.			U.K. imports from Commonwealth.		
	Percentage enjoying preference.	Average percentage margin of preference.		Percentage enjoying preference.	Average percentage margin of preference.	
		On goods enjoying preference.	On all goods.		On goods enjoying preference.	On all goods.
1. 1929 actual	35–36	13	5	7	29–49 [1]	2–3
2. 1937 if there had been no change in individual *percentage* margins of preference since 1929	39–41	12–14	5	7	38–66 [1]	3–4
3. 1937 if there had been no change in *tariff rates* since 1929	39–41	12–14	5	7	47–80 [1]	3–5
4. 1937 actual	55–57	19–20	10–11	60–61	17–20	10–12
5. 1948 if there had been no change in individual *percentage* margins of preference since 1937	52–55	21–23	11–12	63–65	21–27	14–18
6. 1948 if there had been no change in *tariff rates* since 1937	52–55	17–18	9–10	63–65	14–17	9–11
7. 1948 actual	49–51	14–15	7	54–56	11–13	6–7

[1] These figures have no great significance as so few goods are involved.

General Notes to Summary Table B

Change from 1 to 2 and from 4 to 5 reflects change in trade pattern (commodity-wise and country-wise).
Change from 2 to 3 and from 5 to 6 reflects change in prices (which affect *ad valorem* incidence of specific duties).
Change from 3 to 4 and from 6 to 7 reflects change in tariff rates.
Lines 1, 4 and 7. As in Summary Table A.
Line 2. Figures obtained by weighting 1929 *percentage* margins of preference on each item by value of trade in each item in 1937.
Similarly *Line 5.*
Line 3. Figures obtained by applying 1929 *tariff rates* to the 1937 trade. This would give the same result as in line 2 if all duties were *ad valorem*. But in fact the percentage margins of preference are now different for all items subject to specific duties where prices have changed between 1929 and 1937.
Similarly *Line 6.*
This particular method of separating the effects of changes in trade patterns, prices and tariff rates was chosen largely for its statistical convenience. Other, equally plausible, methods might give different results. In particular, it will be noted that the method used in Summary Table C and in Table III differs from that used in Summary Table B, and does not always refer to the same categories of goods.

not more than 20%—under 3% of our trade to the Commonwealth did better than this—and the average preferential margin on goods enjoying preference worked out at 13%. As, however, this applied to little more than one-third of the total trade, the average margin of preference received by all our exports to the Commonwealth was only 5%.

[1] The only other countries covered by our calculations that granted preferences in 1929 were Gibraltar (on drink and tobacco) and the Channel Islands, but preferences were also granted by a number of smaller trading countries such as North Borneo, Fiji, Mauritius and Somaliland.

Summary Table C

Changes in Tariff Levels

A. U.K. Exports to Commonwealth

1. 1929–37

Goods first granted a preference between 1929 *and* 1937	%
Total value of exports of such goods in 1937	100
Of which goods subjected to:	
(i) Reduction in U.K. rate; no change in U.S. rate	5 [1]
(ii) Reduction in U.K. rate; increase in U.S. rate	5 [1]
(iii) No change in U.K. rate; increase in U.S. rate	30 [1]
(iv) Increase in U.K. rate; increase in U.S. rate	60 [1]

Goods already enjoying preference in 1929 (1929 *pattern of trade*)	Average percentage rate of duty. Goods from the U.K. (U.K. rate).	Had goods been from the U.S. (U.S. rate).
(a) 1929 tariff rates, 1929 prices	13–16	25–30
(b) 1937 tariff rates, 1929 prices	14–16	33–36
(c) 1937 tariff rates, 1937 prices	17–19	37–41

2. 1937–48

Goods still enjoying preference in 1948 (1948 *pattern of trade*)		
(a) 1937 tariff rates, 1937 prices	17–20	38–43
(b) 1948 tariff rates, 1937 prices	24–26	42–47
(c) 1948 tariff rates, 1948 prices	14	27–29

B. U.K. Imports from Commonwealth

1937–48

Goods still enjoying preference in 1948 (1948 *pattern of trade*)		Average percentage rate of duty. Goods from Commonwealth.	Had goods been from the U.S.
Including excise duties	(a) 1937 tariff rates, 1937 prices	45–58	63–81
	(b) 1948 tariff rates, 1937 prices	206–216	226–239
	(c) 1948 tariff rates, 1948 prices	75–79	86–92
Excluding excise duties	(a) 1937 tariff rates, 1937 prices	6–10	24–33
	(b) 1948 tariff rates, 1937 prices	7–11	27–34
	(c) 1948 tariff rates, 1948 prices	2–4	13–16

[1] Based on five countries only, but includes 85%, by value, of goods concerned; round figures.

General Notes to Summary Table C

1. No analysis is given of:

(i) U.K. imports first granted a preference between 1929 and 1937. Such preferences were granted largely by imposing duties on non-Commonwealth goods.

(ii) U.K. imports already enjoying a preference in 1929, U.K. imports and U.K. exports that lost preference between 1937 and 1948. Such goods were relatively unimportant.

2. Changes from (*a*) to (*b*) reflect changes in tariff rates.
Changes from (*b*) to (*c*) reflect changes in prices.

3. In calculating lines (*a*), (*b*) and (*c*), the 1929 or 1948 values of imports have been used throughout. The reference in some of the lines to 1937 prices means only that these have been used in calculating the *ad valorem* incidence of specific duties.

4. Only the figures in lines A1(*a*), A2(*c*) and B(*c*) (both) are comparable with any of the figures in Summary Table B.

TABLE I

Proportion of Trade Enjoying Preference

	A. Percentage of total U.K. exports to British [1] countries.			B. Percentage of total imports from the U.K. covered in calculation.		
	1929.	1937.	1948.	1929.	1937.	1948.
Union of South Africa	10·0	16·5	14·2	100·0	98·8	100·0
Australia [4]	16·7	14·9	17·1	99·2	92·8	99·0
India	22·2	14·2	13·4 [17]	99·4	99·1	100·0
Canada	10·8	10·9	8·3	100·0	99·7	99·6
Eire	11·1	8·6	8·9	99·7	99·3	98·8
New Zealand	6·6	8·0	6·2	99·3	100·0	79·1 [23]
Straits Settlements [28]	3·8	3·4	2·4 [16]	100·0	100·0	100·0 [16]
Channel Islands [5]	1·1	2·2	1·8	100·0	61·0	80·5
Ceylon	1·8	1·6	1·5	100·0	97·2	97·1
Hong Kong [28]	1·9	1·3	2·4	100·0	100·0	100·0
Burma [29]	1·9	1·3	1·7	—	98·6	95·0
Southern Rhodesia	0·6	1·2	1·8	99·8	99·5	99·6
Federated Malay States	1·0	1·2	1·9 [18]	100·0	97·9	99·9 [18]
Trinidad and Tobago	0·5	1·0	1·0	98·6	99·4	—
Jamaica	0·5	0·8	0·8	99·7	99·9	—
Malta	0·4	0·5	0·8	100·0	100·0	100·0
British Guiana	0·3	0·5	0·4	97·9	99·8	—
Gibraltar [28]	0·2	0·4	0·4	100·0	100·0	—
Northern Rhodesia	0·1	0·4	0·4	99·9	99·8	97·1
Territories granting no preference in 1948 [30]	6·1	8·2	10·4	100·0	100·0	100·0
Total of above	97·6	97·1	95·8			
Weighted average						

[1] Includes Burma after it left the Commonwealth, as preference continued to be granted. Otherwise " British " is defined as in the U.K. Trade Returns.

[2] Includes results of Geneva tariff negotiations under G.A.T.T. in 1947 (cf. footnote 11 and footnote 2 to p. 252).

[3] Allows for surtax on U.S. goods of $\frac{2}{15}$ or $\frac{1}{15}$ of duty. Also allows for provisions relating to exchange depreciation. About half of the fall in the percentage margins of preference between 1937 and 1948 is due to changes in the pattern of trade.

[4] In 1929 and 1937 margins are expressed as a percentage of the f.o.b. value of imports in terms of Australian currency in order to achieve comparability with 1948. This involved reducing 1937 margins of preference and tariff rates as shown in the tariff list in the ratio of 125 : 110 and increasing 1929 margins and rates in the ratio 100 : 110. In 1937 and 1948 allowance was made for primage duty and also for the Exchange Adjustment Act in 1937.

[5] Preference granted by charging same duties as the U.K. on U.S. goods and admitting U.K. goods free of duty.

[6] High because spirits and tobacco formed so large a proportion of dutiable imports.

[7] Allows for surtax of 30% of duty on most goods from the U.K. and the U.S.

[8] Allows for discount of 10% of duties of over 15% on U.K. goods. The change in the pattern of trade between 1937 and 1948 tended to increase the average margin of preference on all imports from the U.K., and the true fall was thus larger, say 24% to 10–11%. Of this fall nearly one-half was due to price changes. See also footnote 2 to page 252.

[9] Allows for discount of 10% of duties of over 15% on U.K. goods and for

and Average Margins of Preference

C. Percentage of imports from the U.K. enjoying preference.[22]			D. Percentage average margin of preference on goods enjoying preference.			E. Percentage average margin of preference on all imports from the U.K.		
1929.	1937.	1948.[2]	1929.	1937.	1948.[2]	1929.	1937.	1948.[2]
28–29	40–43 [25]	32–34 [25]	5	7	4–5	1	3 [26]	1–2
90–93	88–91	88–91	14–16	22	15–16	13–14	19–20	13–14
6–8	50	24–25 [18]	7–8	12	11–12 [18]	0–1	6	3 [18]
62–63 [8]	88 [9]	85–87 [8]	11 [8]	23 [9]	12–13 [8]	7 [8]	20 [9]	10–11 [8]
8	10–12 [13]	29–31 [14]	9–10	13–31 [13]	16–17 [14]	1	1–2 [15]	5 [14]
83–86	88–90	90–91	18–19	26 [8]	18 [8]	16	23–25 [8]	16–17 [8]
0	24	23 [16]	—	13	16 [16]	0	3	4 [16]
8	74–87	86–93	92–99 [6]	34–44	33–38	7	26–39	29–35
0	70–86	65–68 [11]	—	9–10	8–9 [11]	0	7–8	5–6 [11]
0	5	7	—	15	16–24	0	1	1–2
— [29]	62–92	61	— [29]	14	17	— [29]	9–13	11
93–94	96	97 [27]	6–7	19–20	15 [27]	6	19	14–15 [27]
0	44–58	36 [12]	—	14–15	13–14 [12]	0	6–8	5 [12]
90	64 [24]		11–16	19 [10]		10–14	12 [10]	
84	83		9	15		7	12–13	
0	70	76	—	12	13	0	8	10
90	93		17	18 [7]		15	17 [7]	
5	5–7		13	34–39		1	2	
42	93–97	98 [27]	10–11	9–10	10 [27]	4	9–10	10 [27]
0	0	0	—	—	—	0	0	0
35–36	55–57	49–51 [21]	13	19–20	14–15 [21]	5	10–11	7 [21]

excise duty of 3% on U.S. goods. Of the large rise between 1929 and 1937 in the percentage of imports from the U.K. given preference, 6 points are due to the change in the pattern of trade.

[10] Allows for surtax of 15% of duty on certain goods from the U.K. and the U.S.

[11] Does not include results of Geneva tariff negotiations in 1947.

[12] Malayan Union.

[13] Takes no account of additional 10% duty on certain U.K. goods.

[14] 1948 rates weighted by 1947 values (latest available when calculations made).

[15] Allows for additional 10% duty on certain U.K. goods.

[16] Singapore only.

[17] Includes Pakistan.

[18] 1948 rates weighted by 1947–48 values (latest available when calculations made). Includes Pakistan up to August 14, 1947, only. Weighted average thus assumes that Pakistan granted preference to same proportion of U.K. imports and granted same average margin of preference in the period August 15, 1947–March 31, 1948, as India. Of the fall in the percentage of imports from the U.K. given preference between 1937 and 1948, 10 points are due to the change in the pattern of trade.

[19] *Official Year Book* figure is 3·8, compared with 3·4 obtained by this calculation.

[20] Nigeria (including British Cameroons), Gold Coast (including Togoland), Kenya, Uganda, Tanganyika, Zanzibar, Nyasaland, Anglo-Egyptian Sudan, Palestine, Aden, New Guinea and Papua.

Notes continued on page 243.

General Notes to Table I

In calculating the margins of preference it was sometimes necessary to give upper and lower limits for a small percentage of items for which it was impossible to reconcile the classifications in the trade returns with those in the tariff lists. This kind of difficulty accounts for the outside limits in columns C, D and E, which take the place of precise figures. It also, together with rounding, accounts for the apparent slight inconsistencies between columns C, D and E and for the fact that the figures in column B are sometimes less than 100%.

Calculations for Australia and South Africa to replace the figures taken from *Official Year Books*, and slight revisions elsewhere account for the discrepancies between the figures for 1937 given here and those in the table published in the Economic Journal for September 1952 (G. D. A. MacDougall, "British and American Exports: A Study Suggested by the Theory of Comparative Costs." Part II, Appendix E.).

Column A: Calculated from *Annual Statement of Trade of the U.K.*

Columns B–D: Financial years beginning July 1 for Australia and April 1 for India and for Canada 1929–30 and 1937–38. Calendar years for Canada 1948 and for all other countries.

Weighting: The margin of preference on each country's total imports from the U.K. is the mean of the margins of preference on each item weighted as follows:

(*a*) New Zealand, Australia, Northern and Southern Rhodesia, South Africa and Malta for all years; British Guiana, Eire and Hong Kong for 1937; Eire and Ceylon for 1948: value of imports originating in the U.K.

(*b*) Channel Islands, Federated Malay States, Gibraltar and Straits Settlements for all years; Burma and Ceylon for 1937; Hong Kong and Burma for 1948: U.K. exports of "U.K. produce and manufactures."

(*c*) India for all years; Eire for 1929; Canada for 1948: value of imports consigned from the U.K.

(*d*) Canada, Jamaica, Trinidad and Tobago for 1929 and 1937; British Guiana for 1929: margins of preference on each item were weighted by the value of imports from the U.K. actually admitted at preferential rates and then to obtain the average margin of preference on all imports from the U.K. the total of the margins so weighted was expressed as a percentage of the total value of imports consigned from the U.K. (for Canada, British Guiana and Trinidad 1929 and Canada 1937) or of the total value of imports originating in the U.K. (for the others). For these countries therefore some of the figures in columns C and E have a slight downward bias relatively to the others, since the weight given to items having no preference includes goods which did not qualify for preferential treatment because an insufficient percentage of their value was the result of British labour. This is not sufficient to affect the general picture.

To obtain average figures for all British countries covered, the figures for each country were weighted according to the value of exports of U.K. produce and manufactures to it (column A), except column D, which was weighted according to the value of exports of U.K. produce granted preference by each country.

The comparability of margins of preference for different countries is slightly reduced by differences in methods of valuing imports (c.i.f., f.o.b., etc.); but this does not affect the general picture.

Trinidad, Jamaica, British Guiana, Gibraltar: No calculations made for 1948; no sufficiently recent trade returns available when work was done.

Even where U.K. goods enjoyed a preference, they often had to pay substantial duties, the average rate on such goods being 13–16%; had the goods been American they would have paid, on average, 25–30%. Many of these duties were, of course, imposed primarily to raise revenue rather than to protect domestic producers.

(b) *Preferences Accorded by the U.K. on imports from British Countries in* 1929

Preferences were introduced into the McKenna duties in 1919 and into the Key Industry duties in 1921, but with few exceptions the goods concerned were not important in Commonwealth trade. In 1929 preferences were granted on only 7% of U.K. imports from British countries, among the most important being those on sugar, cocoa, coffee, preserved fruits, spirits, wines, tobacco and road vehicles.

Many of the preferences granted were high, and averaged between about 30% and 50% (owing to statistical difficulties the margin of error is here unusually great), but as so few goods were involved, the average margin of preference on all U.K. imports from British countries was only 2–3%, well below the average preference enjoyed by British exports to the Commonwealth as a whole, and very much less than the preferences accorded by countries such as Australia and New Zealand, which, even in 1929, averaged 13–14% and 16% respectively. It would, however, be unwise to make too much of these comparisons, since, among other things, the conditions governing markets for primary products and for manufactures are very different.

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[21] Figures for countries for which 1948 material was not available assumed to have changed since 1937 in same proportion as average of rest.

[22] Refers to imports from the U.K. that were covered in this calculation.

[23] This figure is relatively low because *Report on Trade and Shipping of the Dominion of New Zealand 1948* was not available when the calculations were made. See footnote 1 to Table II.

[24] Fall from 1929 due wholly to change in pattern of trade.

[25] Large part of rise 1929–37 and fall 1937–48 due to changes in pattern of trade (see also footnote 1 to p. 252).

[26] Duties are levied only on intoxicating liquors and tobacco.

[27] In 1948 some of the duties listed in the printed Customs tariffs were wholly or partially suspended. Allowing for these suspensions the figures in columns C–E would be approximately:

	C.	D.	E.
Southern Rhodesia	92	13	12
Northern Rhodesia	59	8	5

[28] In Singapore the only Customs duties levied are on intoxicating liquors, tobacco and petroleum. In Singapore and Hong Kong there is also a "first registration fee" of 15% on motor vehicles not of British Commonwealth origin. This was treated as a preference of 15%.

[29] Included in India for 1929 in respect of C, D and E.

The goods that enjoyed preference often had to pay a high rate of duty, usually of a revenue nature. The average worked out at about 100%, so that the margin of preference reckoned as a percentage of price *including* duty on Commonwealth goods was much lower than the figure of 30–50% given in the last paragraph.

The Position in 1937

(a) *Preferences Accorded U.K. goods in British Countries in* 1937

Between 1932 and 1935 many British countries introduced preferences on U.K. goods for the first time. These included the Straits Settlements, the Federated Malay States, Hong Kong, Ceylon and Malta among the countries included in our calculations, and other small trading countries such as Gambia, Sierra Leone, St. Helena, Seychelles, Gilbert and Ellice Islands, Solomons and Tonga. In addition, many countries that had already been granting preference in 1929 widened the range of their imports from Britain on which preference was given.

By 1937 the proportion of U.K. exports to the Commonwealth enjoying preference had, according to our calculations, risen to about 56%, compared with about 36% in 1929. This increase is due in part to a change in the pattern of trade, which would have raised the 1929 figure of 36% to about 40% in 1937, even if there had been no extension of preference; [1] but the great bulk of the rise to 56% is the result of new preferences. Those granted by India and Canada were of major importance.

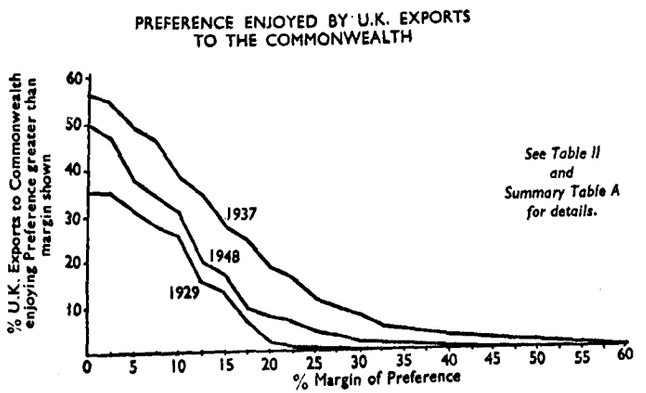
Alongside the rise in the proportion of U.K. goods enjoying preference, there were substantial increases in the margins of preference on preferred goods. The proportion of U.K. exports to the Commonwealth enjoying preferences of over 20% jumped from one-fortieth in 1929 to one-fifth in 1937. The average preference on goods receiving preference rose from 13% to 19–20%.

As a result of these two developments—new preferences and increases in the margins—the average rate of preference on all U.K. exports to the Commonwealth rose from 5% in 1929 to 10–11% in 1937. Not much of this rise can be accounted for by changes in the pattern of trade or by changes in prices that altered

[1] In particular, a large part of the rise in the proportion of South African imports from the U.K. granted preference from about 28% in 1929 to 40% or more in 1937 can be accounted for by the change in the pattern of trade, while the surprising fall in the percentage for Trinidad and Tobago is entirely due to the change in the trade pattern.

the *ad valorem* incidence of specific duties. It was mainly the result of changes in rates of duty.

How far were these results accomplished by reducing rates of duty on U.K. goods, and how far by increasing the rates on goods from other countries (represented by the United States according



to our definition)? It is convenient to consider separately the manner in which: (i) margins of preference were widened on goods already enjoying preference in 1929; (ii) preferences were accorded to new goods.

(i) *Goods already enjoying preference in* 1929. We have worked out for 1929 the average rate of duty on U.K. goods (the U.K. rate) and the rate they would have paid had they been American (the U.S. rate). We have also worked out for comparison what the U.K. and U.S. rates would have been if the 1937 tariff lists had been operative in 1929, *i.e.*, we have applied the 1937 tariff rates to the 1929 trade. In this way we can eliminate the effects of changes in the pattern of trade and in prices, and are left with the effects of changes in tariff lists on the U.S. and U.K. rates.

In most countries the U.S. rate for 1937 is higher than that for 1929, and for all countries taken together it rises from 25–30% in 1929 to 33–36% in 1937. The average U.K. rate remained at around 15% in each year. However, the fall in prices between 1929 and 1937 raised the percentage rate on U.K. goods to 17–19%, and that on U.S. goods was raised further to 37–41%.

TABLE II

% Distribution of British Countries' Imports from the U.K. According to Margin of Preference Granted

	South Africa.			Australia.[16]			India.			Canada.			Eire.		
	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.
Coverage, %:	99·5	95·8	96·6	85·3 [6]	86·3 [7]	93·1	97·0	99·1	98·7	100·0	99·2	96·9	98·9	89·0 [10]	96·8
Percentage margin.															
0	71·9	59·4	68·3	7·5	12·7	10·7	94·3	49·8	76·0	37·8	12·6	12·9	92·3	84·8	72·3
Up to 2·5	0·1	0·2	2·7	0·2	0·0	6·9	—	2·6	1·7	2·1	—	6·4	0·1	0·1	0·3
2·6– 5·0	25·5	27·9	27·9	0·4	0·4	8·1	—	0·4	—	5·2	0·2	6·2	2·2	1·0	0·5
5·1– 7·5	1·3	1·4	0·1	5·7	0·1	3·5	5·4	4·3	5·3	3·0	0·9	18·7	0·0	0·0	3·3
7·6–10·0	1·2	1·6	0·9	0·5	1·3	3·9	—	30·2	1·2	8·7	4·4	10·6	0·1	0·6	2·9
10·1–12·5	—	0·0	0·0	30·3	2·9	26·9	—	2·0	13·5	30·6	7·4	4·7	5·2	0·8	11·1
12·6–15·0	—	9·2	—	3·2	18·1	6·0	0·3	1·0	—	8·1	9·4	4·7	—	0·5	0·7
15·1–17·5	—	0·2	—	37·8	10·5	12·2	—	—	—	3·9	8·9	20·6	—	2·1	2·3
17·6–20·0	0·0	0·0	—	3·4	14·0	0·5	—	0·2	—	0·5	13·8	4·1	—	0·4	1·0
20·1–22·5	—	—	—	3·3	11·5	4·1	—	—	0·0	0·1	2·6	4·2	0·0	0·9	0·1
22·6–25·0	—	0·1	—	0·0	1·0	5·6	—	9·5	0·8	0·0	12·6	6·0	0·1	0·6	2·9
25·1–27·5	—	—	—	3·2	9·3	3·9	—	—	—	—	2·6	0·8	—	—	0·0
27·6–30·0	—	—	—	0·1	3·4	2·8	—	—	0·0	0·0	4·3	0·1	0·0	0·0	0·1
30·1–32·5	—	—	0·0	2·5	6·2	2·1	—	—	—	—	8·4	—	—	0·0	—
32·6–35·0	—	—	0·1	0·3	1·6	0·2	—	—	—	0·0	1·2	0·0	—	0·0	0·0
35·1–37·5	—	0·0	—	0·4	0·6	0·4	—	—	—	0·0	0·9	0·0	—	—	—
37·6–40·0	—	—	—	0·2	1·1	0·6	—	—	0·3	0·0	3·9	0·0	—	0·0	0·6
40·1–42·5	—	—	—	0·4	0·7	0·0	—	—	1·2	—	0·5	0·0	0·0	0·0	0·1
42·6–45·0	—	—	—	0·6	0·2	0·3	—	—	—	—	0·8	—	—	—	0·6
45·1–47·5	—	—	—	—	0·1	0·0	—	—	—	—	0·2	—	—	—	0·0
47·6–50·0	—	—	—	0·0	0·1	0·1	—	—	—	—	—	—	—	—	—
50·1–52·5	—	—	—	0·0	3·0	0·6	—	—	—	—	0·1	—	—	—	—
52·6–55·0	—	—	—	0·0	0·1	0·5	—	—	—	0·0	0·8	—	—	—	0·1
55·1–57·5	—	—	—	—	0·3	0·1	—	—	—	—	0·1	—	—	—	0·6
57·6–60·0	—	—	—	—	0·1	—	—	—	—	—	0·0	—	—	—	0·2
60·1 and over	—	—	—	0·0	0·7	0·0	—	—	—	0·0	3·4	—	—	—	0·3
	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	91·8 [11]	100·0

	New Zealand.			Straits Settlements.			Ceylon.			Hong Kong.			Southern Rhodesia.		
	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.
Coverage, %:	96·3	94·8	67·4 [1]	100·0	100·0	99·6	100·0	81·8 [8]	96·6	100·0	100·0	100·0	95·7	97·5	97·6
Percentage margin.															
0	14·4	10·8	10·4	100·0	76·5	77·1	100·0	17·1	35·4	100·0	95·2	92·8	5·3	4·1	2·7
Up to 2·5	0·0	0·1	0·0	—	—	—	—	0·1	0·2	—	—	—	1·1	0·4	0·9
2·6– 5·0	0·1	0·3	0·1	—	—	—	—	19·4	12·8	—	—	—	48·2	30·2	33·4
5·1– 7·5	0·9	6·7	3·0	—	—	0·3	—	10·8	13·1	—	—	0·3	18·7	1·6	0·8
7·6–10·0	7·1	3·1	9·0	—	14·9	—	—	47·9	38·4	—	0·2	—	0·1	20·4	8·7
10·1–12·5	0·4	8·7	12·2	—	—	—	—	—	0·0	—	—	—	21·2	5·2	3·8
12·6–15·0	10·9	0·7	1·9	—	—	8·1	—	—	0·0	—	3·1	—	0·4	9·6	17·4
15·1–17·5	0·3	2·6	31·4	—	—	14·5	—	0·5	—	—	—	6·3	2·6	0·0	0·4
17·6–20·0	58·0	9·5	0·0	—	8·6	—	—	3·8	0·1	—	1·5	—	0·3	6·7	23·8
20·1–22·5	0·0	4·5	2·8	—	—	—	—	—	—	—	—	—	1·8	0·0	0·0
22·6–25·0	4·5	10·8	7·4	—	—	—	—	—	—	—	—	—	—	2·0	2·8
25·1–27·5	—	0·7	0·0	—	—	—	—	0·4	—	—	—	—	0·1	—	—
27·6–30·0	3·0	18·4	11·8	—	—	—	—	—	—	—	—	—	—	1·9	1·2
30·1–32·5	—	1·5	3·7	—	—	—	—	—	—	—	—	—	0·1	0·1	—
32·6–35·0	—	7·7	2·2	—	—	—	—	—	—	—	—	—	—	0·7	1·2
35·1–37·5	—	0·4	0·0	—	—	—	—	—	—	—	—	—	—	—	—
37·6–40·0	—	0·3	0·0	—	—	—	—	—	—	—	—	—	—	0·2	—
40·1–42·5	—	0·1	0·7	—	—	—	—	—	—	—	—	0·6	—	0·0	—
42·6–45·0	0·3	—	2·7	—	—	—	—	—	—	—	—	—	—	—	—
45·1–47·5	—	13·1	0·0	—	—	—	—	—	—	—	—	—	—	0·1	—
47·6–50·0	0·1	0·0	0·7	—	—	—	—	—	—	—	—	—	—	—	—
50·1–52·5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
52·6–55·0	—	—	—	—	—	—	—	—	—	—	—	—	—	12·7	—
55·1–57·5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
57·6–60·0	—	—	—	—	—	—	—	—	—	—	—	—	—	0·1	—
60·1 and over	0·0	0·0	—	—	—	—	—	—	—	—	—	—	0·1	4·0	2·9
	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

	Federated Malay States.			Trinidad and Tobago.			Jamaica.			Malta.			British Guiana.		
	1929.	1937.	1948.	1929.	1937.	1948.[2]	1929.	1937.	1948.[3]	1929.	1937.	1948.	1929.	1937.	1948.[3]
Coverage, %:	100·0	85·3 [9]	99·1	93·8	99·4	—	99·7	93·9	—	100·0	100·0	96·4	97·9	98·6	—
Percentage margin.															
0	100·0	48·8	64·0	10·7	36·3		16·5	18·4		100·0	29·9	24·7	10·1	7·5	
Up to 2·5	—	0·6	—	2·1	0·3		0·2	0·2		—	0·1	0·1	0·2	0·0	
2·6– 5·0	—	—	7·3	4·2	0·4		56·9	36·7		—	2·7	8·5	10·3	8·8	
5·1– 7·5	—	6·4	0·1	10·4	1·5		0·1	0·1		—	0·8	0·9	18·5	20·2	
7·6–10·0	—	28·0	9·4	21·2	8·9		19·4	26·6		—	52·3	6·9	3·9	8·7	
10·1–12·5	—	—	0·0	38·4	39·2		1·5	4·5		—	1·1	4·7	2·1	3·3	
12·6–15·0	—	—	1·3	0·3	0·5		0·2	1·6		—	1·2	51·4	2·8	12·9	
15·1–17·5	—	—	1·1	0·3	1·9		0·0	1·7		—	3·5	0·4	29·9	24·9	
17·6–20·0	—	8·2	16·2	3·3	1·6		0·1	4·1		—	5·0	1·2	6·8	2·7	
20·1–22·5	—	—	—	7·3	2·9		0·0	0·1		—	—	1·2	4·2	0·1	
22·6–25·0	—	—	0·6	0·7	2·3		0·1	0·2		—	—	—	4·2	0·2	
25·1–27·5	—	—	—	0·8	0·6		0·2	0·2		—	3·3	—	0·1	0·8	
27·6–30·0	—	6·9	—	0·2	0·1		—	1·7		—	—	—	0·7	0·6	
30·1–32·5	—	—	—	0·1	0·0		—	—		—	—	0·0	0·1	0·0	
32·6–35·0	—	—	—	—	—		0·0	2·0		—	—	—	0·8	0·0	
35·1–37·5	—	—	—	0·0	0·1		—	0·0		—	0·0	—	0·0	2·0	
37·6–40·0	—	—	—	0·0	0·0		2·0	0·6		—	—	—	0·0	0·0	
40·1–42·5	—	—	—	—	0·9		—	0·2		—	—	0·0	0·0	0·0	
42·6–45·0	—	—	—	0·0	0·0		—	0·5		—	—	—	0·0	0·1	
45·1–47·5	—	—	—	—	—		—	—		—	—	—	—	—	
47·6–50·0	—	—	—	—	—		—	0·1		—	—	—	0·0	—	
50·1–52·5	—	—	—	—	0·0		—	—		—	—	—	0·0	0·0	
52·6–55·0	—	—	—	—	0·0		—	—		—	—	—	—	0·2	
55·1–57·5	—	—	—	0·0	0·2		—	—		—	—	—	0·4	0·5	
57·6–60·0	—	—	—	—	0·0		—	—		—	—	—	0·2	—	
60·1 and over	—	1·1	—	0·0	2·3		2·8	0·5		—	0·1	—	4·7	6·5	
	100·0	100·0	100·0	100·0	100·0		100·0	100·0		100·0	100·0	100·0	100·0	100·0	

	Gibraltar.			*Northern Rhodesia.*			*All British countries covered.*[11]			*Percentage distribution of U.K. imports from British countries according to margin of preference granted.*		
	1929.	1937.	1948.[2]	1929.	1937.	1948.	1929.	1937.	1948.	1929.	1937.	1948.
Coverage, %:	100·0	100·0	—	99·3	84·0 [4]	88·3 [5]				96·3 [13]	91·0 [14]	90·4 [15]
Percentage margin.												
0	95·3	95·0		58·2	4·2	2·4	64·8	46·3 [12]	51·7	96·5	41·4	49·7
Up to 2·5	—	—		1·8	1·4	0·3	0·3	0·5	2·6	0·4	—	3·0
2·6– 5·0	—	—		2·1	40·4	22·0	3·9	6·2	7·8	1·1	10·6	0·2
5·1– 7·5	—	—		7·2	0·1	0·2	3·0	1·9	3·2	0·1	—	13·7
7·6–10·0	—	—		2·7	16·9	63·5	1·7	8·5	4·8	0·0	19·4	22·7
10·1–12·5	1·6	1·7		20·4	13·7	0·1	9·7	2·7	9·9	0·5	0·2	1·0
12·6–15·0	3·1	—		0·0	20·2	6·5	2·3	6·3	2·9	—	17·5	4·3
15·1–17·5	—	—		7·0	0·4	—	7·1	3·3	7·2	0·7	1·9	0·2
17·6–20·0	—	—		0·6	0·3	0·7	4·7	5·5	1·4	—	4·7	4·3
20·1–22·5	—	—		—	—	—	0·6	2·7	1·4	0·0	0·0	0·7
22·6–25·0	—	—		—	—	—	0·3	4·2	2·6	—	0·1	0·0
25·1–27·5	—	—		—	—	—	0·6	1·9	0·8	—	0·1	—
27·6–30·0	—	—		0·0	—	—	0·2	2·8	1·4	—	0·4	0·1
30·1–32·5	—	—		—	—	—	0·4	2·2	0·7	—	0·2	0·0
32·6–35·0	—	—		—	—	—	0·1	1·1	0·2	0·1	1·2	0·1
35·1–37·5	—	—		—	0·1	—	0·1	0·2	0·1	—	0·5	—
37·6–40·0	—	—		—	2·3	4·3	0·0	0·7	0·2	—	—	—
40·1–42·5	—	—		—	—	—	0·1	0·2	0·3	—	—	—
42·6–45·0	—	—		—	—	—	0·1	0·1	0·3	—	—	—
45·1–47·5	—	—		—	—	—	—	1·2	—	0·1	0·2	—
47·6–50·0	—	—		—	—	—	0·0	0·0	0·1	—		0·0
50·1–52·5	—	—		—	—	—	—	0·5	0·1	—		—
52·6–55·0	—	3·3		—	—	—	—	0·3	0·1	—	1·6	—
55·1–57·5	—	—		—	—	—	—	0·1	0·1	—		—
57·6–60·0	—	—		—	—	—	—	0·0	0·0	—		—
60·1 and over	—	—		—	—	—	0·0	0·6	0·1	0·5		—
	100·0	100·0		100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

Notes to Table on p. 250.

(ii) *Goods First Granted a Preference between* 1929 *and* 1937. On only one-tenth of these goods, by value, was the rate payable on U.K. goods reduced. On 95% the rate on U.S. goods was increased and on no less than 60% the rate on U.K. goods was increased as well.

The increase in preference accorded to U.K. goods in British countries during this period was thus achieved very largely by increasing the rates on foreign goods, and only in minor degree by reducing the rates on U.K. goods; on the contrary, these tended to be increased as well.

GENERAL NOTES TO TABLE II

In Table I outside limits were given instead of precise figures where it was impossible to reconcile the tariff list with the trade return for particular items. These imprecise items have been omitted from the frequency distributions in Table II so as to obtain a clearer presentation of the data, and the coverage for the frequency distributions is therefore less good than for the calculations whose results are shown in Table I. The coverage is, however, given for each distribution, and it will be seen that it is generally sufficient to give a fairly complete picture of amounts of preference granted. Where coverage is definitely insufficient (Channel Islands and Burma) distributions have not been constructed.

For reasons of presentation, figures are given to one decimal point, but this degree of precision should not be taken as an indication of the margin of error involved.

See also notes to Table I.

FOOTNOTES TO TABLE II

[1] Calculation made from *External Trade 1948* (Census and Statistics Department, Wellington, N.Z., 1951), as *Report on Trade and Shipping of the Dominion of New Zealand 1948* was not available when the calculations were made. Of trade omitted at least 12% (of imports from U.K.), probably much more, granted preferences of 7·6–17·5%.

[2] Sufficiently recent trade figures not available when calculation was made.

[3] Additional duty of 10% on 8·2% of goods imported from the U.K.

[4] Over half trade omitted granted preference of 5% or 10%. The rest was granted none or preferences of up to 25%.

[5] Trade omitted was mostly granted 5% or 10% preference.

[6] Of trade omitted 7% (of imports from U.K.) was granted preference of 11–15%. Rest was granted none or preferences of up to 85%.

[7] Of trade omitted 4% (of imports from the U.K.) was granted preference of 13–22%. Rest was granted none or preferences of up to and over 100%.

[8] Most of trade omitted was either granted no preference or a preference of 10%.

[9] Most of trade omitted was either granted no preference or preferences of up to 15%.

[10] Preference on trade omitted varied between −10% (see note 3) and over 100%.

[11] Excluding British Guiana, Jamaica, Trinidad and Tobago and Gibraltar. Including territories granting no preference in 1948.

[12] Including 0·8 exports to Eire, on which additional duty of 10%.

[13] Of trade omitted 2·7% was granted preference of between 27% and 61%, 0·4% was granted preference of between 2% and 10%. The preference granted on the rest varied up to over 200%.

[14] Of trade omitted, at least 4·1% was granted preference at rates well above 30%, and at least a further 1·4% at rates above 15%. The rest was granted either no preference or preferences varying up to 25%.

[15] Of trade omitted, at least 3% was granted preference of 20% or less. A further 1·5% was granted either no preference or various rates up to 33·3%. A further 3% was granted preference of between 9% and 28%, and nearly a further 2% was granted preference of 47–53%.

[16] See footnote 4 to Table I.

(b) *Preferences accorded by U.K. on Imports from British countries in* 1937.

The Import Duties Act and the Ottawa Agreements greatly widened the scope of preference on U.K. imports from the Commonwealth. By 1937 over 60% of such imports enjoyed preference, compared with only 7% in 1929.

The average margin on goods accorded preference fell greatly, but this has no signficance, since the high level in 1929 reflected exceptional margins on a very few items, and the great bulk of the new preferences were of not more than 20%.

The average margin on all U.K. imports from British countries was raised from 2–3% to 10–12%, *i.e.*, to roughly the same average level as that enjoyed by U.K. exports to the Commonwealth as a whole.

A large part of this increase was, of course, achieved by imposing a tariff on foreign goods while retaining duty-free entry for goods from British countries. Taken in conjunction with the results obtained for U.K. exports to the Commonwealth, this means that the intensification of Imperial Preference during the thirties was achieved largely by increasing tariffs against the outside world, rather than by reducing tariffs between Commonwealth countries.

The Position in 1948

Between 1937 and 1948 there were important reductions in Imperial Preference. The average percentage margins of preference fell at least half-way back to the pre-Ottawa level. This was the result partly of the large rise in prices which reduced the *ad valorem* incidence of specific duties and partly of alterations in rates of duty made at the Geneva Tariff Negotiations under G.A.T.T. in 1947 and, for example, in the Trade Agreements between the U.K. and the U.S. (1938), the U.S. and Canada (1938) [1] and the U.K. and India (1939). (On the other hand, increased preferences were obtained under the U.K./Eire Agreement of 1938.) But while the average rate of preference was markedly reduced, the general structure of preference was not seriously modified; the proportion of intra-Commonwealth trade enjoying preference did not fall greatly.

[1] This Agreement made various changes which reduced the preference accorded to U.K. over U.S. goods, including the removal of a special excise tax on a long list of goods imported from non-British countries.

(a) *Preferences Accorded U.K. goods in British Countries in* 1948

The proportion of U.K. exports to British countries enjoying preference fell from about 56% in 1937 to about 50% in 1948, and a significant part of this fall can be explained by changes in the pattern of trade. The elimination of preferences was thus relatively unimportant. The proportion of trade enjoying preference fell quite markedly in South Africa, but this was largely the result of changes in the trade pattern.[1] India is the only important country where the elimination of preferences was of major significance (partly as a result of the 1939 Trade Agreement with the U.K.); the proportion of trade accorded preference fell from 50% in 1937 to about 25% in 1948, but even here some 10 points of the fall was the result of changes in the pattern of trade.[2]

But while comparatively few preferences were eliminated between 1937 and 1948, there were large falls in many percentage rates of preference. The average rate on goods receiving preference fell from 19–20% to 14–15%; and as changes in the trade pattern tended to increase the average rate, the true fall on a comparable basis was larger, and probably about one-third (roughly from 22% to 14%). High preferences became much less important; the proportion of Britain's exports to the Commonwealth enjoying preferences of over 20% fell from one-fifth in 1937 to under one-tenth in 1948.

The average margin of preference on *all* U.K. exports to the Commonwealth fell from 10–11% to 7% and by rather more assuming a constant pattern of trade. Of this fall about half seems to have been due to the rise in prices and about half to tariff changes.

The fall in margins of preference was on balance, but not in all countries, associated with reductions in *percentage* rates of duty both on U.K. and on U.S. goods. There were, it is true, steep increases in the *tariff rates* charged by some of the Colonies, partly no doubt to maintain the real value of revenue from specific duties in the face of rising prices; and for all countries taken together we find some increase in the average U.K. and U.S. rates on goods enjoying preference in 1948 when the effects of changes in prices

[1] We are advised that these changes were temporary and resulted from Britain's inability to supply South Africa with many goods on which preferences were granted.

[2] The Geneva Agreement of 1947 scheduled the elimination of preferences on 8% of Canada's imports from the U.K. (1937 trade), but 7% of this consisted of items on which the duty on the U.K. product was to be raised. This required specific legislation which was not completed until 1949. Its effect does not therefore appear in the 1948 figures given here.

and in the pattern of trade have been eliminated. But the rise in prices more than offset these increases in tariff rates. The net result was that, for all countries taken together, the U.K. rate fell from 17–20% in 1937 to 14% in 1948 and the U.S. rate from 38–43% to 27–29% (based on the 1948 pattern of trade throughout).

(b) *Preferences Accorded by the U.K. on Imports from British Countries in* 1948

Between 1937 and 1948 there was some fall in the proportion of U.K. imports from the Commonwealth enjoying preference—roughly from 60% to 55%. Since the change in the pattern of trade tended to increase this proportion, the true fall was larger.

There was a large fall in the average margin of preference on goods receiving preference, from 17–20% to 11–13%; and, as the change in the trade pattern tended to increase the average margin, the true fall was greater, and probably about one-half. The proportion of trade enjoying preferences of over 10% fell from one-third to one-sixth.

The average rate on all imports fell from 10–12% to 6–7%. Using the 1948 pattern of trade throughout, the fall is greater, from 14–18% to 6–7%. Of this fall well under one-half seems to have been due to tariff changes, and well over one-half to the rise in prices which reduced the *ad valorem* incidence of specific duties; U.K. import prices in general nearly trebled between 1937 and 1948, and specific duties were of importance for many imports from British countries.

The fall in preferential margins was accompanied by large increases in rates of Customs duty, which were not wholly offset by the effects of higher prices, on imports from both Commonwealth and non-Commonwealth countries. But many of these increases were imposed for revenue purposes, and were largely matched by increases in excise duty. The average rate of Customs duty less excise duty on goods enjoying preference in 1948 fell from 6–10% to 2–4% for imports from Commonwealth countries and from 24–33% to 13–16% for imports from other sources (based on the 1948 pattern of trade throughout). These falls reflect wholly the effect of the rise in prices on the *ad valorem* incidence of specific duties.

Thus, for trade in each direction between Britain and the Commonwealth, the reduction in Imperial Preference between 1937 and 1948 was accompanied by a general fall in percentage rates of duty (net of excise duty for U.K. imports), just as the

TABLE III

Average Rates of Duty on Goods Enjoying Preference

	Goods already enjoying preference in 1929 (1929 pattern of trade).					
	1929 tariff rates. 1929 prices.		1937 tariff rates. 1929 prices.		1937 tariff rates. 1937 prices.	
	(1)		(2)		(3)	
	U.K. rate.	U.S. rate.	U.K. rate.	U.S. rate.	U.K. rate.	U.S. rate.
Union of South Africa	3	7	6–7	12–15	6–7	12–15
Australia (c)	14–23	29–39	17–20	37–43	18–21	39–45
India	11–17	18–26	7–8	11–13	9–10	14–16
Canada	17	28	18	42–43	18	42–43
Eire	31–37	40–45	77–90	106–126	92–108	127–150
New Zealand	10–11	29–30	9	32–33	9	33
Straits Settlements	(b)	(b)	(b)	(b)	(b)	(b)
Channel Islands	0	92–99	0	82–94	0	105–121
Ceylon	(b)	(b)	(b)	(b)	(b)	(b)
Hong Kong	(b)	(b)	(b)	(b)	(b)	(b)
Burma	Included in India					
Southern Rhodesia	5	12	4–5	18–19	5	19–20
Federated Malay States	(b)	(b)	(b)	(b)	(b)	(b)
Trinidad and Tobago	9–12	20–27	12–13	30–31	14	34–35
Jamaica	23	31	19–20	32–34	20–21	34–36
Malta	(b)	(b)	(b)	(b)	(b)	(b)
British Guiana	16	32	23–24	44–47	27–29	53–56
Gibraltar	40	53	40	53	51	68
Northern Rhodesia	9–10	19	9–10	20–22	9–11	21–23
Weighted average	13–16	25–30	14–16	33–36	17–19	37–41

U.K. rate : average percentage rate of duty on goods from the U.K.

U.S. rate : average percentage rate of duty had goods been from the U.S.

Change from (1) to (2) and from (4) to (5) reflects change in tariff rates.

Change from (2) to (3) and from (5) to (6) reflects change in prices (which affects *ad valorem* incidence of specific duties).

The high average rates of duty shown for some countries (such as Straits Settlements, Hong Kong, Federated Malay States and Gibraltar) are attributable in large part to the limited range of goods that enjoy tariff preferences and to the high level of duties on intoxicating liquors and tobacco (which are preferential).

increase in preference in the thirties had been accompanied by a general rise.

The Present Position (mid-1953)

Five years have elapsed since 1948, the latest year for which calculations have been made. Since then there have been further reductions in Imperial Preference, although the general picture given for 1948 cannot have been radically modified.

Probably the most important change has been the reduction

	Goods still enjoying preference in 1948 (1948 pattern of trade).					
	1937 tariff rates. 1937 prices.		1948 tariff rates. 1937 prices.		1948 tariff rates. 1948 prices.	
	(4)		(5)		(6)	
	U.K. rate.	U.S. rate.	U.K. rate.	U.S. rate.	U.K. rate.	U.S. rate.
Union of South Africa	3	8–11	3	8–9	2–3	7
Australia (c)	18–20	42–46	15–16	37–41	9	23–25
India	22	32	26–27	38–39	25–26	38–39
Canada	15	41	18	36	10	22
Eire	68–103	95–145	72–79	96–107	35–38	50–55
New Zealand	7–8	30–32	7–8	25–26	6–8	24–26
Straits Settlements	60	72	296	331	108	124
Channel Islands	0	36–45	0	62–65	0	33–38
Ceylon	14–15	22–24	26–27	35–36	23–24	31–32
Hong Kong	30–34	45–48	96–109	136–137	59–68	83–84
Burma	20–26	32–40	24–25	42–43	24	41
Southern Rhodesia	5	25	5	20	5	20
Federated Malay States	32	44	284–286	317–319	96	109–110
Trinidad and Tobago	(a)	(a)	(a)	(a)	(a)	(a)
Jamaica	(a)	(a)	(a)	(a)	(a)	(a)
Malta	12–13	24	27–29	41–42	19–20	33
British Guiana	(a)	(a)	(a)	(a)	(a)	(a)
Gibraltar	(a)	(a)	(a)	(a)	(a)	(a)
Northern Rhodesia	6–7	17–19	14–15	30–39	7–8	17–18
Weighted average	17–20	38–43	24–26	42–47	14	27–29

The figures for India, Burma and the Channel Islands are subject to particularly wide margins of error, possibly wider than those shown in the table.

See also notes to Summary Table C and to Table I.

(a) Not calculated; no sufficiently recent trade returns available when work was done.

(b) No preference in 1929.

(c) In all years amounts of duty paid were expressed as a percentage of the f.o.b. value of imports in terms of Australian currency in order to achieve comparability between the years (see footnote 4 to Table I).

in the *ad valorem* incidence of specific margins caused by a further rise in prices—British import and export prices in general have risen by around 25–30%. The results of the Annecy and Torquay tariff negotiations under G.A.T.T. in 1949 and 1951 scarcely affect our average figures, and it is unlikely that the reduction of preferences brought about in other ways has been much more important. The pattern of trade has also altered. We have not calculated the effect, beyond establishing that the shift in U.K. exports between Commonweath countries granting different

average margins of preference has on balance been of no importance.

It is impossible to give any precise details of the present position, but what rough calculations we have been able to make suggest that the following broad picture is unlikely to be very wide of the mark.

Something like one-half of both British exports to and imports from the Commonwealth enjoy preference, but in some Commonwealth markets for U.K. exports the proportion is much higher. Well under one-tenth of the trade in either direction enjoys preferences of over 20%, although there are still a few very high preferences of 50% or more. The average percentage margin of preference on all U.K. trade with the Commonwealth has been greatly reduced since the late thirties, and is now probably in the neighbourhood of 6% in either direction. The margin is still smaller—probably around 5% on U.K. exports to the Commonwealth—if it is reckoned as a percentage of the value of trade *including* duty on British goods, which is more relevant when assessing competitive power.

A figure of 5% may seem surprisingly low to those with experience of very high preferential margins; but such margins, as we have seen, are few and far between. There is no doubt that preferences are of very considerable importance in certain trades, where the rate is relatively high or the market highly competitive and sensitive to price differentials. For many years tariff preferences were overshadowed by direct trade and exchange controls and by the existence of sellers' markets. They will regain importance to the extent that these conditions change. But the effect of preferences on our total export trade cannot be more than marginal. Following a rough method of calculation used in an earlier article,[1] it seems unlikely that an average preference of around 5% on our exports to the Commonwealth can make a difference of more than, say, 5% in our total exports to the world as a whole—although even marginal exports of this size can, of course, be of crucial importance while the balance of payments remains precarious. It is certain that the effect of Imperial Preference on the total sales of U.S. manufacturers is entirely negligible.

Summary of Main Results

Even before Ottawa, Britain was enjoying an average preference of 13% on over one-third of her exports to British countries, giving an average preference of 5% on all her exports to the Commonwealth. In return she gave preferences (admittedly high ones) on only 7% of her imports from the Commonwealth, making an average rate of preference of 2–3% on all her imports from British countries.

[1] ECONOMIC JOURNAL, September 1952, p. 509.

By 1937, mainly as a result of the Ottawa Agreements, the proportion of trade enjoying preference had risen to well over one-half in each direction, and many old preferences had been increased. This intensification of Imperial Preference, which was considerably more important for Britain's imports than for her exports, raised the average margin of preference to 10–12% on all trade in each direction. It was achieved largely by raising tariff rates on foreign goods and not by reducing rates on intra-Commonwealth trade; the latter, on the contrary, tended to rise as well.

Since 1937 there has been a large reduction in Imperial Preference. The proportion of trade enjoying preference has not fallen greatly, and is still about one-half in each direction. But the average rate has fallen to about 6% on both imports and exports. (The rate is, of course, about twice as high on goods enjoying preference, and higher still on many items.) The reduction in Imperial Preference since 1937 has been the result, first, of tariff changes, including those negotiated under G.A.T.T. and in other Trade Agreements, and secondly—probably more important—of the very large rise in prices which has reduced the *ad valorem* incidence of specific margins. The rise in prices has also brought about a substantial fall in percentage rates of protective duty, both on intra-Commonwealth trade and on similar goods imported from outside the Commonwealth.

Nuffield College, Oxford. DONALD MACDOUGALL

University of Leeds. ROSEMARY HUTT

COMPARISONS BETWEEN INCREMENTS OF "UTILITY"

SINCE the publication of the Neumann–Morgenstern *Theory of Games* the concept of measurable "utility" has again come to the front of economic discussions, reviving the old controversy between the "cardinal" and the "ordinal" schools of thought. Recently Professor Robbins, in his review-article [1] on Sir Dennis Robertson's essay "Utility And All That," expressed his preference for the "ordinal" approach. He made, however, one reservation concerning comparisons of differences of "utility" and their ranking. The reservation referred to the proposition that "if we want, and are able, to say that a movement from A to B is rated more highly than a movement from B to C, then we are back in the world of cardinal magnitude. For it will then always be possible to find a point B between A and C such that the move from A to B is rated *just as* highly as the move from B to C, and that is really the same thing as saying that the interval A–C is *twice* the interval A–B." [2]

Professor Robbins points out that comparisons between preferences are being made by individuals and appear quite consistent with the "ordinal" approach, and that the example given by Sir Dennis implies only a judgment of equivalence but not a possibility of addition. If, on the other hand, such far-reaching restrictions were to be implied in the "ordinal" approach that comparisons between preferences would be interpreted as an implicit acceptance of "cardinal" measurement, then he would feel obliged to change camp and join the "cardinal" school.[3]

It may be more useful to discuss the problem in terms of different degrees of measurability rather than on the basis of the distinction between the "ordinal" and "cardinal" approach. In this connection a paper published recently by Professor A. A. Alchian in the *American Economic Review* [4] is particularly helpful.

[1] Lionel Robbins, "Robertson on Utility and Scope," *Economica*, May 1953.
[2] D. H. Robertson, *Utility and All That*, p. 18.
[3] Lionel Robbins, *op. cit.*, p. 104.
[4] A. A. Alchian, "The Meaning of Utility Measurement," *American Economic Review*, March 1953. While the main purpose of the article is the explanation and appraisal of the contribution made to economics by the Neumann–Morgenstern hypothesis, the author also attempts a systematic classification of the aims and methods of measurement relevant to the concept of "utility." In this note the general propositions concerning the different types of measurement are essentially based on that analysis.

In this note a restatement of the problem posed by Professor Robbins in terms of degrees of measurability will be attempted, and some conclusions drawn on the comparisons between differences of "utility."

The following general propositions with reference to "utility" measurement appear to have been established:

1. Ordinal comparisons can be conceived as the freest, or the least unique, method of measurement; the assigning of figures to the entities compared requires here for consistency only the same ranking of numbers as between the various measurements. In other words, we can assign numbers to the objects or situations compared in an arbitrary way subject to one important restriction that increments between the same entities have always the same sign. If A is preferred to B, it must correspond to a greater number, whatever the set of numbers chosen for measurement. It follows that "marginal utility" does not really disappear, but it is a concept which has only a sign (positive or negative) and no numerical value whatsoever, and it is impossible to say whether it is diminishing, increasing or constant. In technical language we can say that this method implies the measurement of "utility" up to a monotonic transformation only.

2. A more precise method of measurement is one which enables us to devise measures which are identical up to a linear transformation. The choice of zero and of the unit of measurement is arbitrary, but once we have assigned numbers to two objects or situations, then only unique numbers can be assigned to the other objects or situations compared. So far the measuring of "utility" up to this degree of precision has proved theoretically possible only in the case of choices involving uncertainty, and even this requires the rather artificial and not widely accepted assumption that when faced with uncertain prospects men are guided, as a rule, by mathematical expectations based on the calculus of probability, and any satisfaction or dissatisfaction from risk-taking as such is of no major consequence.[1] The essential property of measurability up to a linear transformation is that each set of measures can be obtained from any other on the basis of an equation of the type $y = ax + b$. This implies the pos-

[1] In addition there is also the controversial issue of the importance of choices involving risk in actual experience. For completely opposed views on the subject cf. I. M. D. Little, *Critique of Welfare Economics*, pp. 31–2, and A. A. Alchian, *op. cit.*, p. 34.

sibility of making quantitative comparisons *between the increments* within a series of measurements; we can say, for instance, that the increment from A to B is twice as great as the increment from B to C, for this will be true, irrespective of the scale used (*i.e.*, although both the zero and the unit of measurement may differ). But we would still be unable to make consistent statements about the ratios in which the numerical values of *the entities themselves* are related to one another, and we would not be able to compare sums of entities on the basis of measurements of the individual entities constituting such a sum. In this sense the individual measurements *are not additive*, for the sums obtained by adding measurements based on two measures identical up to linear transformation only, will yield totals which are not equivalent. Perhaps the clearest illustration of such measures is provided by the different scales for measuring temperature commonly used in different parts of the world at present. As between the Fahrenheit and the Celsius (centigrade) systems, for instance, both the zero and the unit of measurement differ. While it is correct to say that the temperature rose twice as much between one pair of dates as between another, it is meaningless to say that the temperature itself was twice as high to-day as yesterday. In the former case the same result will be obtained whether we use the Centigrade or the Fahrenheit scale, but in the latter instance the results will differ.[1] It is also meaningless to compute sums of measurements of temperatures, for (apart from any consideration of purpose) the results would differ according to the scale chosen.[2] Transferring the argument to the field of " utility," measurability up to linear transformation would enable us to find the sign of *marginal* utility and the rate of its change, but it would not entitle us to estimate the "utility" of a group of objects (or situations) by adding the " utilities " assigned to the individual objects (or situations) composing such groups (and this irrespective of the complications created by complementarity and other forms of interdependence).

[1] While the equivalent of a sum $x_1 + x_2$ in terms of another scale will be $a(x_1 + x_2) + b$, the sum of the corresponding equivalents of the individual measurements will be $a(x_1 + x_2) + 2b$.

[2] The equivalents of 25° C. and 50° C. are respectively 77° F. and 122° F. but five increments of 10° C. will correspond to five increments of 18° F. While ratios between measurements depend on absolute values (*i.e.*, on the zero of the scale), the size of the increments depends only on the slope (or the " shape ") of a straight line or curve.

3. Only measures which are unique up to a multiplicative constant enable us to compute ratios between the numerical values assigned to individual entities (and not merely between the differences in such numerical values). Moreover, provided the entities grouped together are independent with respect to the characteristic measured, it is possible to make comparisons between such groups on the basis of computing sums of the numerical values of the individual entities.[1] This is a special case of linear transformations where each measure differs by a simple conversion factor and one can be obtained from another by means of multiplication by a constant. This is the familiar field of weights and lengths and derived concepts such as yield per acre. If " utility " were measurable up to linear transformation, this would be sufficient for ranking groups of *alternative* objects (*i.e.*, *A or B, D or C* . . .) on the basis of sums of individual " utilities " weighted by probabilities.[2] For aggregates of objects, of the type *A plus B plus C* . . . , however, not only the postulate of independence would have to be fulfilled, but also a more precise degree of measurability, *i.e.*, up to a multiplicative constant, would have to be devised in order to move simply by the process of addition from comparisons between individual entities to comparisons between groups.

It seems that on the basis of the above reasoning the following conclusions can be drawn with reference to the problem stated at the beginning of this note. First, comparisons between differences, or increments, in " utility " imply that the sign of increments can be uniquely determined, and fall under our second category of measurability, *i.e.*, measurement unique up to a linear transformation. In contrast to " ordinal " comparisons between the entities themselves, which do not entitle us to any further quantitative judgments, consistent " *ranking* " *of increments* involves the knowledge of the " shape " of the functional relations concerned,

[1] To see that this will not be possible for measures unique up to linear transformation only, one can, for the sake of illustration, consider the contradictory results obtained by comparing the sums $(A + B + C)$ and $(D + E)$ by using the Centigrade and the Fahrenheit scales respectively, where $A = 10°$ C. $= 50°$ F.; $B = 20°$ C. $= 68°$ F.; $C = 35°$ C. $= 95°$ F.; $D = 30°$ C. $= 86°$ F.; and $E = 40°$ C. $= 104°$ F.

[2] For " utilities " of uncertain prospects the basic equation is $U(A \text{ or } B) = pU(A) + (1 - p)U(B)$. This will always be true for any linear transformation, whatever the zero and the unit of measurement chosen, for $apx_1 + a(1 - p)x_2 + b$ equals $p(ax_1 + b) + (1 - p)(ax_2 + b)$.

and enables us to compute their sums and ratios. Such comparisons are beyond the scope of the strictly " ordinal " approach, which is characterised by our first category of measurability, *i.e.*, unique up to a monotonic transformation only.

On the other hand, judgments of equivalence clearly do not imply *per se* the possibility of addition. In particular, a judgment of equivalence, or indifference, between two entitities A and B signifies only the possibility of " measurement " up to a monotonic transformation, *i.e.*, our first category of measurability, while the possibility of adding utilities of A and B and computing the ratio of the sum to the utilities of the individual entities implies the independence of utility of A from utility of B and the possibility of measurement up to a multiplicative constant, *i.e.*, our third degree of measurability.

Finally, there is no doubt that comparisons between preferences, as, for instance, in the example given by Professor Robbins with reference to works of art,[1] are a common experience. From such comparisons of a purely " ordinal " nature of *differences of " utility "* between pairs of different objects there is hardly any further step required in order to make the same comparisons between increments of " utility " from successive additions of the same commodity,[2] which leads us straight, provided such preferences between increments are consistent, into the realm of diminishing marginal utility. In principle, once differences between preferences can be consistently ordered, " utility " becomes measurable up to a linear transformation. There are, however, two qualifications. While our preferences between actual entities may well be consistent, it is quite possible that no consistent ranking of preferences themselves (*i.e.*, of differences or increments of " utility ") by individuals can be assumed even as a broad approximation. Moreover, even if a certain general consistency of such judgments by individuals existed, these comparisons of preferences may never be sufficiently precise as to enable an individual to say, on the basis of all indirect comparisons feasible, that his preference of A over B is twice as high as his preference of C over D. Nevertheless, he could be quite consistent in his statements about his degrees of preference with respect to a number of important choices.

It is beyond the scope of this note to discuss whether any

[1] Cf. *op. cit.*, p. 104.

[2] If one can say that one's preference for 2 lb. of tea over 3 lb. of coffee is greater than one's preference for 2 lb. of cocoa over 1 lb. of chocolate, one can also say that one values the fifth packet of cigarettes less than the fourth.

generalisations could be made about the marginal " utility " of income by a more direct and less controversial method than by means of comparisons of choices involving uncertainty. It seems clear, however, that this is a problem more important for the theory of welfare economics than for the theory of value.

H. TYSZYNSKI

Rome.

THE TRANSFER PROBLEM AND TRANSPORT COSTS, II: ANALYSIS OF EFFECTS OF TRADE IMPEDIMENTS

I. Introduction

The first part of this paper [1]

(1) surveyed the theoretical literature;

(2) developed graphically and logically for the transport-free two-country two-good case a fundamental criterion to determine how the terms of trade of the paying country change;

(3) showed that the criterion involves marginal *income* propensities of the different countries and goods in an essentially *symmetric* way, so that *in the complete absence of all trade impediments absolutely no probability presumptions concerning the criterion or the terms-of-trade change were possible;*

(4) argued that the usual defense of the orthodox view appeals to empirical elements premised on transport costs in order to be able to get a definite answer from a criterion whose validity and applicability had been derived on the explicit banishment of all transport costs.

These results do not—and were not intended to—demolish the orthodox doctrine of a presumption that unilateral transfer payments will tend to deteriorate the terms of trade of the paying country. But they do suggest that the orthodox doctrine is still in need of vindication and further examination.

The present paper: (1) introduces transport costs explicitly into the Jevons–Pigou barter model to analyse the probable effects of transfer, and (2) discusses briefly some other aspects of impediments to trade.

II. Equilibrium Conditions

As in Part I, Europe and America consume clothing and food. Because Europe is relatively well endowed with clothing (or clothing-producing factors), she exports clothing for American food. The price ratio in Europe's markets of clothing to food represents her net terms of trade, and must in equilibrium equal Europe's indifference-ratio or relative marginal utilities of the goods. A similar equilibrium condition will hold for the price ratio in the American market and America's indifference ratio. If there are zero transport costs, these price ratios will be identical even though an ocean intervenes.

With no unilateral payments, trade must balance. For each country, value of imports = value of exports, expressed in common units. These units may be dollars, francs, ergs, food units or clothing units. There is no need to write a separate balance equation for each country, since the exports of Europe are the imports of America and vice versa.

Now we admit a unilateral payment from Europe to America. The common balance equation of the countries becomes

Value of American imports = value of American exports + value of unilateral payment

or

Value of Europe imports = value of Europe exports − value of unilateral payment

Part I and Pigou's earlier discussion showed that it matters little for our model in what units the unilateral payment is prescribed. Readers seem to find it most natural to imagine that Europe's unilateral payment to America is initially prescribed in terms of Europe's own export good—clothing in my example. Let then the payment be K clothing units per unit of time. So long as clothing and food prices, P_c and P_f, are the same in both countries, we may rewrite the balance of payments

$$P_f\,(\text{American Food Exports}) = P_c\,(\text{European Clothing Imports}) - P_cK$$

or using Pigou's notation of X for the receiving country's export and Y for the paying country's export, we get

$$\frac{P_c}{P_f} = \frac{X}{Y-K} \tag{1}$$

as an expression for Europe's net terms of trade. (Without the K units of clothing payments, we would have Taussig's gross barter terms of trade; and if $K = 0$, the two concepts are identical.)

All this is familiar ground. If we write down our demand or

[1] P. A. Samuelson, "The Transfer Problem and Transport Costs: The Terms of Trade When Impediments are Absent," Economic Journal, Vol. LXII (June 1952), pp. 278–304, hereafter referred to as Part I. Certain extensions to the many-good case were also made.

marginal utility conditions, the full equilibrium conditions are summarised by

$$(2)\quad \left(\frac{\text{M.U. of Clothing}}{\text{M.U. of Food}}\right)_{\text{America}} = \frac{P_c}{P_f} = \frac{X}{Y-K} = \left(\frac{\text{M.U. of Clothing}}{\text{M.U. of food}}\right)_{\text{Europe}}$$

where the marginal utility or indifference ratios depend upon consumption in the respective countries—and hence, with production determined, on the export variables X and Y alone.[1]

The three equations of (2) are sufficient to determine the three unknowns: X, Y, P_c/P_f. If we change K—say from 0 to +100—new equilibrium values of the unknowns are determined. How the price ratio changes was shown to depend on the relative slopes of the Engel or income–consumption curves of the two countries (*i.e.*, upon the derivatives of their relative-marginal-utility functions).

III. A Numerical Example of Cost-free Transfer

The following concrete example will pave the way for our further explorations. Suppose Europe produces 0 food and 200 clothing, America produces 0 clothing and 200 food. Suppose with Pigou that for each consumer utilities are measurable and independent. For simplicity, let each good have a strictly linear marginal utility, and for both America and Europe let the same linear formulas apply: M.U. = 8 − 0·04 (consumption), applying to both food and clothing.

Remember that each country consumes of its import good exactly what it imports, and of its export good what is left over from its production after exporting. Thus (2) now becomes the specific equation

Case of no transfer, $K = 0$:

$$\frac{8-\mathbf{0{\cdot}04}Y}{8-\mathbf{0{\cdot}04}(200-X)} = \frac{X}{Y-0} = \frac{8-\mathbf{0{\cdot}04}(200-Y)}{8-\mathbf{0{\cdot}04}X} = \frac{P_c}{P_f}$$

[1] In *Public Finance*, p. 179, Pigou writes (2) in the form

$$\frac{\phi(Y)}{f(X)} = \frac{X}{Y-K} = \frac{\psi(Y)}{F(X)}$$

Because he usually expresses Europe's payment in terms of the receiving country's good, he usually (see p. 176) writes instead of $X/(Y-K)$ the equivalent expression $(X+R)/Y$, where R is Europe's payment expressed in physical units of America's export product. I have set the number of representative individuals equal to one in each country and have omitted Pigou's m and n.

Case of transfer, $K = +100$:

$$\frac{8-\mathbf{0{\cdot}04}Y}{8-\mathbf{0{\cdot}04}(200-X)} = \frac{X}{Y-100} = \frac{8-\mathbf{0{\cdot}04}(200-Y)}{8-\mathbf{0{\cdot}04}X} = \frac{P_c}{P_f}$$

By cross multiplication, each of these sets of equations can be combined into quadratic expressions in X and Y. Eliminating one variable, we are left with a 4th-degree equation in the other that can be solved for its relevant root. Actually, as the reader can verify by quick substitution, the solution to the first case is given by:

$$\text{Before transfer: } \frac{P_c}{P_f} = 1,\ X = 100,\ Y = 100$$

which is not surprising in view of the assumed symmetry of the relations.

The transfer case can also be solved without setting up 4th-degree equations. The bold-face coefficients in the equations give us the criterion[1] 0·04/0·04 = 0·04/0·04, so we know that the net terms of trade will be unaffected. Knowledge of $P_c/P_f = 1$ gives us three linear relations between X and Y, permitting us to solve by inspection:

$$\text{After transfer: } \frac{P_c}{P_f} = 1,\ X = 150,\ Y = 50.$$

After transfer—which means with a unilateral payment being currently made and remade!—the receiving country consumes more of both goods, importing more clothing and retaining at home more food. The payer consumes less of both goods, exporting more of her clothing production and importing less food. Although the unilateral payment was prescribed in terms of clothing, the actual transfer has taken place as much in the form of curtailed food imports as in expanded clothing exports. (See Table I for a numerical summary.)

The terms of trade are unchanged because the income–consumption curve of America just happens to coincide with the income–consumption curve of Europe.[2] Before and after transfer, the two countries divide their incomes in the same way between the two goods. This is a highly unrealistic case, but I refer the reader to the earlier discussion as to why there can be

[1] This is Pigou's $|\psi'/F'| = |\phi'/f'|$, proportional to my $C_A/F_A = C_B/F_B$. See Economic Journal 1952, p. 286.

[2] In Part I's graphical terms, here the contract curve coincides with the two income–consumption curves, which for the linear Pigou model are straight lines. See Fig. 1 below for a scale drawing of the case.

TABLE I

Zero Transport Costs and Transfer

	Before transfer $K = 0$.	After transfer $K = +100$ from Europe to America.
Terms of trade of clothing to food .	1·00	1·00
Europe :		
Terms of trade of clothing to food	1·00	1·00
Clothing—		
Production	200	200
Consumption	100	50
Exports (+) or imports (−) .	+100	+150
Food—		
Production	0	0
Consumption	100	50
Exports (+) or imports (−) .	−100	−50
America :		
Terms of trade of clothing to food	1·00	1·00
Clothing—		
Production	0	0
Consumption	100	150
Exports (+) or imports (−) .	−100	−150
Food—		
Production	200	200
Consumption	100	150
Exports (+) or imports (−) .	+100	+50

no systematic presumption about relative expenditure if we adhere pedantically to the strait-jacket of literally zero cost-impediments to trade.

IV. Explicit Introduction of Real Transport Costs

I now propose to come directly to grips with transport costs. The simplest assumption is the following: To carry each good across the ocean you must pay some of the good itself. Rather than set up elaborate models of a merchant marine, invisible items, etc., we can achieve our purpose by assuming that just as only a fraction of ice exported reaches its destination as unmelted ice, so will a_x and a_y be the fractions of exports X and Y that respectively reach the other country as imports. Of course, $a_x < 1$ and $a_y < 1$, except in the costless model, where they were each unity.

With transport costs in the picture, we must distinguish between price ratios in the two countries and also between the numerical exports of one country and the numerical imports of the other. America's clothing imports are now less than Europe's clothing exports Y, being instead $a_y Y$. Similarly, Europe's food imports are now $a_x X$ rather than X.

The balance of payments for either country can most simply be written using her *domestic* price ratios and her exports and imports. Thus, for America

$$\left(\frac{P_c}{P_f}\right)_A \text{clothing imports} = \text{food exports}$$

all transfers being provisionally assumed away. Or

$$\left(\frac{P_c}{P_f}\right)_A = \frac{X}{a_y Y}$$

For Europe

$$\left(\frac{P_c}{P_f}\right)_E \text{clothing exports} = \text{food imports}$$

Or

$$\left(\frac{P_c}{P_f}\right)_E = \frac{a_x X}{Y}$$

These two relations enable us to deduce the discrepancy between the two price ratios that transport costs must create and maintain. So long as goods are flowing in both directions

$$(3) \quad \left(\frac{P_c}{P_f}\right)_E = a_x \frac{X}{Y} = a_x a_y \frac{X}{a_y Y} = a_x a_y \left(\frac{P_c}{P_f}\right)_A < \left(\frac{P_c}{P_f}\right)_A$$

Interpretation: goods are relatively cheapest in their place of origin for two reasons—there is a transport cost saved on the export good and a transport cost paid on the import good. Thus, if clothing were to cost $\frac{1}{4}$ of itself to transport west and food to cost $\frac{1}{3}$ of itself to transport east, the European price ratios of clothing to food would be $\frac{3}{4}$ of $\frac{3}{4}$ or $\frac{9}{12}$ of the American price ratio. The reader can verify that the American price ratio of food to clothing will be cheaper than the European for the same reason and *by the same numerical factor* of $\frac{9}{12}$; *i.e.*, symmetrically with (3), we have

$$\left(\frac{P_f}{P_c}\right)_A = a_x a_y \left(\frac{P_f}{P_c}\right)_E < \left(\frac{P_f}{P_c}\right)_E$$

These fundamental price relations were derived from comparing balances of payments. A more fundamental derivation would be via arbitrage relations that maintain "purchasing-power parity" relations among transportable goods. One unit of cloth is worth $(P_f/P_c)_E$ units of food in Europe. By sending it abroad we can buy $a_y(P_f/P_c)_A$ units of food in America, of which $a_x a_y(P_f/P_c)_A$ can be brought back to Europe. This last expression must not exceed $(P_f/P_c)_E$, or arbitrage will set in, restoring the equality. Q.E.D. If transport costs are great

enough to make all trade unprofitable, then the equality [1] of (3) is to be replaced by $(P_f/P_c)_A > a_x a_y (P_f/P_c)_E$ and $(P_c/P_f)_E > a_x a_y (P_c/P_f)_A$, with similar inequalities holding in terms of opposite directional transport costs.

How shall we measure *the* terms of trade between clothing and food? By Europe's price ratio, $(P_c/P_f)_E$? Or by America's $(P_c/P_f)_A$? So long as the spatial markets remain connected by trade, these measures differ only by an invariant scale factor, $a_x a_y$.[2] Therefore, transfer payments and any other disturbance will affect either measure in the same direction and relative degree. So we can use either as our measure of the terms of trade. Or for that matter, we can define a more symmetrical in-between measure, $(P_c/P_f)_I = a_y(P_c/P_f)_A = (P_c/P_f)_E/a_x$. This intermediate measure, which differs only in scale from the local measures, will be found to be a convenient variable for later use.

Now to combine our elements into a determinate trade equilibrium taking account of transport costs. Assuming no transfer payments, for America

$$\left(\frac{\text{M.U. clothing consumed}}{\text{M.U. food consumed}}\right)_A = \left(\frac{P_c}{P_f}\right)_A = \frac{\text{food exports}}{\text{clothing imports}} = \frac{X}{a_y Y}$$

for Europe

$$\left(\frac{\text{M.U. clothing consumed}}{\text{M.U. food consumed}}\right)_E = \left(\frac{P_c}{P_f}\right)_E = \frac{\text{food imports}}{\text{clothing exports}} = \frac{a_x X}{Y}$$

where in every case, imports are derived by applying the transport-cost a coefficient to our old symbols for exports.

These equations can be conveniently combined

$$a_y\left(\frac{\text{M.U. clothing consumed}}{\text{M.U. food consumed}}\right)_A = \frac{X}{Y} =$$
$$\frac{1}{a_x}\left(\frac{\text{M.U. clothing consumed}}{\text{M.U. food consumed}}\right)_E = \left(\frac{P_c}{P_f}\right)_I = a_y\left(\frac{P_c}{P_f}\right)_A = \frac{1}{a_x}\left(\frac{P_c}{P_f}\right)_E$$

Note that the relative marginal utility expressions for each country are determinate functions of food and clothing consumed; call this function r (clothing, food) for America and R (clothing, food) for Europe, where these functions have the usual curvature properties of marginal rates of substitution. With America producing O clothing and $\bar{F}$ food, and Europe O food and $\bar{C}$

[1] See P. A. Samuelson, "Spatial Price Equilibrium and Linear Programming," *A.E.R.*, Vol. XLII (June 1952), pp. 283–303, for a discussion of some of these spatial price relations.

[2] If transport costs varied with volume of trade, the as would not be constants. Realistically, since there are joint costs of a round trip, a_x and a_y will tend to move in opposite directions, depending upon the strengths of demands for east and west transport.

clothing, we can express these demand functions in terms of exports alone: namely, $r(a_y Y, \bar{F} - X)$ and $R(\bar{C} - Y, a_x X)$.

To take account of a transfer payment from Europe to America, recall that this is stipulated in terms of Europe's export good. But is it to be so much clothing *in Europe*, or does the stipulated amount refer to clothing *delivered* in America? With transport costs, there is a difference. It is of no consequence which convention we adopt: a smaller stipulated amount of delivered clothing will be identical in its effects to a large stipulated amount of clothing paid in Europe itself.

For convenience, I shall let the stipulated unilateral payment K stand for clothing payable in Europe to America. In Europe's balance of payments, K will be seen to be a direct subtraction from its clothing export credit items, Y—exactly as in the transport-free case.

Hence, we can write down our final equilibrium system, including all previous ones as special cases.[1]

$$(4)\quad a_y r(a_y Y, \bar{F} - X) = \frac{X}{Y - K} = \frac{1}{a_x} R(\bar{C} - Y, a_x X) =$$
$$\left(\frac{P_c}{P_f}\right)_I = a_y\left(\frac{P_c}{P_f}\right)_A = \frac{1}{a_x}\left(\frac{P_c}{P_f}\right)_E$$

With the parameters a_x, a_y, $\bar{C}$, $\bar{F}$ specified, we can vary the payment K and determine the resulting shift in the terms of trade.

V. Example of Real Transport Costs and Transfer

Our previous numerical example can provide a good illustration of some properties of our new system. We leave tastes and production as before. To bring out strongly the effect of transport changes, set $a_x = 0{\cdot}5 = a_y$, so that fully one-half of each good is used up in crossing the ocean. Substituting into the linear marginal utility relations $8 - 0{\cdot}04$ (consumption), gives

$$\frac{a_y(8 - 0{\cdot}04 a_y Y)}{8 - 0{\cdot}04(200 - X)} = \frac{X}{Y - K} = \frac{8 - 0{\cdot}04(200 - Y)}{a_x(8 - 0{\cdot}04 a_x X)} = \left(\frac{P_c}{P_f}\right)_I$$

or

[1] With $a_x = 1 = a_y$, we have the transport-free case; with $K = 0$, we have no transfer. In the case of independent utilities, this may be written in Pigou's notation as

$$(4)'\qquad \frac{a_y \phi(a_y Y)}{f(X)} = \frac{X}{X - K} = \frac{\psi(X)}{a_x F(a_x X)}$$

which differs from his original equations only because of the a_x and a_y coefficients.

$$(5)\quad \frac{4-\frac{0\cdot04}{(2)(2)}Y}{8-0\cdot04(200-X)}=\frac{X}{Y-K}=\frac{8-0\cdot04(200-Y)}{4-\frac{0\cdot04}{(2)(2)}X}=$$

$$\left(\frac{P_c}{P_f}\right)_I=\frac{1}{2}\left(\frac{P_c}{P_f}\right)_A=2\left(\frac{P_c}{P_f}\right)_E$$

Before transfer, we solve these equations with $K = 0$. From the symmetry of the problem, it is easy to guess $X = Y$, $(P_c/P_f)_I = 1$. It is then easy to deduce that the common value of exports is $X = 80 = Y$, with imports being only half as great because of transport costs. See Table II for a summary of the

TABLE II

Real Transport Costs and Transfer

($a_x = 0\cdot5 = a_y$)

	Before transfer $K = 0$.	After transfer $K = +100$ from Europe to America.
Intermediate terms of trade of clothing to food	1·00	1·48
Europe:		
Terms of trade of clothing to food	0·50	0·74
Clothing—		
Production	200	200
Consumption	120	69·2
Exports (+) or imports (−)	+80	+130·8
Food—		
Production	0	0
Consumption	40	22·75
Exports (+) or imports (−)	−40	−22·75
America:		
Terms of trade of clothing to food	2·0	2·06
Clothing—		
Production	0	0
Consumption	40	65·4
Exports (+) or imports (−)	−40	−65·4
Food—		
Production	200	200
Consumption	120	154·5
Exports (+) or imports (−)	+80	+45·5

results. In America food consumption is 120 and clothing only 40. In Europe food consumption only 40 and clothing 120. As Pigou, Robertson and others have insisted all along, one's home produce is relatively cheap and one buys relatively more of it in physical terms. Actually $(P_c/P_f)_E = 0\cdot5$ and $(P_c/P_f)_A = 2\cdot0$, so there is a four-fold difference in price.

What is not inevitable outside this particular model is the fact that each country spends relatively more money on its own

good than on the imported good. Before transport costs were introduced, America spent 50% of its income on food and 50% on clothing. With heavy transport costs, clothing imports have become twice as expensive as food; but such is elasticity of demand that physical clothing consumption has dropped off by more than half—from 100 to 40. And more of food production is retained for home consumption because of the transport barrier to exports. So America ends up spending 60% of its income on its own good, food. A similar story holds for Europe's export and import goods.

Now introduce a unilateral payment of $K = +100$ clothing units payable in Europe to America. Table II shows the resulting pattern of trade and the resulting shift of the terms of trade in favor of the paying country.[1] This 48% shift in favor of Europe is a direct and dramatic reversal of the orthodox expectation that the payer's net terms of trade should deteriorate.

Such a perverse result is not coincidental. If we adhere rigidly to the strictest Pigouvion model of (*a*) identical unchanging tastes, (*b*) independent marginal utilities and (*c*) strictly linear marginal utilities, an anti-orthodox result is inevitable.[2] That further analysis of the orthodox view is needed must be apparent from this discussion.

VI. EQUILIBRIUM WITH ARTIFICIAL TARIFF IMPEDIMENTS

So far we have confined attention to "real" trade impediments that literally use up resources in transporting goods. The almost as important case of artificial impediments such as tariffs or quotas has certain analytic similarities. But there are important differences, which must not be glossed over, and which require separate analysis and conclusions.

For simplicity of exposition suppose that all Custom duties are levied in terms of the imported goods themselves: thus an importer who brings a unit of clothing into America from outside finds that the government leaves him with only $a_y < 1$ units of

[1] To solve equations (5) for $K = +100$, no short cuts are possible. Rather than solve a quartic equation, I used trial-and-error iterations; the interested reader can substitute Table II values for X and Y into (5) and verify that the resulting ratios do agree to the indicated number of decimal places.

[2] The general mathematical reasons for this are given later. At this stage any reader can examine the bold-faced coefficients, which in the zero transport cost case yield $0\cdot04/0\cdot04 = 0\cdot04/0\cdot04$, a criterion for no change in the terms of trade. He can compare these with the bold-face coefficients, which in the real impediment case where $a_x = 1/2 = a_y$, gives as a criterion for an *improvement* in the payer's terms of trade, $0\cdot04/(0\cdot04/2^2) > (0\cdot04/2^2)/0\cdot04$.

clothing after he has passed through Customs; similarly, a European importer of food is left with but a_x units of food after he has paid the duty on a unit of imports.

Now as far as arbitragers are concerned, they do not care whether the impediments to trade are " natural " or " contrived." Clearly purchasing power parity relations between the spatial prices will be exactly the same as in the case of real transport costs. *I.e.*, so long as duties are not prohibitively high and goods are actually flowing in both directions, equilibrium requires

$$(3)' \quad \left(\frac{P_c}{P_f}\right)_E = a_y a_x \left(\frac{P_c}{P_f}\right)_A < a_y \left(\frac{P_c}{P_f}\right)_A = \left(\frac{P_c}{P_f}\right)_I < \left(\frac{P_c}{P_f}\right)_A$$

This is the exact equivalent of equation (3), which showed the degree to which a country's own export good is relatively cheap at its place of origin.

Tariffs affect our balance-of-payments expressions quite differently from real transport costs. No matter how Custom officials alter the price tags of goods, the physical imports of each country are still fully equal to the physical exports of the other country. Tariffs do not literally *use up* goods as do transport costs. Our convention that governments collect duties in kind brings into prominence the problem that always vexes the theorist dealing with tariffs: What does the government do with the tariff receipts? The usual convention followed is the one that is most natural for me to adopt here: The government is assumed to distribute the receipts to the (representative) consumer in a *lump-sum* fashion so that each consumer can act as if the true price to him for any expansion of purchase is equal to the price quoted within his country's markets.[1]

The balance of payments of America, or for a typical American consumer, can be written in either of the following ways when transfer payments are zero

Imports valued just outside of America =
exports valued just outside of America
Imports valued inside America =
exports valued in America + Lump-sum Tariff Rebate

[1] The case of quotas does not directly give us a_x and a_y coefficients, but for any degree of import limitation these can be defined implicitly as the ratio of the price the importer must pay to the higher price that competition produces internally. By auctioning the limited quotas, the government can collect the difference and give it to whomever it deems worthy. More often, the difference is pocketed by importers, and for simplicity their tastes and demands are assumed to be like that of the populace at large. The same assumption was implicitly made about the government's disposition of the transfer payment.

Applying similar reasoning to Europe, and using our symbols, we get

$$(6) \quad \left(\frac{P_c}{P_f}\right)_I Y = X$$

and

$$\left(\frac{P_c}{P_f}\right)_A Y = X + \left\{\left(\frac{P_c}{P_f}\right)_A - \left(\frac{P_c}{P_f}\right)_I\right\} Y$$

Similarly, for Europe

$$\left(\frac{P_f}{P_c}\right)_E X = Y + \left\{\left(\frac{P_f}{P_c}\right)_E - \left(\frac{P_f}{P_c}\right)_I\right\} X$$

where the terms involving brackets represent the lump-sum rebates of tariff receipts.

Of these relations, we need only (6). To take account of transfer payments expressed in terms of the export good of the paying country, the specified place of delivery is no longer of substance. In all of our balance-of-payments relations, the transfer of K units of clothing must be regarded as a subtraction from Europe's credit items of exports, and so we simply rewrite (6) in the more general form

$$(6)' \quad \left(\frac{P_c}{P_f}\right)_I = \frac{X}{Y - K}$$

Recalling that the representative consumer in each country equates his indifference-ratio or relative marginal utility to the domestic price ratio he faces, we can combine this fact with (3)' and (6)' to get our final conditions of equilibrium under tariffs:

$$(7) \quad a_y r(Y, \bar{F} - X) = \frac{X}{Y - K} = \frac{1}{a_x} R(\bar{C} - Y, X) = \left(\frac{P_c}{P_f}\right)_I = a_y \left(\frac{P_c}{P_f}\right)_A = \frac{1}{a_x}\left(\frac{P_c}{P_f}\right)_E$$

This should be compared with (2), the Jevons–Pigou equilibrium condition with no trade impediments and with (4), the equilibrium conditions with real as distinct from artificial trade impediments. Note that the a_y and a_x factors appear in (7) outside the r and R indifference functions exactly as they do in (4). But they do not appear inside the indifference functions because there is no literal using up of goods in transport.

The substantive difference between equilibrium conditions under artificial and real impediments described above is ignored in the following type of arguments. To the view that if the foreigner passes restrictive tariffs we should do the same, the

analogy is brought forward: "If Nature silted harbors abroad, would you think it necessary or desirable to ruin your own harbors?" For polemical purposes and with non-specialists, this is a suitable argument to use. But to a pedantical specialist, there is a difference between the kinds of trade obstructions that needs to be analysed at least once.

VII. Example of Transfer with Artificial Impediments

Using the numerical marginal utility functions of our previous examples, (7) takes the form

$$(7)' \quad \frac{4 - \frac{0{\cdot}04}{2}Y}{8 - 0{\cdot}04(200 - X)} = \frac{X}{Y - K} = \frac{8 - 0{\cdot}04(200 - Y)}{4 - \frac{0{\cdot}04}{2}X} = \left(\frac{P_c}{P_f}\right)_I$$

Table III summarises the results where $K = 0$ and no transfer payment is made and where $K = +100$, representing a unilateral payment from Europe to America of clothing. The case of $K = 0$ is easily solved when we note the symmetry of our

Table III

Artificial Impediments and Transfer

($a_x = 0{\cdot}5 = a_y$)

	Before transfer $K = 0$.	After transfer $K = +100$ from Europe to America.
Intermediate terms of trade of clothing to food	1·00	1·40
Europe:		
Terms of trade of clothing to food	0·50	0·70
Clothing—		
Production	200	200
Consumption	133⅓	79·7
Exports (+) or imports (−)	+66⅔	+120·3
Food—		
Production	0	0
Consumption	66⅔	28·4
Exports (+) or imports (−)	−66⅔	−28·4
America:		
Terms of trade of clothing to food	2·0	2·80
Clothing—		
Production	0	0
Consumption	66⅔	120·3
Exports (+) or imports (−)	−66⅔	−120·3
Food—		
Production	200	200
Consumption	133⅓	171·6
Exports (+) or imports (−)	+66⅔	+28·4

numerical assumptions. This tells us X and Y must be equal. Hence $(P_c/P_f)_I = 1$, and we have merely to solve a linear equation for $X = 66\frac{2}{3} = Y$.

Introducing a transfer payment turns out to shift the terms of trade in favor of the paying country.[1] We expect this unorthodox result from our experience with Tables I and II: the artificial barrier case is intermediate, so to speak, between the zero-cost and real-cost cases. The terms of trade have not shifted so much in Europe's favor as in the previous example, but they have shifted in favor of the payer by 40%.

VIII. Graphic Solution of Tariff Case

Fig. 1 is an exact replica of Fig. 1 of the previous paper, but now the difference curves have been made to be concentric circles in accordance with the special numerical assumption of linear marginal utilities.[2] The dimensions of the box diagram are equal to total world production of the respective goods; Europe's origin is the lower left-hand corner of the box; America's origin is the upper right-hand corner. To approximate Jevons more nearly, I have placed the initial endowment point at the south-east corner of the box, marked A: this represents zero food production for Europe and zero clothing production for America, an extreme but inessential assumption.

With no impediments to trade, the offer curves through A will intersect at the equilibrium point B. Both the net and gross barter terms of trade are measured by the numerical slope of a line adjoining A to B. At B both countries' indifference curves are tangential, with their common tangent pointing at A; of course, B is on the contract curve of points of common tangency, which in this numerical case happens to be the straight-line diagonal joining the two origins.

A transfer payment of 100 clothing paid to America shifts the initial point from A to A'. New offer curves drawn through A' will intersect in a new equilibrium point, marked B'. With zero impediments, this new point must also be on the contract curve, where the nations' indifference curves are mutually tangential and pointing at the new initial point A'.

[1] With $K = +100$, I had to solve (7)′ by iterative trial and error: the reader can perform the substitutions to verify that the ratios of (7)′ are equal, up to the indicated number of decimal places.

[2] By changing commodity units, we could change the circles to ellipses. My choice of numerical coefficients is special in its symmetry between goods; also, it is an inessential coincidence that the world totals of production would, if given to either country, lead to its exact point of saturation.

For this special numerical case, the income-consumption or Engel's curves through B happen for both countries to have the same slope.[1] It follows from Part I's demonstration that $A'B'$ must then be parallel to AB, so that the unilateral transfer payment causes no orthodox deterioration of the payer's net terms of trade, and no anti-orthodox improvement.

All the above duplicates the reasoning of Part I, and depicts

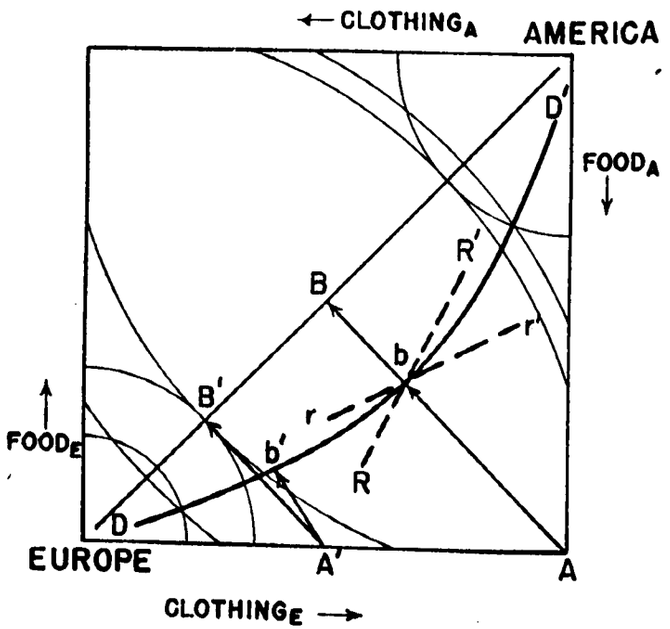


FIG. 1

With zero transport costs, transfer leaves terms of trade AB unchanged at $A'B'$. With tariffs, transfer improves payer's terms, from Ab to $A'b'$: along DD', where domestic prices differ by duties, indifference slopes steepen from b to b' because Pigou model makes Engel's slopes RR' steeper than rr'.

graphically the numerical data already given in Table I. To handle tariffs, we must recognise that the countries must end up—not with indifference-curve slopes equal as on the contract curve—but with Europe's final slope always in a constant ratio to America's. Why? To reflect the relative cheapness of each country's export good in its own market; *i.e.*, the slopes must differ by the constant factor, $a_x a_y < 1$.

[1] In the absence of transport costs and special information, Part I argued that we have no reason to presume either country's marginal income propensities will be dominant for either good.

The locus of points with indifference-curve slopes agreeing up to the specified numerical factor is given by DD'. All the final equilibria under tariffs must end up on this locus. Without transfer, the final equilibrium point is shown by Table II to be at b.[1] Graphically, this can be recognised by the fact that the intermediate slope at b, which is between the two countries' indifference slopes in the same degree as $(P_c/P_f)_I$ is intermediate between $(P_c/P_f)_A$ and $(P_c/P_f)_E$, points directly at b.

Just as transfer without tariffs moved us along the contract locus toward the payer's origin, so will transfer with tariffs move us along our new DD' locus from b to b', toward the payer's origin and away from the receiver's. The problem of what happens to the payer's net terms of trade can now be reworded in graphical terms:

> As transfer moves us along this DD' locus of final equilibrium points under tariffs, what is happening to the indifference slopes of either (and both, since the prices are in constant ratio to each other) country? Are they becoming flatter, as in the orthodox view? Or steeper? Or remaining unchanged?

Readers of Part I will easily see that the reasoning applied there to Fig. 2 can also be applied here. A comparison of the relative steepness of the two countries' income-consumption curves through any point on DD' tells us how the indifference-slopes are changing as we move along DD'.[2]

To summarise:

> The paying country's net terms of trade will, under tariffs, *improve* (*remain the same*, *deteriorate*), depending on whether its own product expands relative to the other product *more slowly* (*at the same rate*, *faster*) along its own income-consumption curve than it expands along the receiving country's income-consumption curve.[3]

[1] Geometrically, b could be defined by intersecting "offer curves," where the latter are newly defined so as to be generated—not by points on each country's indifference curves that are pointing directly at A—but by points that would be pointing at A after modification by the a_y and $1/a_x$ factors. After transfer shifts us from A to A', a similar argument can determine b'.

[2] See ECONOMIC JOURNAL 1952, p. 287, for the detailed reasoning.

[3] The relevant criterion depends on relative *physical* marginal propensities—i.e., upon the relative slopes of the Engel's curves in the Figures—and can be written as $c_A/f_A \gtrless c_E/f_E$. Since the nations' price ratios differ, this is no longer equivalent to $C_A/F_A \gtrless C_E/F_E$, the criterion previously defined in terms of non-physical marginal income propensities. See ECONOMIC JOURNAL 1952, p. 286. Paradoxically, the latter criterion will turn out to be the correct one when the trade impediments are real rather than artificial, as will be shown in Table IV.

We now see why the anti-orthodox result occurred in this case. The strict Pigou case of independent and linear marginal utilities is seen graphically to imply income–consumption curves that become steeper as the indifference curves become flatter! *I.e.*, as a good becomes cheap, more of it is bought and its average propensity to consume increases; but its marginal income propensities—both physical and in terms of value—here move in the opposite direction. Thus, through b and b', Europe marginally contracts its purchase of America's product (relative to its own product) faster than America expands its purchase of its own product (relative to Europe's product). Note how Europe's Engel's curve RR' through b is in the Pigou model steeper than America's Engel's curve rr'. This causes the intermediate slope between the two indifference curves to steepen as transfer moves us down DD' from b to b'. (See Fig. 2 of Part I for expansion of this argument.)

IX. Orthodoxy Defended in the Tariff Case

Our analysis has no need for assumptions of independent or linear marginal utilities. And since they lead to bizarre results, the time has come to drop them. In Part I, I discussed at length the alternative convention that Viner and others have put forward. By use of the principle of sufficient reason or other argument, Viner assumes that the single best assumption in the presence of ignorance is the following: Average and marginal income propensities are equal, so that indifference curves should be drawn with income–consumption curves that fan out in straight-line spokes from the origin.

I shall not go through again my previous lengthy evaluation of this Basic Convention.[1] It is enough to show that our assuming it will restore the orthodox presumption in one of our three cases, namely in the present case of artificial tariff barriers. Fig. 2 provides a graphical demonstration. Every American indifference curve is simply a radial blow-up of any other. The same is true of Europe. Assuming tastes to be the same, a fair assumption by our earlier arguments, we would still have no change in net terms of trade until we introduce trade impediments.

But tariffs cause the final equilibrium to shift—not from B to B' along the diagonal contract curve—but from b to b' along the DD' locus of final equilibria with proper spatial price relationships. Obviously, the tariff has made imports dear and shifted

[1] See Economic Journal, 1952, pp. 295–8.

each country's physical consumption toward its own local goods. Europe's consumption is shifted south-eastward toward more clothing and less food; America's south-eastward toward more food and less clothing. We cannot tell whether a country spends a larger fraction of its income on imports or not. But that does not matter! We do know that in this case as a nation buys

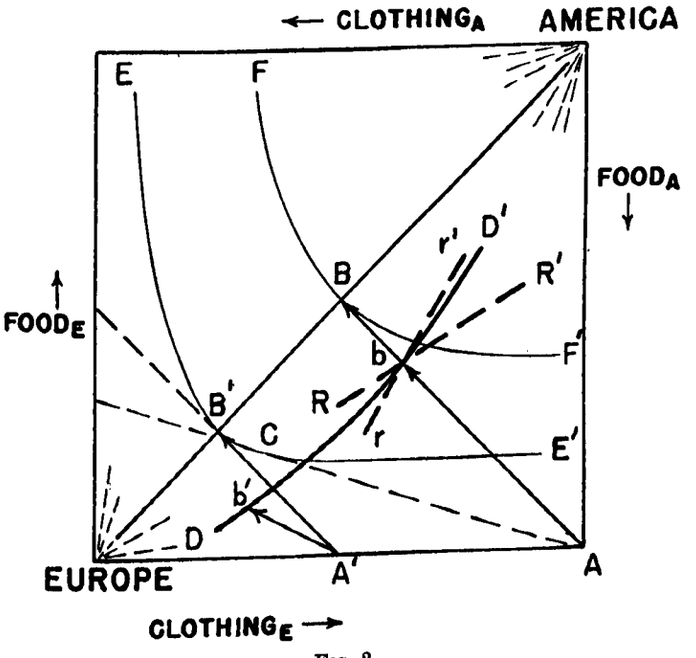


Fig. 2

Basic convention implies Engel's curves are spokes out from origin, so tariffs produce orthodox deterioration. None the less, as Europe moves from B' to C, dearer imports cause relative expenditure on imports to rise; with "elasticity of substitution" less than one for both countries, terms of trade change in anti-orthodox fashion in real impediment cases.

relatively more of its own good its income–consumption curve flattens out in an unambiguous manner. Hence, everywhere on the DD' locus, Europe's income–consumption slope is flatter than that of America: with $c_A/f_A < c_A/f_A$, we know that Europe's terms of trade must deteriorate in the orthodox fashion.[1]

[1] Mathematically $r(Y, \bar{F} - X) = g[Y/(\bar{F} - X)]$, with $g > 0$, $g' < 0$; also $R(\bar{C} - Y, X) = G[(\bar{C} - Y)/X]$, with $G > 0$, $G' < 0$. The criterion $c_A/f_A - c_E/f_E$ turns out to be $(\bar{F} - X)/Y - X/(\bar{C} - Y)$; because DD' lies eastward of the diagonal, this is seen to be algebraically negative.

X. Inconclusive Results in Case of Real Impediments

If we are willing to postulate the Basic Convention of unitary income elasticities (*i.e.*, equal average and marginal propensities to consume), can we also re-establish the orthodox presumptions in the case of real transport costs? The answer is, Not necessarily. Our graphical analysis applied only to the tariff and zero-impediments. It fails to handle the real transport cost case, because then the final consumption equilibrium points for the two countries do *not* coincide, instead differing by a vector representing the amounts of the goods actually used up in transport.

As yet we have deduced no rigorous criterion to handle the real cost case. Such a criterion will be developed later by straightforward but tedious mathematical argument. For those uninterested in such derivations, I may briefly state the final result:

> When there are real transport costs, the payer's terms of trade will improve, remain unchanged or deteriorate, depending upon whether the payer's marginal (income) propensity to consume its own product is less than, equal to or greater than the receiver's marginal (income) propensity to consume that same product.[1]

Now even with the assumption favorable to the orthodox view, namely Viner's Basic Convention, we *cannot* be sure how cheapening one's export good will affect its relative marginal (income) propensity to consume. Its physical output can be expected to decline relatively, but as argued in pp. 292–4 of Part I, no iron-clad presumptions are possible concerning ***marginal propensities***.

Actually, our Basic Convention postulates unitary income elasticities, and therefore we can completely identify the marginal propensity to consume with the average propensity to consume. Casual econometricians, a class to which I belong, feel more confident in speculating about the latter than about the former. None the less, as the example of Fig. 2 shows, relative expenditure on clothing may decline for Europe as it becomes cheaper. Europe's indifference curve EE' has been drawn with the usual

[1] In symbols $C_A \gtrless C_B$ is our valid criterion for this case—or what is almost the same thing, $F_B \gtrless F_A$, or $C_A/F_A \gtrless C_B/F_B$. Note that the geometrical slopes of income-consumption curves are no longer relevant: such expressions as c_A/f_A and c_B/f_B must first be multiplied by $(P_c/P_f)_A$ and $(P_c/P_f)_B$ before they can be compared, and these last now differ by the factor $a_x a_y < 1$.

shape and curvature: however, by measuring the relative lengths of the stretches on the budget line from each consumption point to the two axes, the reader may verify that for a considerable stretch eastward of the diagonal, the relative clothing price drops faster than its consumption expands. The crucial determinant of how relative expenditure changes can be shown to be the so-called "elasticity of substitution," whose magnitude permits of no uniform predictions.[1]

Unlike the case of tariffs, the case of real transport costs cannot therefore be definitely brought into the orthodox camp, even by means of the Basic Convention. As far as a pedantical economist can go seems to be the following:

> Even with unitary income elasticities, real transport costs may cause average and marginal propensities to consume to decrease as a good becomes cheap, thereby reversing the orthodox effect on terms of trade.[2] Perhaps as transport costs become very great, thereby raising the costs of imports a great deal, there may be a presumption of ultimate extinction of consumption of the imported good permitting us to infer an ultimate move of marginal and average propensities to consume in the direction needed for the orthodox result.[3]

XI. Fundamental Criteria for All Cases

In this section I present mathematical derivations of terms-of-trade criteria for all three cases: (i) zero impediments to trade, (ii) real cost impediments, and (iii) artificial impediments of tariffs or quotas.

[1] Geometrically, the "elasticity of substitution" of Robinson–Hicks–Pigou may along an indifference curve be greater than, equal to or less than unity in magnitude. Nothing prevents Nature from presenting us with indifference curves that for stretches, and even everywhere, have elasticities of substitution less than unity. See R. G. D. Allen, *Mathematical Analysis for Economists*, for discussion of the elasticity of substitution concepts and further references.

[2] Extreme transport costs and tariffs will almost certainly ultimately choke off imports by raising their prices beyond the point at which competing domestic supplies can fulfil the total domestic demand: when the markets have become split up and separated, the transfer will have to take place completely in terms of whichever good is specified in the payment contract. The result will be to shift the clothing–food terms of trade in opposite directions in the two countries, raising its price where one of the goods has become relatively scarce and lowering it where the good has become abundant. The orthodox view is not particularly realised in this extreme case of unconnected markets: indeed, with no sale of exports, the concept of a country's net terms of trade becomes vacuous.

[3] This presumption exists if the indifference curves are postulated to intersect the axes; if they become horizontal at interior saturation levels, the opposite presumption exists.

Equations (4) define equilibrium in case (ii). Note that for $a_x = 1 = a_y$, (4) will also cover case (i). By differentiating the relation (4) with respect to the unilateral payment, K, we easily get three linear relations in the derivatives $d(P_c/P_f)_I/dK$, dX/dK, and dY/dK. Solving these, by determinants or otherwise, we can find the criterion that governs the algebraic sign of the derivative of the price ratio with respect to the indemnity.

We differentiate (4) totally with respect to K to yield equations that are linear in the three derivatives dY/dK, dX/dK, and most important for the present purpose, $d(P_c/P_f)_I/dK$:

$$
\begin{aligned}
& a_y(a_y r_1)\frac{dY}{dK} - a_y r_2 \frac{dX}{dK} - 1\,\frac{d(P_c/P_f)_I}{dK} = 0 \\
& -\frac{1}{a_x} R_1 \frac{dY}{dK} + \frac{1}{a_x}(a_x R_2)\frac{dX}{dK} - 1\,\frac{d(P_c/P_f)_I}{dK} = 0 \\
& +1\frac{dY}{dK} - \frac{1}{(P_c/P_f)_I}\frac{dX}{dK} - \frac{Y-K}{(P_c/P_f)_I}\frac{d(P_c/P_f)_I}{dK} = +1
\end{aligned}
\tag{8}
$$

where numerical subscripts on the r and R functions indicate partial derivatives with respect to the indicated argument, so that $r_1 = \partial r(c, f)/\partial c$, etc.

By means of determinants, or otherwise, we can solve these linear equations to determine what the change in the terms of trade depends on, namely

$$
\frac{d(P_c/P_f)_I}{dK} = \frac{\begin{vmatrix} a_y(a_y r_1) & -a_y r_2 \\ -R_1/a_x & \frac{1}{a_x}(a_x R_2) \end{vmatrix}}{\Delta} = \frac{\left(-\frac{r_2}{r_1}\right) - a_x a_y\left(-\frac{R_2}{R_1}\right)}{a_x(-r_1)(-R_1)a_y^{-1}\Delta} \tag{9}
$$

where Δ is the determinant of all the left-hand coefficients of the linear equations (8), which can be shown to be positive as a condition for "stability" of our system. If neither good is an inferior good, every factor in the denominator of the last expression in (9) can be verified to be positive, and hence the numerator alone provides a rigorous criterion for the shift in the terms of trade. Since it is easy to show that the terms in parentheses in the numerator are the slopes of the income–consumption curves of the respective countries, namely c_A/f_A and c_E/f_E, we can rewrite our criterion in the form

$$
\frac{d(P_c/P_f)_I}{dK} \gtrless 0, \text{ if } \frac{c_A}{f_A} \gtrless a_x a_y \frac{c_E}{f_E}
$$

or

$$
\left(\frac{P_c}{P_f}\right)_A \frac{c_A}{f_A} = \frac{C_A}{F_A} \gtrless \frac{C_E}{F_E} = \left(\frac{P_c}{P_f}\right)_E \frac{c_E}{f_E} = \left(\frac{P_c}{P_f}\right)_A a_x a_y \frac{c_E}{f_E}
$$

Of course, if $a_x = 1 = a_y$ because there are zero impediments, then the physical marginal propensities, written in lower-case letters, will be proportional to the dimensionless marginal-income propensities, written in capital letters; and then either may be used as a criterion.

All our criteria are summed up in Table IV. To handle the tariff case rigorously, the reader can supply for himself the differentiation of equations (7) with respect to K to get the linear equations in the derivatives. Because (7) differs from (4) only in the fact that the factor a_y no longer appears within r and a_x no longer within R, the new linear equations will differ from (8) only by the replacement of $(a_y r_1)$ and $(a_x R_2)$ by r_1 and R_2. Hence, for the artificial barrier case, our criterion becomes

$$
\frac{d(P_c/P_f)_I}{dK} \gtrless 0 \text{ if } \frac{c_A}{f_A} \gtrless \frac{c_E}{f_E} \text{ or } a_x a_y \frac{C_A}{F_A} \gtrless \frac{C_E}{F_E}
$$

Table IV also relates Pigou's form of the criterion, based on independent utilities, to the different types of transport costs. Equation (4)′ of an earlier footnote showed how the Pigou analysis is modified by the appearance *inside* and *outside* of the r and R functions of the factors a_y and a_x. The reader can easily verify how the tariff-case version of these coefficients outside the functions leads to Table IV's version of the Pigou criterion.

It will be noted that whether impediments are real or artificial, the Pigou criteria are modified so as to lead in the direction opposite to the orthodox presumption : *i.e.*, the a_x and a_y terms always appear as depressants on the right-hand side of the criteria. Clearly Professor Pigou intends the assumption of linearity of marginal utility to be only a local approximation. If we permit his coefficients ϕ', f', ψ' and F' to be variables rather than constants, we can muster up some comfort for the orthodox view : Providing the rate of change of the rate of change of marginal utility (*i.e.*, the *third* derivative of the utility function) is assumed to be sufficiently negative for all goods, then the depressing effects of the a_x and a_y coefficients may be more than offset by the change in the ϕ', f', ψ' and F' coefficients, and the orthodox effect can result. Since rightly or wrongly, economists usually draw marginal utility curves that are concave from above, the orthodox case is not necessarily refuted by the assumption of independent utilities.[1]

[1] All this can be understood best in terms of a plotting of the indifference curves and their income–consumption curves. If each good becomes free at a finite level of consumption, the independent utility assumption does near the

TABLE IV

Summary of Criteria for Paying Country's Terms-of-trade Change

	Zero trade impediments.	Real transport costs ($a_x < 1, a_y < 1$).	Tariff and artificial barriers ($a_x < 1, a_y < 1$).
Marginal income propensities to consume (dimensionless)	$C_A \gtrless C_B$ or $\frac{C_A}{F_A} \gtrless \frac{C_B}{F_B}$	$C_A \gtrless C_B$ or $\frac{C_A}{F_A} \gtrless \frac{C_B}{F_B}$	$a_x a_y \frac{C_A}{F_A} \gtrless \frac{C_B}{F_B}$
Physical marginal propensities or relative slopes of income–consumption curves	$\frac{c_A}{f_A} \gtrless \frac{c_B}{f_B}$	$\frac{c_A}{f_A} \gtrless a_x a_y \frac{c_B}{f_B}$	$\frac{c_A}{f_A} \gtrless \frac{c_B}{f_B}$
Pigou criterion	$\left\lvert\frac{\psi'}{F'}\right\rvert \gtrless \left\lvert\frac{\phi'}{f'}\right\rvert$	$\left\lvert\frac{\psi'}{F'}\right\rvert \gtrless (a_x a_y)^2 \left\lvert\frac{\phi'}{f'}\right\rvert$	$\left\lvert\frac{\psi'}{F'}\right\rvert \gtrless a_x a_y \left\lvert\frac{\phi'}{f'}\right\rvert$
Strict linear marginal utilities, identical tastes	No change in terms of trade	Anti - orthodox change in favor of payer	Anti - orthodox change in favor of payer
Basic convention of unitary income elasticities, ($MPC = APC$), identical tastes	No change in terms of trade	Either change depending on whether elasticity of substitution along an indifference curve is numerically greater than one (orthodox) or less than one (anti-orthodox)	Orthodox change against payer
Export and import good with outputs variable	Same as above but with "less leverage."		
"Domestic" goods	Orthodox view favored, provided domestic goods are "more competitive on the production side" with export goods than with import goods.		

XII. VARIABILITY OF OUTPUT

Dropping the assumption of fixed production of the two goods in both countries will not affect qualitatively our above analysis and conclusions, for reasons that were discussed in Part I. Even if food can be substituted for clothing along a familiar production-possibility schedule, no change in production will take place unless our criterion dictates a change in relative prices.[1] The

saturation levels lead to income or Engel curves that fan *in*ward, thereby negating the orthodox view (see Fig. 1). But in between the zones of saturation, we can easily find examples of independent utilities where the Engel's curves fan out in a more realistic fashion. Note that the independence assumption is incompatible with the Basic Convention of unitary income elasticities. If I were forced to accept one simple assumption, I should perhaps prefer the latter to the former.

[1] To prove this rigorously, see ECONOMIC JOURNAL, 1952, p. 300, n. 2. The factors a_y and a_x must be introduced into the systems shown there in an obvious way, and then the equation must be differentiated to verify that our same criteria do apply. This involves about ten equations in as many unknowns; by the following simple analysis, we can fortunately reduce the problem to a single derived equation in one unknown.

Let small letters stand for America, capitals for Europe, let p and $P = a_x a_y p$ be short for $(P_s/P_f)_A$ and $(P_s/P_f)_B$. For each country, output will be determined so as to yield, for each domestic price p or P, a maximum value of national product or income expressed in, say, food-numeraire units; call these respectively $i(p)$ and $I(P)$, where $i'(p) > 0$, $I'(P) > 0$.

The quantity of clothing supplied in each country will be given by positively inclined functions $s(p)$ and $S(P)$, and the demands for clothing will be given by functions d and D; these depend upon clothing price (in food-numeraire units) and upon each country's income (expressed in numeraire units) including algebraic transfer payments of $+pa_yK$ for America and $-PK$ for Europe.

The equilibrium is defined by equality of the net demand of America for clothing to the net supply of Europe's clothing that comes through to America after real transport costs: or, recalling $P = a_x a_y p$, we have the single equilibrium equation

$$\{d(p, i(p) + pa_yK) - s(p)\} - a_y\{S(P) - D(P, I(P) - PK)\} = 0 = E(P, K)$$

This defines either unknown price in terms of the transfer K. Differentiating, we get

$$\frac{dP}{dK} = a_x a_y \frac{dp}{dK} = \left(p\frac{\partial d}{\partial i} - P\frac{\partial D}{\partial I}\right)\Big/\Delta_1$$

where $\Delta_1 = -\partial E/\partial P > 0$ for a "stable" system, and where increases in the supply slopes S' and s' cause the denominator to grow.

[1] See *Theory of International Values* (Princeton, 1948).

only difference is this: If the criterion does dictate a change in relative prices, the elasticity of response of outputs can be expected to moderate the quantitative degree of the resulting change in prices.

The late Frank D. Graham for thirty years insisted that "net elasticities" in international trade were greater than most writers thought. Indeed, in Graham's view, they are infinite or almost so because of his extreme constant-costs assumptions of the classical type.[1] I see no point at this date in re-arguing whether both blades of the Marshallian scissors do the cutting in such extreme cases. But on the substantive point of the effect on elasticities of assuming many countries or many sources of supply, I should put the matter this way: Introducing many alternative supply sources exactly like what one already has seems to increase the scale of all processes, and hence naturally leads to the same-sized disturbances having smaller price effects; but it is not clear to me why as the world grows in scale, the size of the postulated disturbances should not grow commensurately. Note, too, that introducing new supply sources which produce at *different* constant-cost levels seems, in my view, to work *against* the Graham thesis of almost infinitely elasticity. Similarly, introducing many goods producible at constant costs will lessen the impact of one small micro-economic disturbance; but

it is not at all clear to me that the effect of, say, a post-war disturbance of macro-economic type will be quantitatively different in its impact on an economy that concentrates its consumption on a few goods producible at constant costs than on an economy that chooses to spend a very little on a great many such goods. Only if one brings in Chamberlinian phenomena of monopolistic competition do substantive effects arise, and then I suspect analysis of market imperfections due to product differentiation will show that this works against rather than for Graham's thesis of high elasticity.

XIII. Final Qualifications

The Pigou–Jevons two-good model in its slightly generalised form has been squeezed dry of its implifications. Yet we are still a long way from the conditions of the real world, involving many goods and various types of market imperfections and trade impediments. With some diffidence, I venture a few tentative speculations as to what the effects of these complications are on the transfer problem.

Many goods with varying transport costs, a_x, a_y, a_z . . . can be first handled on the assumption of fixed outputs : Any criteria sufficient to hold all relative prices invariant under these conditions can apply to the case of varying outputs—since outputs will not in fact vary without relative prices varying. Expressing the indemnity or payment in terms of specified goods of one or both countries, we can ask the question : In addition to the "primary burden," what is the "secondary burden" on each country as measured by each country's price changes weighed by its *algebraic* imports.

Economic theory does not permit me to give an answer to this question. Even in the case where domestic goods are created in each economy by transport costs (which suggest that elasticity of substitution for the imported goods ultimately becomes elastic in the orthodox manner), it is not clear that the terms of trade, as defined in the previous paragraph or by comparing non-domestic import goods' prices with export prices, can be presumed to change in any one direction.[1]

Yet, as Part I indicated on p. 302, the Viner model of one or more domestic goods in each country which are perfect substitutes on the production side for export goods does provide us with one rigorous and impressive defense of the orthodox view. With

[1] See Part I's discussion, Economic Journal, 1952, pp. 302–3 of the inconclusive case of fixed production with domestic goods.

export and domestic goods always having the same relative costs and prices, we may lump their expenditure together *à la* Hicks; then the Basic Convention will permit us to assume that less is spent marginally and on the average on imput goods, so that our criterion leads to the orthodox presumption.

In a pure Ricardian constant-cost world, a country can usually be assumed to produce none of the goods it imports. Therefore, domestic goods must compete with export goods alone, as in the Viner case. Professor Haberler has asked me whether it would not be possible to find models in which domestic goods were substitutable on the production side for imported goods, thus leading to anti-orthodox criteria. A number of such models are easily constructed.

Thus, suppose the same factors produced bricks in America as produced clothing; suppose, too, that the production-possibility schedule between food and clothing shows strongly increasing relative marginal costs, with the result that in equilibriu some clothing is produced as well as imported. Then for Ameri bricks and clothing may be treated as a composite Hicksi commodity of high expenditure relative to food. Similarly, Europe there will be low relative expenditure on its export goo relative to remaining goods. Assuming identical average a marginal propensities, we can deduce $C_A > C_E$ and an anti-orthod improvement in the payer's net terms of trade.

The real world may be somewhere in between : domes goods or goods whose transport costs are so heavy as to d courage their import relative to their home production may tu out to be substitutable on the production side with both *impo* and *exports*, being infinitely substitutable with neither. It th becomes a case of nice quantitative weighting, beyond the pow of casual econometricians and indeed under present conditi often beyond the powers of the most intensive statistical measu ment and inference, to provide us with any final answers. the whole, I—and I think Haberler—would be inclined to reg the relations between export and domestic goods as outweigh those between import and domestic goods, in accordance with Viner hypothesis and the orthodox conclusion.

It is well to know just how strong or weak the orthodox vi on the effects of transfer are. Findings of the present resea on pure barter models are summarised in Table IV.

Paul A. Samuelso

Massachusetts Institute of Technology.

STABILISATION POLICY IN A CLOSED ECONOMY [1]

RECOMMENDATIONS for stabilising aggregate production and employment have usually been derived from the analysis of multiplier models, using the method of comparative statics. This type of analysis does not provide a very firm basis for policy recommendations, for two reasons. First, the time path of income, production and employment during the process of adjustment is not revealed. It is quite possible that certain types of policy may give rise to undesired fluctuations, or even cause a previously stable system to become unstable, although the final equilibrium position as shown by a static analysis appears to be quite satisfactory. Second, the effects of variations in prices and interest rates cannot be dealt with adequately with the simple multiplier models which usually form the basis of the analysis.

In Section I of this article the usual assumption of constant prices and interest rates is retained, and a process analysis is used to illustrate some general principles of stabilisation policies. In Section II these principles are used in developing and analysing a more general model, in which prices and interest rates are flexible.

SECTION I

Some General Principles of Stabilisation

1. *The Model* [2]

The model consists of only two relationships. On the supply side, it is assumed that the rate of flow of current production, measured in real units per year and identical with the flow of real income, is adjusted, after a time lag, to the rate of flow of aggregate demand, also measured in real units per year. On the demand side, it is assumed that aggregate demand varies with real income or production, without significant time lag.[3] The proportion by which any change in aggregate demand induced by a change in real income falls short of that change in income will be called the marginal leakage from the system. In the simplest

[1] This article is based on part of the material of a thesis submitted to the University of London for the degree of Ph.D. I am indebted to Mr. A. C. L. Day, Mr. A. D. Knox, Professor J. E. Meade, Mr. W. T. Newlyn, Professor Lionel Robbins and Dr. W. J. L. Ryan for helpful comments on an earlier draft.

[2] A mathematical treatment of models used and of the stabilisation policies applied to them is given in the Mathematical Appendix.

[3] A demand lag could be introduced in addition to the production lag, but has been omitted to avoid complicating the mathematical treatment.

case of a closed economy with government ignored and with constant investment it is equal to the marginal propensity to save. In all the illustrations given below the marginal leakage is assumed to be 0·25.

The response of production to changes in demand is assumed to be gradual and continuous. For aggregative models this is more realistic than the usual assumption that production changes in sudden jumps. Even if each producer were to have a rigid production plan which he altered only at intervals of several months, the planning periods of the thousands of individual

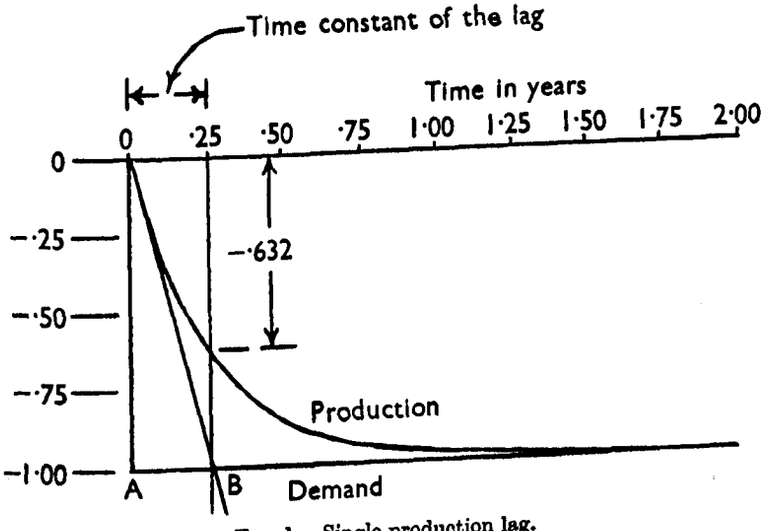


FIG. 1.—Single production lag.

producers would overlap, and the response of aggregate production to a sudden change in aggregate demand would consequently be more nearly approximated by a continuously changing variable than by one changing only at discrete intervals of time. To obtain a model in which this continuous change is represented, a distributed time lag is introduced by the hypothesis that whenever the production flow is different from the flow of demand, the production flow will be changing in a direction which tends to eliminate the difference and at a rate proportional to the difference.

The implications of this hypothesis are illustrated in Fig. 1, which shows the change that would occur in production if, from an initial equilibrium position, demand were to fall by one unit at time zero and to remain constant thereafter, on the assumption that the rate of change of production, measured in units per year per year, is four times the difference between demand and production,

both measured in units per year. The factor of proportionality, 4 in this case, is a measure of the speed of response of production to changes in demand, and is indicated in Fig. 1 by the slope of the line *OB*, drawn tangential to the production-response curve at *O*. Its reciprocal is a measure of the slowness of response, or time taken to adjust production to changes in demand, and is called the time constant of the production lag. In this case it is equal to 3 months or 0·25 of a year, and is indicated in Fig. 1 by the length of the line *AB*. The time constant may also be defined as the time that would be taken, after a sudden change in demand, for production to change by an amount equal to 0·632 [1] of the full adjustment required for a new equilibrium, if demand were meanwhile to remain constant at its new value.

It is possible that a better representation of the real process of adjustment would be obtained by analysing the time lag into a number of separate components operating consecutively. For example, there may be a time lag in observing that an adjustment is necessary, another in making the decision to carry out the adjustment, and a third in actually making the adjustment. If two such lags are assumed, each with a time constant of $6\frac{1}{2}$ weeks so that the combined time constant is 3 months as in the previous example, the time path of the adjustment becomes that shown in Curve (*b*) of Fig. 2, while if three consecutive lags are assumed, each with a time constant of $4\frac{1}{3}$ weeks, the time path becomes that shown in Curve (*c*) of Fig. 2.[2] Although the slower adjustment obtained in the initial stages of the process with these multiple lags may be more realistic than that which results from the assumption of a single lag, the single lag is retained in the following analysis in order to simplify the mathematics.[3] In all the illustrations given below, the time constant of this single production lag is assumed to be 3 months.

In the complete model demand does not remain constant during the process of adjustment, but itself responds to changes in real income and production. It is therefore necessary to

[1] Or $1 - e^{-1}$, where e is the base of Napierian logarithms.

[2] If the number of consecutive lags is increased indefinitely, the time constants of the separate lags being simultaneously reduced so that the combined time constant remains fixed, the time path approaches the limit of a step function, jumping from 0 to -1 after a period of time equal to the combined time constant. I am indebted to Mr. J. Wise for providing me with a rigorous mathematical proof of this.

[3] Since aggregate production includes services, the provision of which responds instantaneously to changes in the demand for them, the more rapid initial response obtained by assuming a single lag may in fact represent quite a good approximation to the real process of adjustment.

distinguish between an initial or spontaneous change in demand, representing a disturbance or change in the relationships of the model, and the additional or induced changes in demand which result from the dependence of demand on production and in turn induce further changes in production by the familiar multiplier process. When these induced effects are taken into account the

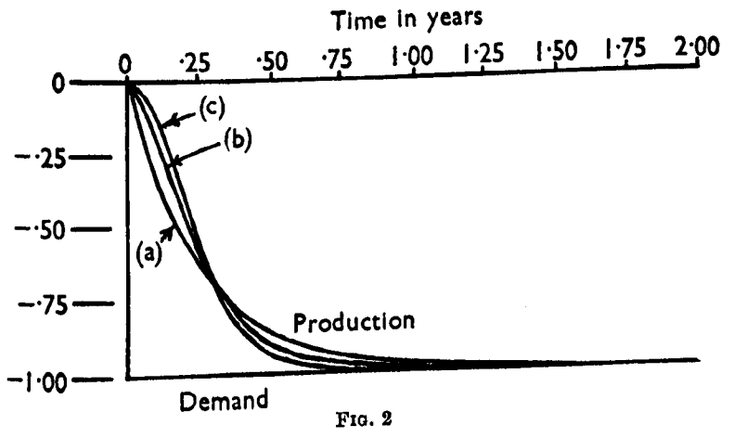


FIG. 2

Curve (*a*), single production lag.
Curve (*b*), double production lag.
Curve (*c*), triple production lag.

response of production, measured from an initial equilibrium value, to a spontaneous fall in demand of one unit, occurring at time zero and continuing thereafter, is shown by Curve (*a*) of Fig. 3. This is, of course, simply a continuous version of the ordinary multiplier process, the multiplier being the reciprocal of the marginal leakage, or 4.

2. *The Stabilisation Problem*

The adoption of a policy for stabilising production implies that there is some level of production which it is desired to maintain. The desired level may be that which, given the existing productive resources, would result in a certain level of employment, or it may be that which would result in a constant price index of consumers' goods, or the choice may be based on a number of other economic, political or social considerations. For the limited purpose of studying the principles of stabilisation in a closed economy the choice of desired production may be considered as given. The difference between the actual production and desired production at any time will be called the error in production.

Stabilisation policy consists in detecting any error and taking

correcting action, by altering government expenditure, taxation, or monetary and credit conditions, in order to change demand in a direction which tends to eliminate the error. The amount by which aggregate demand would be changed as a direct result of the stabilisation policy (*i.e.*, excluding the further changes in demand which will be induced automatically through the operation of the multiplier process) if the policy were to operate without time lag will be called the potential policy demand, and the amount by which aggregate demand is in fact changed at any time as a direct result of the policy will be called the actual policy demand. Both may, of course, be either positive or negative.

The actual policy demand will usually be different from the potential policy demand, owing to the time required for observing changes in the error, adjusting the correcting action accordingly and for the changes in the correcting action to produce their full effects. A distributed time lag can again be introduced by the hypothesis that whenever such a difference exists the actual policy demand will be changing in a direction which tends to eliminate the difference and at a rate proportional to the difference. The time constant of this lag can then be defined in the same way as was done in the case of the production lag. The examples given below have been worked out for alternative correction lags with time constants of six months and six weeks respectively.

A number of different types of stabilisation policy will now be considered, corresponding to the different ways in which the correcting action taken may be related to the error in production.[1]

3. *Proportional Stabilisation Policy*

The simplest type of stabilisation policy is one in which the correcting action taken is such that the potential policy demand is made proportional in magnitude and opposite in sign [2] to the error in production. The ratio of the potential policy demand to the error, which is a measure of the strength of the stabilisation policy, will be called the proportional correction factor. As an example, a proportional correction factor of 0·5 would mean that

[1] The following treatment is an application of the general principles of automatic regulating systems and closed-loop control systems, in the analysis of which notable advances have been made in recent years. Cf. G. H. Farrington, *Fundamentals of Automatic Control*, Chapman and Hall, London, 1951; and Brown and Campbell, *Principles of Servomechanisms*, John Wiley and Sons, New York, 1948. On the use of closed-loop control theory in economics, cf. A. Tustin, *The Mechanism of Economic Systems*, Heinemann, London, 1953.

[2] That is, the principle of " negative feed-back " is used.

if production was 2% below the desired value the authorities concerned would attempt directly to stimulate demand by an amount equal to 1% of production (excluding the further increase which would be induced through the multiplier effects), and as the error was gradually reduced as a result of this action they would decrease the potential policy demand proportionately.

To show the effect of such a policy, it will be assumed that from an equilibrium position with production at the desired value there occurs at time zero and continues thereafter a spontaneous

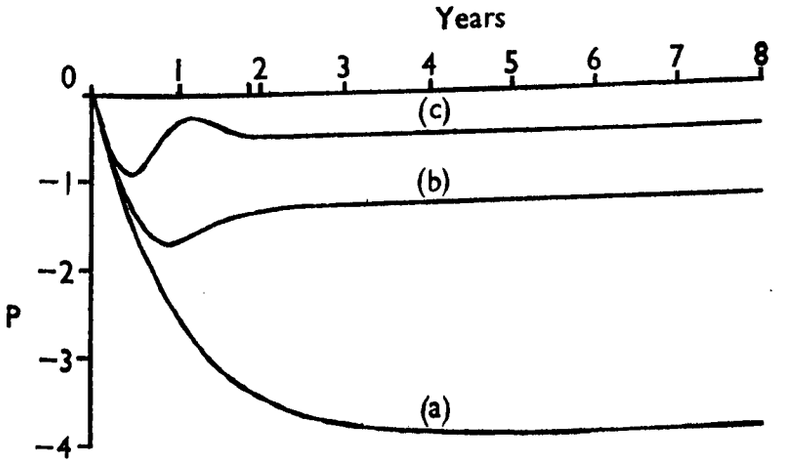


FIG. 3

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_p = 0{\cdot}5$, $T = 6$ months.
Curve (*c*), $f_p = 2$, $T = 6$ months.

Note.—The symbols used in Figs. 3 to 9 inclusive have the following meanings:

P Change in production (measured from initial equilibrium).
f_p Proportional correction factor.
f_i Integral correction factor.
f_d Derivative correction factor.
T Time constant of the correction lag.

fall in demand of one unit. The resulting time path of production, if the proportional correction factor is 0·5 and the correction lag has a time constant of 6 months, is shown by Curve (*b*) of Fig. 3. The marginal leakage is assumed, as before, to be 0·25 and the production lag to have a time constant of 3 months, so the effect of the stabilisation policy can be seen by comparing Curve (*b*) with Curve (*a*). Curve (*c*) of Fig. 3 shows the effect of a stronger policy with a proportional correction factor of 2, the time constant of the correction lag again being 6 months. In the examples illustrated in Fig. 4 the time constant of the correction lag has been reduced to 6 weeks, the proportional correction factor again being zero for Curve (*a*), 0·5 for Curve (*b*) and 2 for Curve (*c*).

Two defects of a proportional stabilisation policy are immediately apparent. First, complete correction of an error is not obtained, since the correcting action continues only because the error exists. If the spontaneous change in demand is denoted by δ, the error in the final equilibrium level of production by ϵ, the proportional correction factor by f_p and the marginal leakage by l, in the final equilibrium the sum of the spontaneous and the policy changes in demand will be $\delta - f_p\epsilon$. The usual multiplier formula applies, so the total change in demand and production,

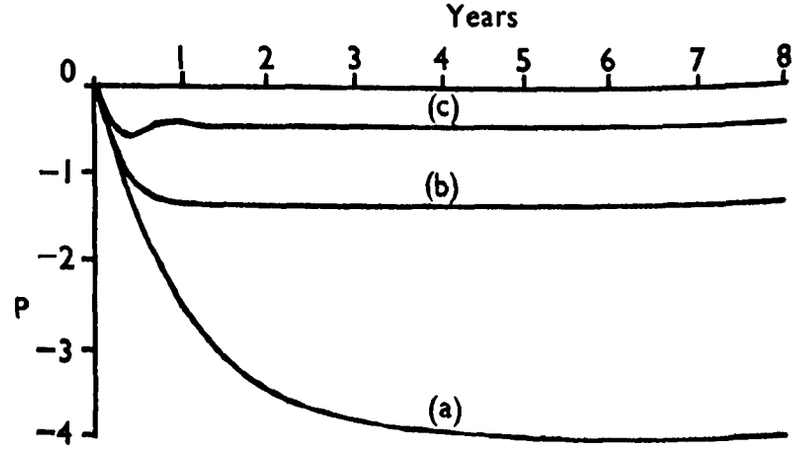


FIG. 4

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_p = 0{\cdot}5$, $T = 6$ weeks.
Curve (*c*), $f_p = 2$, $T = 6$ weeks.

including the change induced by the multiplier process, will be $\frac{\delta - f_p\epsilon}{l}$. But the change in production is also the error, so that $\frac{\delta - f_p\epsilon}{l} = \epsilon$, from which $\epsilon = \frac{\delta}{l + f_p}$. When this type of policy is applied, therefore, the static multiplier becomes the reciprocal of the sum of the marginal leakage and the proportional correction factor, and a proportional correction factor of infinity would be required if the error were to be completely eliminated. The second defect of a proportional stabilisation policy is that it tends to cause a cyclical fluctuation in the time path of production, this fluctuation being the greater, the stronger the policy and the longer the time lag involved in applying it.

It may be noted that the proportional correction factor and the marginal propensity to save, or more generally any marginal leakage, have similar effects on the stability of the system. With a marginal propensity to save of zero, the simple multiplier system assumed so far would have no inherent regulation at all, *i.e.*, no stable equilibrium position would exist. With a positive marginal propensity to save, the change in demand resulting from a given change in production would differ from what it would have been if the marginal propensity to save had been zero by an amount proportional in magnitude and opposite in sign to the change in production. The marginal propensity to save therefore acts as a regulating mechanism of the proportional type inherent in the economy.

4. *Integral Stabilisation Policy*

An integral stabilisation policy is one in which the potential policy demand at any time is made proportional in magnitude and opposite in sign to the cumulated error up to that time, *i.e.*, to the time integral of the error instead of to the magnitude of the error. In terms of Figs. 3 and 4, with an integral stabilisation policy the potential policy demand at any time is made proportional to the area between the actual production curve and the desired production curve (or zero line) up to that time, whereas with a proportional stabilisation policy it is made proportional to the vertical distance between the two curves at that time. The ratio of the potential policy demand to the time integral of the error will be called the integral correction factor. If an error in production of 2% were to occur and to persist for a year, then with an integral correction factor of 0·5 the potential policy demand would be increased steadily from zero at the beginning to 1% of production at the end of the year. It is clear that with an integral stabilisation policy the final equilibrium position, if it exists, will be one in which the error is completely eliminated, since so long as even the smallest error persists the cumulated error or time integral of the error must be continuously increasing, and with it the magnitude of the correcting action, so that equilibrium is possible only when the error is zero.

It will be found, however, that in thus avoiding the first defect of a proportional correction policy, the second defect, the introduction of cyclical fluctuations, is greatly aggravated, and for this reason integral correction is rarely used alone in automatic control systems. There may, however, be a tendency for monetary authorities, when attempting to correct an " error " in production, continuously to strengthen their correcting action the longer the error persists, in which case they would be applying an integral

correction policy.[1] Also, it will be argued in Section II of this article that flexible prices in an economy operate as an inherent regulating mechanism of the integral type. The integral relationship may therefore be of some importance in a number of economic adjustments.

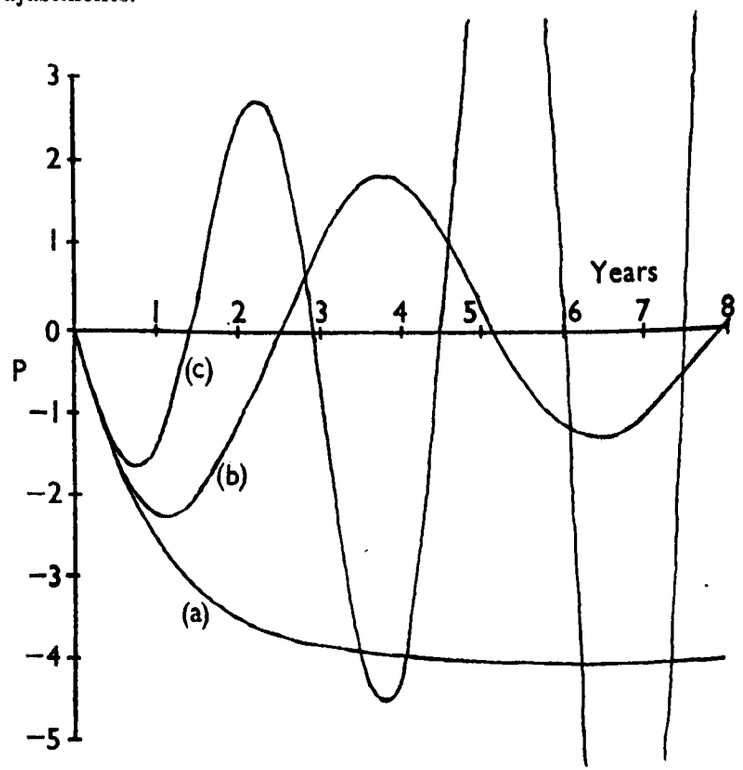


FIG. 5

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_i = 0{\cdot}5$, $T = 6$ months.
Curve (*c*), $f_i = 2$, $T = 6$ months.

Figs. 5 and 6 show the effects of applying an integral stabilisation policy. The assumptions of the basic model and the type of disturbance are the same as in the previous examples. Curves

[1] International adjustments are not dealt with in this article; but it may be worth noting here that a country which attempts to regulate its current balance of payments, whether by means of internal credit policy or quantitative import control, and in doing so responds mainly to the size of its foreign reserves (*i.e.*, to the time integral of its current balance of payments) is applying an integral correction policy which is likely to cause cyclical fluctuations similar to those illustrated in Figs. 5 and 6. The short cycles which have occurred in the balances of payments of a number of countries since the war may be in part the result of such action.

(*a*) again show the response of production to unit spontaneous fall in demand when there is no stabilisation policy. In Fig. 5, Curve (*b*) shows the effect of adopting a stabilisation policy with an integral correction factor of 0·5, and Curve (*c*) the effect of a stronger policy with an integral correction factor of 2, the time constant of the correction lag being 6 months in each case. Curves (*b*) and (*c*) in Fig. 6 show how the response is modified when the time constant of the correction lag is reduced to 6 weeks, the integral correction factor again being 0·5 for Curve (*b*) and 2 for Curve (*c*).

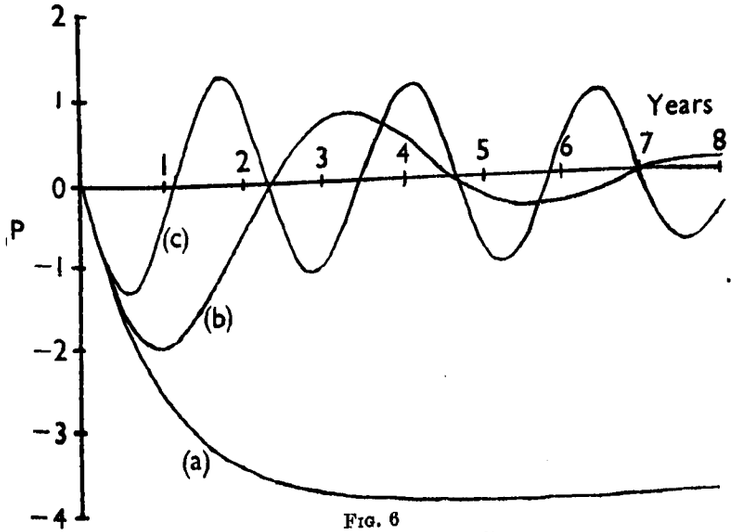


FIG. 6

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_i = 0{\cdot}5$, $T = 6$ weeks.
Curve (*c*), $f_i = 2$, $T = 6$ weeks.

It will be seen that even with a low value of the integral correction factor, cyclical fluctuations of considerable magnitude are caused by this type of policy, and also that the approach to the desired value of production is very slow. Moreover, any attempt to speed up the process by adopting a stronger policy is likely to do more harm than good by increasing the violence of the cyclical fluctuations, particularly when the time lag of the correcting action is long. With an integral correction factor of 2 and a correction lag of 6 months, as illustrated in Curve (*c*) of Fig. 3, the system has become dynamically unstable. In such a case the oscillations would increase in amplitude until limited by non-linearities in the system and would then persist within those limits so long as the policy was continued.

5. *Proportional Plus Integral Stabilisation Policy*

A combination of proportional and integral stabilisation policies gives much better results than either policy alone. This can be seen from Figs. 7 and 8, in which Curves (*a*) again show the response of production to unit spontaneous fall in demand in the absence of stabilisation policy. Curve (*b*) of Fig. 7 shows how this response is modified if a stabilisation policy is adopted having a proportional correction factor of 0·5 plus an integral correction factor of 0·5, the time constant of the correction lag being 6 months. The proportional element in the policy helps to speed up correction and to limit the fluctuations caused by the

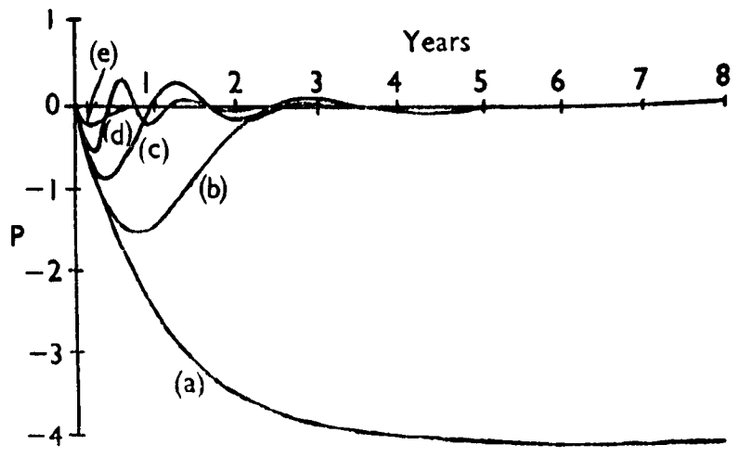


FIG. 7

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_p = 0{\cdot}5$, $f_i = 0{\cdot}5$, $T = 6$ months.
Curve (*c*), $f_p = 2$, $f_i = 2$, $T = 6$ months.
Curve (*d*), $f_p = 8$, $f_i = 8$, $T = 6$ months.
Curve (*e*), $f_p = 8$, $f_i = 8$, $f_d = 1$, $T = 6$ months.

integral policy, while the integral element provides the complete correction unobtainable with the proportional policy alone. Curve (*c*) of Fig. 7 shows the response when a stronger policy is adopted, keeping the same proportion between the two elements, both correction factors being raised to 2, while in Curve (*d*) they are raised to 8, the correction lag remaining at 6 months in each case.

In the examples illustrated in Fig. 8 the time constant of the correction lag is reduced to 6 weeks. Curve (*b*) shows the response when both proportional and integral correction factors are 0·5. Comparing this with Curve (*b*) of Fig. 7, it may appear paradoxical that with a shorter correction lag a longer time elapses before

something near full correction is obtained. The reason for this is that the more rapid operation of the policy results in a smaller error in the early stages of the adjustment, so that the cumulated error which forms the basis of the integral element is reduced, so reducing the speed of the later stages of the adjustment, which depend mainly on the integral element. The shorter the correction lag, therefore, the greater must be the integral correction factor if rapid correction is to be obtained. Conversely, of course, the longer the correction lag the smaller must be the integral correction factor if overshooting and fluctuations are to be avoided. A

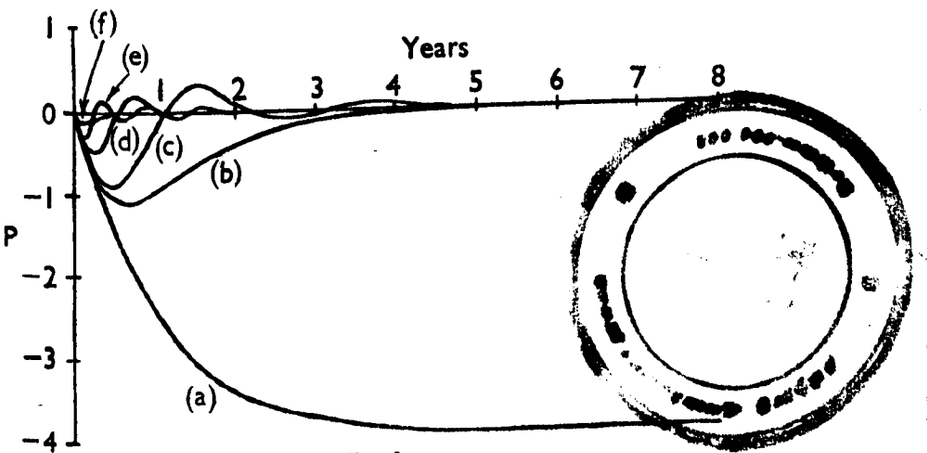


FIG. 8

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_p = 0{\cdot}5$, $f_i = 0{\cdot}5$, $T = 6$ weeks.
Curve (*c*), $f_p = 0{\cdot}5$, $f_i = 2$, $T = 6$ weeks.
Curve (*d*), $f_p = 2$, $f_i = 8$, $T = 6$ weeks.
Curve (*e*), $f_p = 8$, $f_i = 32$, $T = 6$ weeks.
Curve (*f*), $f_p = 8$, $f_i = 32$, $f_d = 0{\cdot}25$, $T = 6$ weeks.

proportional correction factor of 0·5 plus an integral correction factor of 2 gives the response shown by Curve (*c*) of Fig. 8, while for Curve (*d*) the proportional and integral correction factors are 2 and 8, and for Curve (*e*) 8 and 32 respectively.

The fluctuations in the responses shown in Curves (*b*), (*c*) and (*d*) of Fig. 7 and in Curves (*c*), (*d*) and (*e*) of Fig. 8 could be eliminated by a sufficient reduction in the integral correction factor in each case; but only at the cost of increasing both the maximum size of the error and the time taken to correct it. A better method is available which not only eliminates the fluctuations, but also reduces both the maximum size of the error and the time taken to obtain complete correction.

6. *The Addition of Derivative Correction*

This method is to add to the potential policy demand, as determined by the proportional and integral relationships, a third element, proportional in magnitude and opposite in sign to the rate of change, or time derivative, of production. The effect of this is to make demand lower than it would otherwise have been whenever production is rising, and higher than it would otherwise have been whenever production is falling, so tending to check movements in either direction without affecting the final equilibrium position. The ratio of the magnitude of this element in the potential policy demand to the rate of change of production is called the derivative correction factor.

Curve (*e*) of Fig. 7 shows the response of production to a unit fall in demand when a proportional plus integral plus derivative stabilisation policy is applied, the correction factors being 8, 8 and 1 respectively, with a correction lag of 6 months. This may be compared with Curve (*d*) of Fig. 7, which shows the response when the derivative element of the policy is omitted, the other elements being unchanged. Similarly, the addition of a derivative element with a correction factor of 0·25 to a proportional plus integral policy with correction factors of 8 and 32 respectively and a correction lag of 6 weeks modifies the response from that shown by Curve (*e*) of Fig. 8 to that shown by Curve (*f*). It will be noticed that in order to maintain a suitable balance between the three elements in the policy when the length of the correction lag is reduced, it is necessary to reduce the derivative correction factor in about the same proportion as the time constant of the correction lag, whereas the integral correction factor had to be increased in about the same proportion.

The reader may have observed that the application of a derivative correction policy introduces into the system the same type of relationship as that postulated by the acceleration principle, but operating in the opposite direction, the additional policy demand being opposite in sign to the rate of change of production, whereas the additional investment demand resulting from the operation of the acceleration principle is of the same sign as the rate of change of production. This means that so far as its effect on system stability is concerned, the acceleration principle acts as a perverse or destabilising derivative correction element. The usefulness of the acceleration hypothesis has sometimes been questioned. But stated in the moderate form, that when production is rising entrepreneurs will want to invest at a

greater rate, and after a time will in fact invest at a greater rate, than they would have done if production had not been rising, and conversely in the case of falling production, there can hardly be any doubt that the principle is a valid one. It seems desirable, therefore, to investigate the effects of stabilisation policies when the basic multiplier model is modified by the inclusion of an acceleration relationship.

7. *Stabilisation of a Multiplier–Accelerator Model*

We may define the term potential acceleration demand as the increase in investment demand that would occur as a direct result of rising production if the rise were to continue long enough for investment demand to become completely adjusted to it (and conversely in the case of falling production), and the term acceleration coefficient as the ratio between the potential acceleration demand and the rate of change of production which causes it.[1] Since investment demand will not respond instantaneously to alterations in the rate of change of production, a time lag may be introduced by the hypothesis that the actual acceleration demand tends continuously to approach the potential acceleration demand at a rate proportional to the difference between them. The time constant of this lag is defined in the same way as in the case of the production and correction lags.

Curve (*a*) of Fig. 9 (drawn with a different production scale from that used in Figs. 3–8 because of the greater fluctuations obtained) shows the response of production to unit spontaneous fall in demand when there is a marginal leakage of 0·25, a production lag with a time constant of 3 months, an acceleration coefficient of 0·6 and an acceleration lag with a time constant of 1 year, and when there is no stabilisation policy. With these values an explosive cycle is generated,[2] the fall in production in the first phase of the cycle being about 14 times as great as the spontaneous fall in demand. The cycle would eventually be limited by non-linearities in the system, and would then persist within those limits.

[1] Defined in this way, the acceleration coefficient is also the ratio of the change in the desired stock of capital to the change in the annual rate of production and real income, or what might be called the marginal desired capital–income ratio.

[2] The system gives damped oscillations when the acceleration coefficient lies between 0 and 0·5, explosive oscillations when it lies between 0·5 and 1, and is explosive without oscillations when the acceleration coefficient is greater than 1. All these values would probably be raised if the production and acceleration lags were divided, as they no doubt should be, into a number of separate shorter lags (observation lags, decision lags, process lags, etc.), and if similar lags were introduced in the response of demand to changes in income.

The application of a stabilisation policy having a proportional correction factor of 2 and a correction lag with a time constant of 6 months would change the response to that shown by Curve (*b*) of Fig. 9, and the addition to this policy of an integral element with a correction factor of 2 would change the response to that shown by Curve (*c*). As might be expected, the effect of the acceleration relationship has been to increase both the magnitude and the duration of the fluctuations resulting from these policies. (These responses may be compared with those shown by Curve (*c*) of Fig. 3 and Curve (*c*) of Fig. 7.)

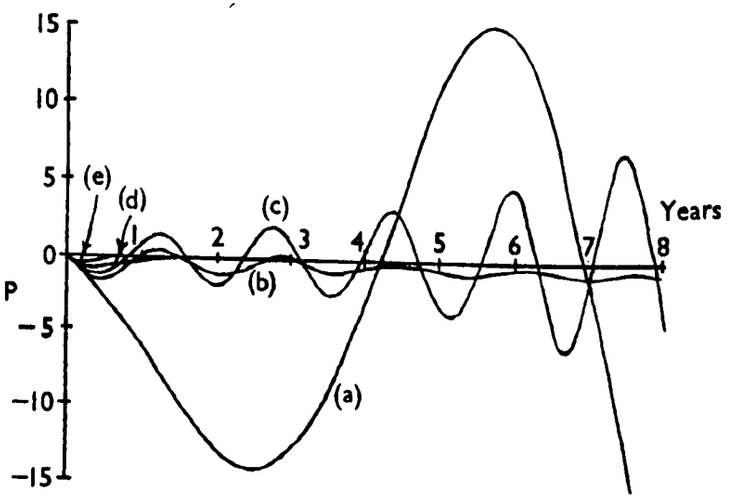


FIG. 9

Curve (*a*), no stabilisation policy.
Curve (*b*), $f_p = 2$, $T = 6$ months.
Curve (*c*), $f_p = 2$, $f_i = 2$, $T = 6$ months.
Curve (*d*), $f_p = 2$, $f_i = 2$, $f_d = 0{\cdot}55$, $T = 6$ months.
Curve (*e*), $f_p = 8$, $f_i = 8$, $f_d = 1{\cdot}3$, $T = 6$ months.

To eliminate these fluctuations it would be necessary to add a derivative element to stabilisation policy. A derivative correction factor of 0·3 would be needed to offset the acceleration coefficient of 0·6 (the derivative correction factor need be only half the size of the acceleration coefficient in this case, since the length of the correction lag is only half that of the acceleration lag), and an additional derivative correction factor of 0·25 would be needed to eliminate the fluctuations introduced by the proportional and integral elements of the stabilisation policy. Adding therefore a derivative element with a correction factor of 0·55 the response shown by Curve (*d*) of Fig. 9 is obtained. Finally, if the stabilisation policy was strengthened by multiplying each

correction factor (excepting that part of the derivative correction factor which was needed to offset the acceleration coefficient) by four, the response shown by Curve (*e*) would be obtained.

These results appear to indicate that if any stabilisation policy [1] is to be successful it must be made up of a suitable combination of proportional, integral and derivative elements. A strong proportional element is needed as the main basis of the policy, sufficient integral correction should be added to obtain complete correction of an error within a reasonable time and an element of derivative correction is required to overcome the oscillatory tendencies which may be introduced by the other two elements of the policy. If the system itself has a considerable tendency to oscillate as a result of a perverse derivative relationship inherent in it in the form of the acceleration principle, the integral element in the policy should be made very weak or avoided entirely, unless it can be accompanied by sufficient derivative correction to offset the destabilising effects of the perverse derivative relationship.

8. *Diagrammatic Representation of the System*

The system of relationships used in this Section can be represented by a block diagram of the type frequently employed in the analysis of closed-loop systems. In Fig. 10 the lines represent variables and the squares represent relationships between variables, the particular relationship in each case being indicated by the symbol within the square. D indicates differentiation with respect to time, $\int$ indicates integration with respect to time and L indicates the operation of a distributed time lag in the adjustment of one variable to another. Brackets indicate multiplication by the parameter inside the brackets. The arrows show the direction of causation or the sequence of responses. Circles represent addition or subtraction according to the algebraic signs shown in each case.

The simple multiplier model is represented by the single closed loop at the bottom of the diagram. Production P is related to demand E through the operation of the production time lag L_p, and in turn influences demand through the marginal propensity to spend $(1 - l)$, l being the marginal leakage. The

[1] The general principles of stabilisation have been illustrated here with particular reference to aggregate production in a closed economy, but they are of quite general applicability. They could equally well be used, for example, in investigating the stability of adjustments in international trade, or the problems involved in commodity price stabilisation schemes.

loop immediately above this represents the acceleration principle, which adds another component to demand equal to the rate change of production $\frac{dP}{dt}$ multiplied by the acceleration coefficient k and subject to the acceleration time lag L_a.

The three loops at the top of the diagram represent the three types of stabilisation policy. The error in production ϵ is obtained by subtracting the desired production P_d from the actual production. (In the illustrations given in this article all variables are measured as deviations from their values in an initial equilibrium position with production at the desired level.

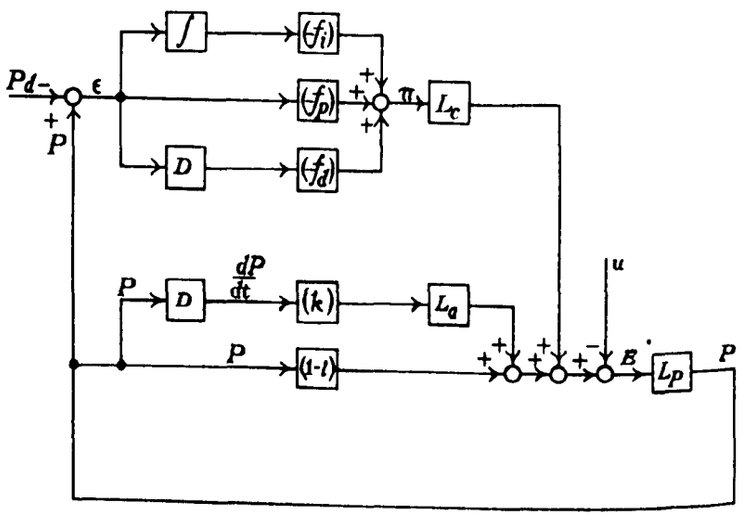


FIG. 10

P_d is therefore zero and ϵ equals P.) The error, the integral of the error and the derivative of the error are multiplied by $-f_p$, $-f_i$ and $-f_d$ respectively, f_p being the proportional correction factor, f_i the integral correction factor and f_d the derivative correction factor. The potential policy demand π is the sum of these products, and subject to the operation of the correction time lag L_c determines the actual policy demand which is added to the other components of aggregate demand.

The variable u represents a disturbance to the system, assumed throughout this article to take the form of a spontaneous fall in demand of one unit at time zero. Other forms of disturbance could, of course, be assumed and their effects investigated, and disturbances could be applied to other variables instead of, or in addition to, demand.

SECTION II

A Model with Flexible Prices

1. *The Relationship between Prices and Production*

If changes in the quantity and productivity of the factors of production are ignored, the change in the average level of product prices which results from a given change in the aggregate level of production will be the sum of two components. First, if the prices of the services of the factors of production (which will be referred to for brevity as factor prices) are absolutely rigid, product prices, tending to move with marginal costs, will vary directly with the level of production. This component of the change in product prices is probably not very large, and will be neglected in the following analysis.

Second, if factor prices have some degree of flexibility, there will be changes in product prices resulting from the changes which take place in factor prices. Even with flexible factor prices, there will be some level of production and employment which, given the bargaining powers of the different groups in the economy, will just result in the average level of factor prices remaining constant, this level of production and employment being lower, the stronger and more aggressive the organisation of the factors of production. If aggregate real demand is high enough to make a higher level of production than this profitable, entrepreneurs will be more anxious to obtain (and to retain) the services of labour and other factors of production and so less inclined to resist demands for higher wages and other factor rewards. Factor prices will therefore rise. The level of demand being high, the rising costs will be passed on in the form of higher product prices. Factor and product prices will continue to rise in this way so long as the high level of demand and production is maintained, the rate at which they rise being greater, the higher the level of demand and production.

Conversely, if aggregate real demand is so low that production at the level which would result in constant factor prices is unprofitable, entrepreneurs will be more anxious to force down factor prices, while at the lower level of employment factors will be less able to press for higher rewards and more inclined to accept lower rewards. Factor prices will therefore gradually move downwards, and the level of demand being low, the falling costs will be reflected in falling product prices. Prices will continue to fall in this way so long as demand and production remain

low, the rate of fall being greater, the lower the level of demand and production.

We may therefore postulate a relationship between the level of production and the rate of change of factor prices, which is probably of the form shown in Fig. 11, the fairly sharp bend in the curve where it passes through zero rate of change of prices being the result of the greater rigidity of factor prices in the downward than in the upward direction. The relationship between the level of production and the rate of change of product prices will be of a similar shape if productivity is constant. In

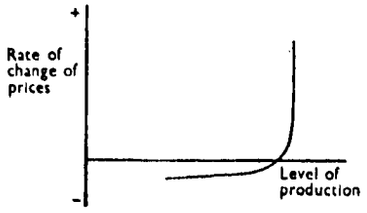


FIG. 11

spite of the marked curvature of the relationship, linearity may be assumed as an approximation for small changes in production. If the desired level of production is now taken to be that which would result in a constant level of product prices, we may say that the rate of change of product prices will be approximately proportional to the deviation of production from this level, *i.e.*, to the error in production, this approximation being better, the smaller the fluctuations which occur in production.

2. *Additional Relationships when Prices and Interest Rates are Flexible*

The model used in Section I can now be extended by dropping the assumption of constant prices and interest rates. The complete model is shown diagrammatically in Fig. 12, which is the same as Fig. 10 excepting for the addition of the group of relationships in the centre of the diagram. Four additional sequences can be distinguished.

(i) A deviation of production from the desired level will be accompanied by a change in the number of transactions and so a change in the amount of money needed for conducting them, even if prices are rigid. If the quantity of money is less than perfectly elastic, this will cause interest rates, i, to change in the same direction [1] as the error in production. As a result of this

[1] Provided that the liquidity preference schedule does not shift.

change in interest rates there will be a potential change [1] in investment demand and production, in the opposite direction to the error in production and (assuming linearity throughout) proportional to the error. This sequence of responses is represented in Fig. 12 by the closed loop of relationships (a), $(-b)$,

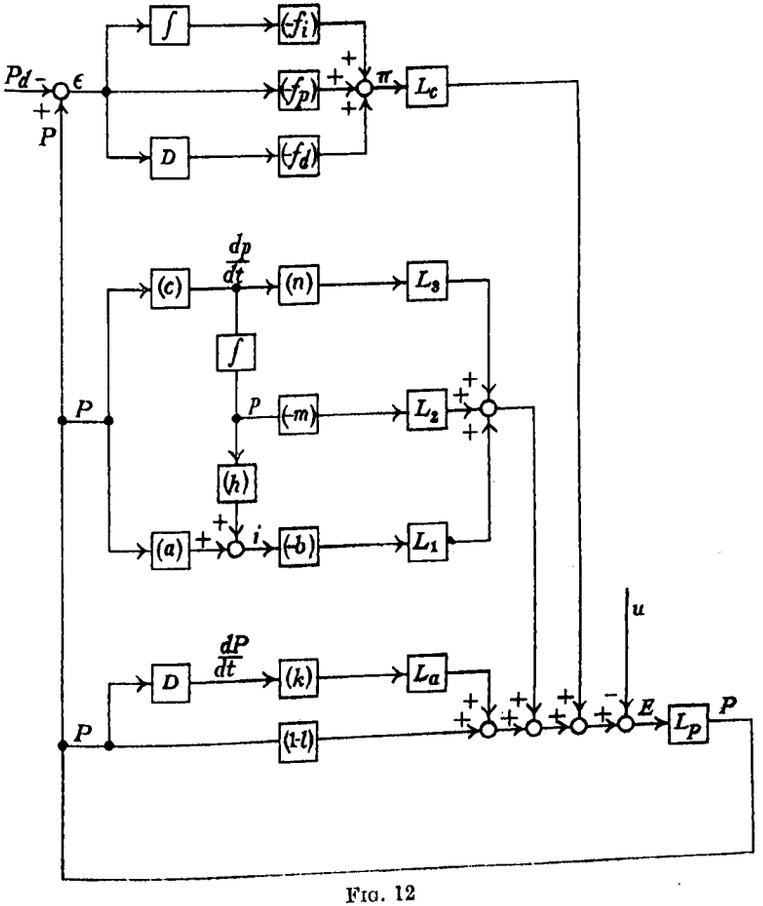


FIG. 12

L_1, L_P, giving a potential feed-back of $-abP$ and so acting as a regulating mechanism of the proportional type.

(ii) If prices, p, are flexible, the error in production will also cause prices to change at a rate proportional to the error. The amount by which prices have changed at any given time, being identical with the time integral of their rate of change up to that time, will be proportional to the time integral of the error. This

[1] It will be remembered that by a potential change in any variable we mean the change that would take place if no time lag was involved.

change in prices will cause a further change in the amount of money needed for conducting transactions, in addition to that caused by the change in the number of transactions conducted. There will therefore be an additional change in interest rates [1] in the same direction as the error, causing a further potential change in investment demand and production in the opposite direction to the error and proportional to the time integral of the error. This sequence of responses thus operates as a regulating mechanism of the integral type. The sequence is represented in Fig. 12 by the relationships (c), $\int$, (h), ($-b$), L_1, L_P, which give a potential feed-back of $-chb\int P$.

(iii) Professor Pigou has pointed out [2] that even if the liquidity preference schedule was infinitely elastic at the prevailing level of interest rates, so that interest rates failed to move with a change in production and prices, a change in the level of prices would still influence demand by changing the real value of money balances and so the amount of saving at given incomes and interest rates. This potential change in demand would be in the same direction as the change in the real value of money balances, and therefore in the opposite direction to the change in prices. For small changes it would be approximately proportional to the change in prices and therefore proportional to the time integral of the error in production. The Pigou effect is therefore equivalent to another integral regulating mechanism inherent in the economy. It is represented in Fig. 12 by the closed loop of relationships (c), $\int$, ($-m$), L_2, L_P, giving a potential feed-back of $-cm\int P$.

[1] The device of considering the quantity effects and price effects separately and then adding them can be justified as follows: Denoting interest rates, production and prices, measured from a zero base, by i_0, P_0 and p_0 respectively, and deviations from their initial equilibrium values by i, P and p, we have

$$i_0 = F(P_0, p_0)$$

Expanding this expression in a Taylor series and dropping all but the first two terms gives

$$\Delta i_0 = \frac{\partial i_0}{\partial P_0}\Delta P_0 + \frac{\partial i_0}{\partial p_0}\Delta p_0$$

or

$$i = \frac{\partial i}{\partial P}P + \frac{\partial i}{\partial p}p$$

as an approximation valid for small changes. For small changes $\frac{\partial i}{\partial P}$ and $\frac{\partial i}{\partial p}$ may also be considered constant, so we may write

$$i = aP + hp$$

which is the relationship shown in Fig. 12. Similar approximations are involved in considering the change in aggregate demand as the sum of a number of separate components.

[2] "The Classical Stationary State," ECONOMIC JOURNAL, December 1943, and "Economic Progress in a Stable Environment," *Economica*, August 1947.

(iv) Demand is also likely to be influenced by the rate at which prices are changing, or have been changing in the recent past, as distinct from the amount by which they have changed, this influence on demand being greater, the greater the rate of change of prices. Since the rate of change of prices in turn depends on the error in production, the potential change in demand and production resulting from these relationships will be approximately proportional to the error in production. This sequence of responses is represented in Fig. 12 by the relationships (c), (n), L_3, L_P, the potential feed-back therefore being cnP. The direction of this change in demand will depend on expectations about future price changes. If changing prices induce expectations of further changes in the *same* direction, as will probably be the case after fairly rapid and prolonged movements, demand will change in the same direction as the changing prices. That is, n will be positive, and there will be a positive feed-back tending to intensify the error, the response of demand to changing prices thus acting as a perverse or destabilising mechanism of the proportional type. If, on the other hand, there is confidence that any movement of prices away from the level ruling in the recent past will soon be reversed, demand is likely to change in the opposite direction to the changing prices. n will then be negative, and the response of demand to changing prices will act as a normal proportional regulating mechanism.

3. *Inherent Regulation of the System*

Some examples will be given below to illustrate the stability of this system under different conditions of price flexibility and with different expectations concerning future price changes. As before, it will be assumed that the marginal leakage is 0·25 and that the time constant of the production lag is 3 months. The time constants of the lags L_1, L_2 and L_3 will be taken as 6 months. The acceleration relationship will be omitted (by putting $k = 0$) so that the effects of price flexibility can be seen by comparing the response of the system with that of the multiplier model.

In deciding upon suitable values for the remaining parameters it will be convenient to think of the units being such that in the initial equilibrium position production is 100 units per year, the price index also being 100. Changes can be expressed in either absolute or percentage terms with negligible error so long as prices and production do not move too far from their initial equilibrium values. The product of the parameters a and b will be given the value 0·2, which is equivalent to assuming that if

production were to fall by 1% or 1 unit, prices remaining constant, interest rates would fall sufficiently to stimulate investment demand by 0·2 of a unit. The product of the parameters h and b must be a little greater than this, since if the price level were to fall by 1%, production remaining constant, there would be the

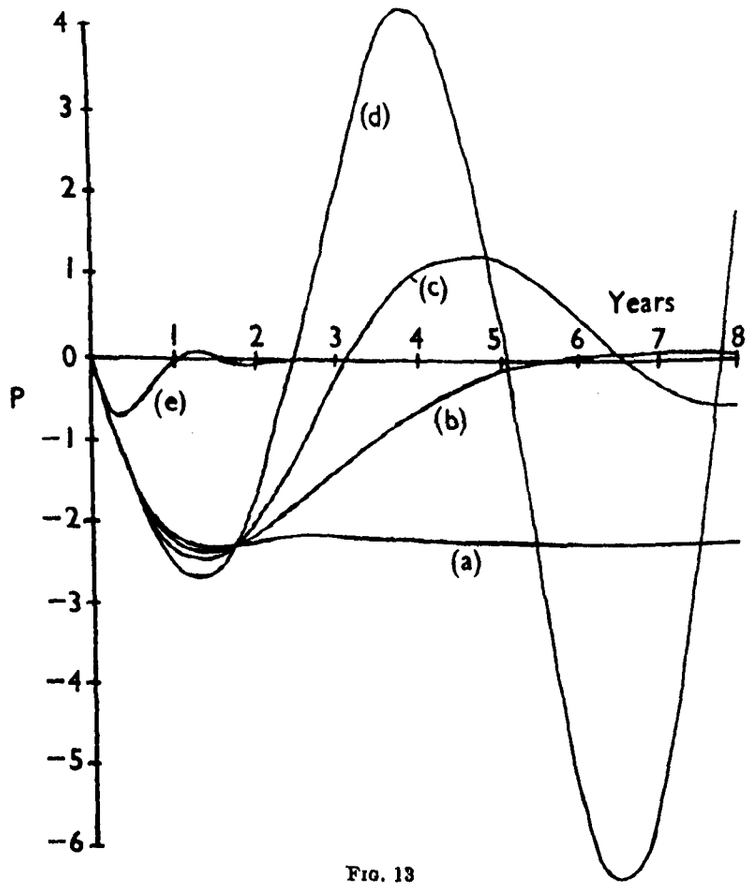


FIG. 13

Curve (a), zero price flexibility (c = 0).
Curve (b), c = 0·5, n = 0·2.
Curve (c), c = 1, n = 0·2.
Curve (d), c = 2, n = 0·2.
Curve (e), with stabilisation policy.

same reduction in the demand for money for transactions purposes; but the real value of money balances would be slightly increased so that the fall in interest rates would be rather greater. The product hb will therefore be given the value 0·25. m will be taken as 0·05, equivalent to assuming that a 1% fall in the price level would stimulate demand by 0·05% through its effect in

increasing the real value of money balances, if there was no change in interest rates.

The responses shown in Fig. 13 have been worked out on the assumption that n has the value 0·2. This means, for example, that if prices are falling at the rate of 1% per year, demand will tend to be 0·2 of 1% lower that it would have been if prices had been constant. Given these assumptions, Curve (*a*) shows the response of production to unit fall in demand when there is zero price flexibility ($c = 0$). This response is similar to that of the multiplier model (Curves (*a*) of Fig. 3–8); but the final error is less owing to the stabilising effects of the flexible interest rates.

Curve (*b*) shows the response when $c = 0·5$, *i.e.*, when for each 1% error in production prices change at the rate of 0·5% per year. The two integral regulating mechanisms now come into play, operating through interest rates and the Pigou effect respectively, so in the final equilibrium position the error is completely corrected. The total strength of the proportional regulating mechanisms is, however, reduced by the perverse effect of the response of demand to changing prices, with the result that the magnitude of the error in the early stages of the adjustment is slightly greater than in the case of zero price flexibility.

When $c = 1$ the response is that shown by Curve (*c*) and when $c = 2$ it becomes that shown by Curve (*d*). The strength of the integral regulating mechanisms increases with the increasing degree of price flexibility, while the total strength of the proportional regulating mechanisms decreases as demand responds perversely to the more rapid rate of change of prices, and both these effects tend to introduce fluctuations when price flexibility is increased beyond a certain point. When price expectations operate in this way, therefore, the system has fairly satisfactory self-regulating properties when prices are moderately flexible; but becomes unstable when there is a high degree of price flexibility.

If changing prices induce expectations of future changes in the reverse direction, n being given the value − 0·2, the response of the system when there are different degrees of price flexibility is as shown in Fig. 14. Curves (*a*), (*b*), (*c*) and (*d*) have been worked out for values of c of 0, 0·5, 1 and 2 respectively, and so can be compared with the equivalent curves in Fig. 13. In this case the response of demand to changing prices provides a normal proportional regulating mechanism which increases in strength with the increasing degree of price flexibility. This increasing

proportional regulation limits the fluctuations which would otherwise be introduced as a result of integral mechanisms, the strength of which also increases with increasing price flexibility, and at the same time increases the speed with which the error is corrected in the early stages of the adjustment. We may conclude that the self-regulating properties of the system will be considerably

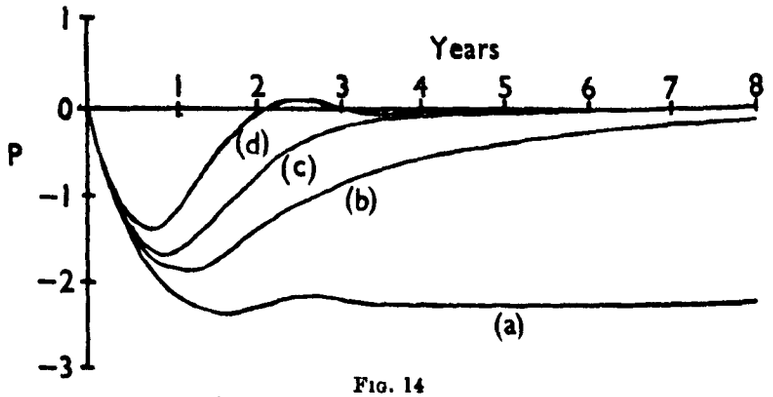


FIG. 14

Curve (*a*), zero price flexibility ($c = 0$).
Curve (*b*), $c = 0{\cdot}5$, $n = -0{\cdot}2$.
Curve (*c*), $c = 1$, $n = -0{\cdot}2$.
Curve (*d*), $c = 2$, $n = -0{\cdot}2$.

improved if there is confidence that any movement of prices away from the level ruling in the recent past will soon be reversed, and that if such confidence is sufficiently great the self-regulating properties will also be better, the higher the degree of price flexibility in the system.

Stabilisation of the System

If a stabilisation policy is applied to the system, the values of the correction factors required to produce any particular response will depend on the values of the parameters in the system. Examples of the values of correction factors which would result in the response shown by Curve (*e*) of Fig. 13 if the time constant of the correction lag was 6 months are given in the following table.

Proposals have sometimes been made for improving the stability of the economic system by "building in" additional regulating mechanisms. In the British Government's White Paper on Employment Policy [1] reference is made to a scheme for influencing consumption spending by varying the rates of social-insurance contributions above or below the standard rates by

[1] Cmd. 6527, 1944, paragraphs 68–71 and Appendix II.

Response of unstabilised system.	Stabilisation policy required to produce the response shown by Curve (*e*) of Fig. 13.		
	Proportional correction factor.	Integral correction factor.	Derivative correction factor.
Curve (*a*), Fig. 13	1·8	2·0	0·2
Curve (*b*), Fig. 13	1·9	1·85	0·2
Curve (*c*), Fig. 13	2·0	1·7	0·2
Curve (*d*), Fig. 13	2·2	1·4	0·2
Curve (*b*), Fig. 14	1·7	1·85	0·2
Curve (*c*), Fig. 14	1·6	1·7	0·2
Curve (*d*), Fig. 14	1·4	1·4	0·2
Curve (*a*), Figs. 3–8	2·0	2·0	0·2
Curve (*a*), Fig. 9	2·0	2·0	0·5

amounts depending on the percentage by which the actual employment is above or below the average percentage over a period of years. On the basis of the figures given in the White Paper to illustrate how the scheme might operate, this would introduce a proportional regulating mechanism with a correction factor of about 0·2.[1] If schemes of this sort could be administered successfully they would undoubtedly improve the stability of the system considerably, and would probably be more effective than attempts to forecast conditions a year or more ahead and adjust an annual budget accordingly.

Monetary policy would be a more convenient instrument for stabilising an economy. Some may doubt whether it is a sufficiently powerful instrument; but if the right type of stabilisation policy is being applied continuously, comparatively small correcting forces are sufficient to hold the system near the desired position once that position has been attained. It is quite likely, therefore, that a monetary policy based on the principles of automatic regulating systems would be adequate to deal with all but the most severe disturbances to the economic system.

[1] Professor Meade has suggested a scheme, operating through special monthly taxes and credits related to the level of employment, which would have similar effects. With the scales of taxes and credits suggested by him the proportional correction factor would be about 0·4. The cumulative expansion and contraction of the quantity of money resulting from the proposed method of financing the scheme would also introduce an integral correction element. Professor Meade must have been aware that there would be some disadvantage in having too much integral correction, since he recommended that this effect should be partially offset through appropriate action by the central bank. Cf. J. E. Meade, *Consumers' Credits and Unemployment*, Oxford University Press, London, 1938.

Mathematical Appendix

1. *Symbols Used*

P aggregate production, in units per year, measured from the initial equilibrium value.

E aggregate demand, in units per year, measured from the initial equilibrium value.

α the speed of response of production to changes in demand. The time constant of the production lag is $\frac{1}{\alpha}$ years.

D the differential operator $\frac{d}{dt}$.

t time in years.

l the marginal leakage.

u unit step function, equal to zero when $t < 0$ and to unity when $t > 0$.

β the speed of response of policy demand to changes in potential policy demand. The time constant of the correction lag is $\frac{1}{\beta}$ years.

f_p proportional correction factor.

f_i integral correction factor.

f_d derivative correction factor.

k acceleration coefficient.

κ speed of response of demand to changes in the rate of change of production. The time constant of the acceleration lag is $\frac{1}{\kappa}$ years.

If the rate of interest is denoted by i, the price level by p, and potential demand by E', the parameters of the price relationships shown in Fig. 12 are defined as :

$$a = \frac{\partial i}{\partial P} \qquad b = -\frac{\partial E'}{\partial i} \qquad c = \frac{\partial\left(\frac{dp}{dt}\right)}{\partial P}$$

$$h = \frac{\partial i}{\partial p} \qquad m = -\frac{\partial E'}{\partial p} \qquad n = \frac{\partial E'}{\partial\left(\frac{dp}{dt}\right)}$$

2. *Distributed Time Lags*

A single distributed time lag in the response of production to changes in demand is represented by the equation

$$DP = -\alpha(P - E) \quad . \quad . \quad . \quad . \quad (1)$$

from which

$$P = \frac{\alpha}{D + \alpha} E \quad . \quad . \quad . \quad . \quad . \quad (2)$$

Similarly, the value of any variable which responds with a stributed time lag to changes in another is obtained by multi- ying the value which that variable would have if there were no me lag by an operator of the form $\frac{\alpha}{D + \alpha}$, where $\frac{1}{\alpha}$ is the time nstant of the lag. This rule will be used whenever a time lag is troduced.

If, from equilibrium, demand were to fall by one unit at time = 0, we may substitute $E = -1$ when $t > 0$, giving

$$(D + \alpha)P = -\alpha \text{ when } t > 0 \quad . \quad . \quad . \quad (3)$$

ith the initial condition

$$P = 0 \text{ when } t = 0 \quad . \quad . \quad . \quad . \quad (4)$$

nce immediately after the change production will still be at its itial value.

The solution [1] of equations (3) and (4) is

$$P = -(1 - e^{-\alpha t})$$

hich is plotted in Fig. 1 and Curve (a) of Fig. 2 for $\alpha = 4$.

If there were two consecutive time lags in the response of roduction to demand, the time constant of each being $\frac{1}{8}$ year, quation (2) would become

$$P = \left(\frac{8}{D + 8}\right)^2 E \quad . \quad . \quad . \quad . \quad (2a)$$

fter the unit fall in demand, this gives

$$(D + 8)^2 P = -8^2 \text{ when } t > 0 \quad . \quad . \quad . \quad (3a)$$

ith initial conditions

$$P = 0,\ DP = 0 \text{ when } t = 0 \quad . \quad . \quad . \quad (4a)$$

he solution is

$$P = -[1 - (1 + 8t)e^{-8t}]$$

hich is plotted as Curve (b) of Fig. 2.

With three consecutive time lags each having a time constant

[1] For methods of solving ordinary linear differential equations with constant oefficients see Piaggio, *Differential Equations*, G. Bell & Sons, Ltd., London, 949, Chapter 3. For equations of order higher than the second a considerable aving of labour is obtained by using the Laplace Transformation instead of the lassical methods of solution. See Carslaw and Jaeger, *Operational Methods in pplied Mathematics*, Oxford University Press, Oxford, 1948, and Gardner and arnes, *Transients in Linear Systems*, John Wiley & Sons, New York, 1942.

of $\frac{1}{12}$ year the equations for the response to unit fall in demand would be

$$(D + 12)^3P = -12^3 \text{ when } t > 0 \quad . \quad . \quad (3b)$$

$$P = 0,\ DP = 0,\ D^2P = 0 \text{ when } t = 0 \quad . \quad . \quad (4b)$$

The solution is

$$P = -[1 - (1 + 12t + 72t^2)e^{-12t}]$$

which is plotted as Curve (c) of Fig. 2.

3. *The Multiplier Model*

The response of demand to changes in production or real income is represented by the equation

$$E = (1 - l)P - u \quad . \quad . \quad . \quad . \quad . \quad (5)$$

u being the spontaneous change in demand occurring at time $t = 0$. Substituting equation (5) in equation (1) and rearranging, we obtain

$$(D + \alpha l)P = -\alpha u \quad . \quad . \quad . \quad . \quad . \quad (6)$$

After the initial change in demand this becomes

$$(D + \alpha l)P = -\alpha \text{ when } t > 0 \quad . \quad . \quad . \quad (7)$$

with the initial condition

$$P = 0 \text{ when } t = 0 \quad . \quad . \quad . \quad . \quad . \quad (8)$$

since immediately after the change production will still be at its initial equilibrium value.

The solution of equations (7) and (8) for $\alpha = 4$ and $l = 0{\cdot}25$ is

$$P = -4(1 - e^{-t})$$

which is plotted as Curves (a) of Figs. 3–9 inclusive.

4. *Proportional Stabilisation Policy*

The potential policy demand is $-f_pP$, giving an actual policy demand of $-\frac{\beta f_p}{D + \beta}P$. Adding this to the demand shown in equation (5) we obtain

$$E = (1 - l)P - \frac{\beta f_p}{D + \beta}P - u \quad . \quad . \quad . \quad (5a)$$

Substituting this expression in equation (1) and rearranging gives

$$[D^2 + (\alpha l + \beta)D + \alpha\beta(l + f_p)]P = (-\alpha D - \alpha\beta)u \quad (6a)$$

After the initial change in demand u equals unity and the derivatives of u are zero, so that

$$[D^2 + (\alpha l + \beta)D + \alpha\beta(l + f_p)]P = -\alpha\beta \text{ when } t > 0 \quad (7a)$$

the initial conditions being

$$P = 0,\ DP = -\alpha \text{ when } t = 0 \quad . \quad . \quad (8a)$$

The solutions of equations (7a) and (8a) for different values of f_p and β, α and l having the same values as before, are given in the following table :

f_p.	β.	P.	Curve.
0·5	2	$-1{\cdot}33 - 1{\cdot}69e^{-1{\cdot}5t} \sin(111°\ t - 52°)$	Fig. 3 (b)
2	2	$-0{\cdot}44 - 0{\cdot}95e^{-1{\cdot}5t} \sin(227°\ t - 28°)$	Fig. 3 (c)
0·5	8	$-1{\cdot}33 - 1{\cdot}69e^{-4{\cdot}5t} \sin(111°\ t - 128°)$	Fig. 4 (b)
2	8	$-0{\cdot}44 - 0{\cdot}52e^{-4{\cdot}5t} \sin(412°\ t - 58°)$	Fig. 4 (c)

5. *Integral Stabilisation Policy*

With an integral stabilisation policy the actual policy demand is $-\frac{\beta f_i}{D + \beta}\int P dt$. Adding this to equation (5), differentiating with respect to time, then substituting in equation (1) and rearranging the terms, we obtain

$$[D^3 + (\alpha l + \beta)D^2 + \alpha\beta l D + \alpha\beta f_i]P = (-\alpha D^2 - \alpha\beta D)u \quad (6b)$$

After the initial change in demand this becomes

$$[D^3 + (\alpha l + \beta)D^2 + \alpha\beta l D + \alpha\beta f_i]P = 0 \text{ when } t > 0 \quad . \quad (7b)$$

with initial conditions [1]

$$P = 0,\ DP = -\alpha,\ D^2P = \alpha^2 l \text{ when } t = 0 \quad . \quad (8b)$$

[1] The initial conditions are not intuitively obvious when the equations are of the third or higher order. The following rules, derived from A. Porter, *An Introduction to Servomechanisms*, Methuen & Co., Ltd., London, 1950, pp. 50–3, to which the reader is referred for their justification, lay down a simple procedure for finding the initial conditions of the system in these cases.

(i) Integrate the equation with respect to time between the limits $t = -0$ and $t = +0$. Terms containing integrals of P and u between these limits are equal to zero and may be omitted.

(ii) Repeat the integrations until only the term in P remains. This gives the value of P when $t = 0$.

(iii) Substitute this value of P in the preceding equation, setting u equal to 1 and any derivatives of u equal to zero. This gives the value of DP when $t = 0$.

(iv) Repeat the substitutions until all the initial conditions have been obtained.

The solutions of equations (7*b*) and (8*b*) for different values of f_i and β are given in the table below :

f_i.	β.	P.	Curve.
0·5	2	$0{\cdot}37e^{-2{\cdot}30t} - 2{\cdot}55e^{-0{\cdot}10t}\sin(68{\cdot}3°\ t + 8{\cdot}3°)$	Fig. 5 (*b*)
2	2	$0{\cdot}33e^{-2{\cdot}65t} - 1{\cdot}34e^{0{\cdot}32t}\sin(118°\ t + 14°)$	Fig. 5 (*c*)
0·5	8	$0{\cdot}02e^{-8{\cdot}27t} - 2{\cdot}88e^{-0{\cdot}37t}\sin(77{\cdot}0°\ t + 0{\cdot}34°)$	Fig. 6 (*b*)
2	8	$0{\cdot}04e^{-8{\cdot}91t} - 1{\cdot}35e^{-0{\cdot}06t}\sin(154°\ t + 1{\cdot}8°)$	Fig. 6 (*c*)

6. *Proportional plus Integral Stabilisation Policy*

The actual policy demand in this case is $-\frac{\beta}{D+\beta}(f_pP + f_i\int Pdt)$. Following the same procedure as in the previous example, we obtain the equations

$$[D^3 + (\alpha l + \beta)D^2 + \alpha\beta(l + f_p)D + \alpha\beta f_i]P = 0 \quad \text{when } t > 0 \quad (7c)$$

$$P = 0,\ DP = -\alpha,\ D^2P = \alpha^2 l \quad \text{when } t = 0 \quad (8c)$$

Solutions for different values of f_p, f_i and β are :

f_p.	f_i.	f_d.	P.	Curve.
0·5	0·5	2	$-1{\cdot}33e^{-t} - 2{\cdot}67e^{-t}\sin(99{\cdot}4°\ t - 30°)$	Fig. 7 (*b*)
2	2	2	$-0{\cdot}27e^{-t} - 1{\cdot}07e^{-t}\sin(221°\ t - 15°)$	Fig. 7 (*c*)
8	8	2	$-0{\cdot}06e^{-t} - 0{\cdot}51e^{-t}\sin(455°\ t - 7°)$	Fig. 7 (*d*)
0·5	0·5	8	$-3{\cdot}11e^{-t} + (3{\cdot}11 + 5{\cdot}33t)e^{-4t}$	Fig. 8 (*b*)
0·5	2	8	$-0{\cdot}11e^{-6{\cdot}84t} - 1{\cdot}62e^{-1{\cdot}07t}\sin(164°\ t - 4°)$	Fig. 8 (*c*)
2	8	8	$-0{\cdot}22e^{-6{\cdot}92t} - 0{\cdot}70e^{-2{\cdot}08t}\sin(396°\ t - 18°)$	Fig. 8 (*d*)
8	32	8	$-0{\cdot}06e^{-6{\cdot}92t} - 0{\cdot}27e^{-2{\cdot}41t}\sin(880°\ t - 13°)$	Fig. 8 (*e*)

7. *Proportional plus Integral plus Derivative Stabilisation Policy*

The actual policy demand becomes

$$-\frac{\beta}{D+\beta}(f_pP + f_i\int Pdt + f_dDP)$$

Applying these rules to equation (7*b*) we obtain :

1st integration $D^2P + (\alpha l + \beta)DP + \alpha\beta lP = -\alpha Du - \alpha\beta u$ . . . (*a*)

2nd integration $DP + (\alpha l + \beta)P = -\alpha u$ . . . . . (*b*)

3rd integration $P = 0$ . . . . . (*c*)

Substituting equation (*c*) in (*b*) and setting u equal to unity,

$$DP = -\alpha \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (d)$$

Substituting (*c*) and (*d*) in (*a*) and setting u equal to unity and Du equal to zero,

$$D^2P - \alpha(\alpha l + \beta) = -\alpha\beta$$

or

$$D^2P = \alpha^2 l \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (e)$$

Equations (*c*), (*d*) and (*e*) give the initial conditions of the system.

Following the same procedure as before we obtain the equations

$$[D^3 + (\alpha l + \beta + \alpha\beta f_d)D^2 + \alpha\beta(l + f_p)D + \alpha\beta f_i]P = 0 \quad \text{when } t > 0 \quad (7d)$$

$$P = 0,\ DP = -\alpha,\ D^2P = \alpha^2(l + \beta f_d) \quad \text{when } t = 0 \quad (8d)$$

Solutions for various values of f_p, f_i, f_d and β are :

f_p.	f_i.	f_d.	β.	P.	Curve.
8	8	1	2	$-0{\cdot}08e^{-1{\cdot}18t} - 0{\cdot}68e^{-4{\cdot}91t}\sin(315°\ t - 6°)$	Fig. 7 (*e*)
8	32	0·25	8	$-0{\cdot}07e^{-5{\cdot}03t} - 0{\cdot}31e^{-5{\cdot}98t}\sin(741°\ t - 13°)$	Fig. 8 (*f*)

8. *The Multiplier–Accelerator Model*

The acceleration demand is $\frac{\kappa k}{D+\kappa}DP$. Adding this to the demand shown in equation (5) and following the usual procedure, the equations of the system are found to be

$$[D^2 + (\alpha l + \kappa - \alpha\kappa k)D + \alpha\kappa l]P = -\alpha\kappa \text{ when } t > 0 \quad (7e)$$

$$P = 0,\ DP = -\alpha \quad \text{when } t = 0 \quad (8e)$$

With $\alpha = 4$, $l = 0{\cdot}25$, $\kappa = 1$ and $k = 0{\cdot}6$ the solution, plotted as Curve (*a*) of Fig. 9, is

$$P = -4{\cdot}00 - 6{\cdot}32\,e^{0{\cdot}2t}\sin(56°\ t - 39°)$$

When a proportional stabilisation policy is applied the equations become

$$[D^3 + (\alpha l + \beta + \kappa - \alpha\kappa k)D^2 + (\alpha\beta l + \alpha\kappa l + \beta\kappa + \alpha\beta f_p - \alpha\beta\kappa k)D + \alpha\beta\kappa(l + f_p)]P = -\alpha\beta\kappa \text{ when } t > 0 \quad (7f)$$

$$P = 0,\ DP = -\alpha,\ D^2P = \alpha^2(l - \kappa k) \text{ when } t = 0 \quad (8f)$$

With $f_p = 2$, $\beta = 2$ and the other parameters retaining their previous values the solution, plotted as Curve (*b*) of Fig. 9, is

$$P = -0{\cdot}44 - 0{\cdot}025\,e^{-1{\cdot}15t} - 1{\cdot}10\,e^{-0{\cdot}225t}\sin(227°\ t - 25°)$$

With a proportional plus integral stabilisation policy the equations of the system are

$$[D^4 + (\alpha l + \beta + \kappa - \alpha\kappa k)D^3 + (\alpha\beta l + \alpha\kappa l + \beta\kappa + \alpha\beta f_p - \alpha\beta\kappa k)D^2 + (\alpha\beta\kappa l + \alpha\beta\kappa f_p + \alpha\beta f_i)D + \alpha\beta\kappa f_i]P = 0 \quad \text{when } t > 0 \quad (7g)$$

$$\left.\begin{aligned} &P = 0,\ DP = -\alpha,\ D^2P = \alpha^2(l - \kappa k) \\ &D^3P = \alpha^2(\beta f_p + \kappa^2 k) - \alpha^3(l - \kappa k)^2 \end{aligned}\right\} \text{when } t = 0 \quad (8g)$$

With $f_i = 2$, the other parameters retaining their previous values, the solution, plotted as Curve (c) of Fig. 9, is

$$P = -0{\cdot}07\, e^{-1{\cdot}43t} - 0{\cdot}13\, e^{-0{\cdot}69t} - 1{\cdot}08\, e^{0{\cdot}26t} \sin (231^\circ\, t - 11^\circ)$$

When a proportional plus integral plus derivative stabilisation policy is applied the equations of the system become

$$[D^4 + (\alpha l + \beta + \kappa + \alpha\beta f_d - \alpha\kappa k)D^3 + (\alpha\beta l + \alpha\kappa l + \beta\kappa + \alpha\beta f_p + \alpha\beta\kappa f_d - \alpha\beta\kappa k)D^2 + (\alpha\beta\kappa l + \alpha\beta\kappa f_p + \alpha\beta f_i)D + \alpha\beta\kappa f_i]P = 0 \text{ when } t > 0 \quad (7h)$$

$$\left.\begin{aligned} &P = 0,\ DP = -\alpha,\ D^2P = \alpha^2(l + \beta f_d - \kappa k) \\ &D^3P = \alpha^2(\beta f_p + \kappa^2 k - \beta^2 f_d) - \alpha^3(l^2 - 2\kappa kl \\ &\qquad + \kappa^2 k^2 + 2\beta f_d l + \beta^2 f_d^2 - 2\beta\kappa f_d k) \end{aligned}\right\} \text{when t} = 0 \quad (8h)$$

With $f_d = 0{\cdot}55$, the other parameters retaining their previous values, the solution, plotted as Curve (d) of Fig. 9, is

$$P = -0{\cdot}11\, e^{-0{\cdot}74t} + 0{\cdot}07\, e^{-2{\cdot}17t} - 1{\cdot}40\, e^{-1{\cdot}55t} \sin (158^\circ\, t - 2^\circ)$$

With $f_p = 8$, $f_i = 8$, $f_d = 1{\cdot}3$ and the other parameters as before, the solution, plotted as Curve (e) of Fig. 9, is

$$P = -0{\cdot}02\, e^{-0{\cdot}87t} - 0{\cdot}04\, e^{-1{\cdot}44t} - 0{\cdot}73\, e^{-0{\cdot}48t} \sin (300^\circ\, t - 5^\circ)$$

9. *The Model with Flexible Prices and Interest Rates*

If the time constants of the lags L_1, L_2 and L_3 in Fig. 12 are assumed for simplicity to be the same as the time constant of the correction lag, the total demand resulting from the system (excluding the acceleration relationship) is

$$E = (1 - l)P - \frac{\beta}{D + \beta}[(ab - cn + f_p)P + (cm + chb + f_i)\int P dt + f_d DP] - u$$

Substituting this expression in equation (1) and carrying out the same operations as in previous examples, we obtain the following equations of the system :

$$[D^3 + (\alpha l + \beta + \alpha\beta f_d)D^2 + \alpha\beta(l + ab - cn + f_p)D + \alpha\beta(cm + chb + f_i)]P = 0 \text{ when } t > 0 \quad (7i)$$

$$P = 0,\ DP = -\alpha,\ D^2P = \alpha^2(l + \beta f_d) \text{ when } t = 0 \quad (8i)$$

With $\alpha = 4$, $l = 0{\cdot}25$, $\beta = 2$, $m = 0{\cdot}05$, $ab = 0{\cdot}2$, $hb = 0{\cdot}25$ and f_p, f_i and f_d equal to zero, the solutions for various values of c and n are shown in the table below :

c.	n.	P.	Curve.
0	—	$-2{\cdot}22 - 2{\cdot}30e^{-1{\cdot}5t} \sin (66{\cdot}5^\circ\, t - 75{\cdot}5^\circ)$	Figs. 13 and 14 (*a*)
0·5	0·2	$-0{\cdot}38e^{-1{\cdot}82t} - 8{\cdot}00e^{-0{\cdot}68t} \sin (32{\cdot}0^\circ\, t - 2{\cdot}72^\circ)$	Fig. 13 (*b*)
1	0·2	$0{\cdot}36e^{-2{\cdot}89t} - 3{\cdot}36e^{-0{\cdot}21t} \sin (53{\cdot}9^\circ\, t + 6{\cdot}1^\circ)$	Fig. 13 (*c*)
2	0·2	$0{\cdot}39e^{-3{\cdot}32t} - 2{\cdot}25e^{0{\cdot}16t} \sin (68{\cdot}3^\circ\, t + 10{\cdot}0^\circ)$	Fig. 13 (*d*)
0·5	− 0·2	$-2{\cdot}46e^{-0{\cdot}34t} - 2{\cdot}7e^{-1{\cdot}32t} \sin (75{\cdot}2^\circ\, t - 64{\cdot}0^\circ)$	Fig. 14 (*b*)
1	− 0·2	$-2{\cdot}11e^{-0{\cdot}66t} - 2{\cdot}86e^{-1{\cdot}17t} \sin (86{\cdot}6^\circ\, t - 47{\cdot}6^\circ)$	Fig. 14 (*c*)
2	− 0·2	$-1{\cdot}05e^{-t} - 2{\cdot}31e^{-t} \sin (112^\circ\, t - 27{\cdot}2^\circ)$	Fig. 14 (*d*)

If for each set of values of c and n in the above table, f_p, f_i and f_d are given the corresponding values shown in the table on page 315, the solution of the system becomes

$$P = -0{\cdot}26\, e^{-1{\cdot}14t} - 1{\cdot}10\, e^{-1{\cdot}73t} \sin (207^\circ\, t - 13{\cdot}6^\circ),$$

which is plotted as Curve (e) of Fig. 13.

A. W. PHILLIPS

London School of Economics.

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"TIED" INTERNATIONAL TRADING—THE INDONESIAN RAMI FIBRE TEST CASE[1]

I. Introductory

Not all countries are fortunate enough to have all the factors f production they need or, indeed, enough foreign exchange to uy the necessary raw materials. Hence solutions are being ought along unorthodox lines.

Japan has plenty of skill, experience, labour and capital equipent, but she is short of fibres necessary for her textile industry. ndonesia has no skill, little native entrepreneurship and no apital, but she could grow some fibrous plants. She, like Japan, as no cotton, but she could grow a significant quantity of rami a kind of huge nettle), whose fibre is converted into strong and atisfying textiles. Japan has considerable knowledge of processg rami fibre, some stages of which (especially the de-gumming) re complicated and could not at present be undertaken in Indoesia. Rami textiles are extremely strong and substitutable for a ange of cotton piece goods. Other countries of the South-east of sia, such as China, have established successful textile industries ased on rami.

During the occupation of Indonesia (1942–45) the Japanese uthorities turned a not inconsiderable area of good land from lantation products, *e.g.*, tobacco, to growing rami, notwithanding the fact that rami is said to sap the strength of the soil ore than any other crop. Rami culture is much more labourtensive than that of most native crops, and it yields five or six ops per annum. Java and Sumatra have conditions suitable r growing some rami.

After the war the area under rami cultivation was considerably duced, but several Indonesian Government experimental farms e engaged in rami culture. Under post-war conditions Japan's xtiles problem remains unsolved and hence her interest in curing steady and regular supplies of suitable fibres from urces near by and with the minimum use of foreign exchange. here seems to be here a strong desire to enter into specific lateral commitments with her suppliers of raw materials.

[1] All views expressed in this article are exclusively those of the author and mmit the National Planning Bureau or the United Nations T.A.A. in no way hatsoever.

Amongst the solutions suggested, but not yet implemented, is the conclusion of "tied" transactions, which would cause trade to flow outside the usual channels.

In this article we propose to study this type of "tied" transaction from a general point of view, using the example of Japan merely as a case of an industrial country facing a shortage of raw materials and Indonesia, on the other hand, as a case of an underdeveloped country capable of producing some of the raw materials but unable to process them into consumers' goods, of which she stands in need.

II. Free and Tied International Transactions

The economic evaluation of "tied" deals depends on the detailed provisions written into these transactions. One can discuss the balance of advantages only if all terms are clearly stated. Sometimes even a seemingly unimportant detail may turn the scales one way or the other. Rami fibre is no exception to the above remarks and, even if rami could be produced in Indonesia at very low costs and even if it did not displace any other lines of production, the terms of the barter of crude rami fibre against any other goods would have to be most meticulously considered. Details of such a barter proposal have not as yet been made known; hence we can analyse the whole problem of exchanging Indonesian rami against other products only in very broad analytical terms.

The present production of crude rami in Indonesia is very small and confined to a limited number of estates. We are told that planting of rami could be enlarged, and in fact during the Japanese occupation of 1942–45 output was beginning to increase. Assuming that a large crop of rami could be obtained, and assuming that the "displacement" cost would not be unduly large in terms of foregoing the output of other crops, our problem is: which is the best way of disposing of the rami produced.

The fact that during the war the Japanese showed much interest in rami seems to indicate a line of thought very likely to continue in peace-time. They have greatly improved the method of turning rami fibre into excellent textile products.

Like many other products, rami fibre produced in Indonesia could be dealt with in one of the following ways:

(*a*) it could be processed locally and converted into finished products, and either sold in Indonesia or exported;

(*b*) it could be passed through only the first crude stages

of processing and then exported against payments in dollars or any other valuta;

(*c*) it could be bartered or sold through a "tied" transaction in return for other goods which the other partner to the exchange can supply;

(*d*) it could be exchanged in a "tied" deal against rami finished products (textile) destined mainly for the Indonesian domestic market;

(*e*) finally, it could be dealt with by a combination of the foregoing.

From our viewpoint that course which gives maximum gain to the Indonesian economy must be followed. Where world prices are received for crude rami exported and world prices paid for other goods or finished rami products, the balance of advantages may not be difficult to arrive at. The assessment of "tied" transactions presents some difficulty.

Transactions vary as to the extent to which they are "tied"; some can be more tied than others. Indonesia would be much more restricted in her trade if the proceeds from rami sold to Japan were restricted to purchases of finished rami products than if she could buy any products of Japan she might choose. The narrower the range of goods or the choice of the manufacturers from whom Indonesia may be allowed to purchase the goods with the proceeds from her exports, the tighter is the nature of the "tie" and the greater, of course, should be the benefit for Indonesia derived therefrom.

III. The Essence of "Tied" Transactions

The basic outlines of nearly all workable "tied" agreements are very simple indeed. In the case of Indonesia they work as follows:

> Indonesian exportable "surplus" products, *e.g.*, rami (assuming "tied" trade between Indonesia and Japan) will be exported from Indonesia and will, in all probability, be payable to the Indonesian producers in rupiahs, which in turn will be received from the Indonesian importers of Japanese goods into Indonesia. The Japanese exporters of goods will, in turn, be paid out of the proceeds from the sale of Indonesian crude rami by Japanese importers and manufacturers. It makes no difference if we introduce the intermediary of any go-between marketing organisation on either side, or if—as it is possible in case (*d*) discussed above—the same Japanese firms import Indonesian rami and export their own finished Japanese products to Indonesia. Transactions of the latter type can be effected almost without money. Firms receive raw materials and send out an agreed equivalent amount of finished rami products; the settlement of this sort of transaction can safely be left to the accountants.

It is quite possible, unless otherwise stated in the "tied" agreement, that the Japanese may obtain additional privileges in that they may regard themselves free to sell the Indonesian rami in the world market in competition with ordinary Indonesian rami sales, and thus gain useful dollars, which in turn can be always sold at a premium to most soft-currency areas. Hence it should be possible, in many cases, in the course of negotiations for a "tied" agreement, if they are conducted with skill and acumen, to secure for Indonesia corresponding privileges, *e.g.*, the choice of goods from countries outside Japan and to make the Japanese responsible for paying for them with the dollars obtained from the sale of Indonesian crude fibre.

IV. How to Judge the Usefulness of "Tied" Transactions?

Before going into the details of a transaction which involves entering into "tied" commitments, the Government of Indonesia must be in possession of a general formula by which it can judge whether it is worth while studying any proposals at all and whether a *prima facie* case has been established for entertaining the idea of such transactions.

We shall now develop a formula which could constitute an acid test of every "tied" transaction, using the rami fibre as an example. It should be stressed that this will be only the first acid test and that other rigid tests must be applied later. But its importance lies in the fact that it is the first test; hence if it is not satisfied, further analyses become automatically redundant.

V. The General Test

Is a "tied" transaction advantageous as compared with an open system of international trading? The general formula which should guide us is this: The "tied" transactions for our rami fibre are neither more nor less advantageous than transactions in the open world-market if:

> *The prices of the products sold by Indonesia in the world markets related to the prices of manufactures paid by Indonesia*

in the world market stand in the same ratio as the prices of products obtained by Indonesia in the "tied" market to the prices of manufactures paid by Indonesia to the "tied" supplier.

Call the price of Indonesian rami in the world market $IG(w)$.

Call the price of manufactures bought by Indonesia in the world markets $MP(w)$. Then the ratio $IG(w) : MP(w)$ gives us something corresponding to the Indonesian terms of trade in terms of internationally traded rami and manufactures.

Call the price of Indonesian surplus rami obtained in the "tied" deal $IG(t)$.

Call the price of manufactures bought by Indonesia in the "tied" market $MP(t)$.

Then the ratio $IG(t) : MP(t)$ gives us something corresponding to the Indonesian terms of trade in terms of rami and manufactures exchanged through the "tied" deal.

The critical point is reached when :

$$(1) \qquad \frac{IG(w)}{MP(w)} = \frac{IG(t)}{MP(t)}$$

(in which case the "tied" deal is neither attractive nor disadvantageous to the Indonesian economy);

$$(2) \qquad \frac{IG(w)}{MP(w)} < \frac{IG(t)}{MP(t)}$$

(then the transaction passes the first test); and again

$$(3) \qquad \frac{IG(w)}{MP(w)} > \frac{IG(t)}{MP(t)}$$

(here the "tied" transaction fails already in the first test).

The fact that we decide to call some goods "surplus" does not alter the General Formula.[1]

Thus armed with our formula, we now see that only if condition (2) is satisfied does the "tied" type contained in the international transactions pass the test. Seeing, however, the various attendant inconveniences and limitations which would be imposed on the Indonesian Republic by the so-called "basic agreement," and having regard to the considerable change which the

[1] Similar considerations underlie the practice of international dual pricing. See: A. M. de Neuman and D. J. Morgan, "Some Economic Aspects of Dual Pricing" in *Cartel*, July 1951.

agreement would have to bring about in the structure of commerce in this country, it would be necessary for the difference between

$$\frac{IG(t)}{MP(t)} - \frac{IG(w)}{MP(w)} = \max.$$

and in addition to the above condition, to be also of considerable magnitude.

The bigger the risks and the inconvenience of changing the traditional pattern of trade, the greater should be this difference. But it should be remembered that if, after a full and thorough investigation of the proposals, the advantages arising out of the proposals outweigh the disadvantages, and no doubt such a point could be reached in certain circumstances, then the case for concluding the agreement would be established.

The formula as worked out can be expressed in the statement that before the proposition is worth investigating, the terms of trade implied in it must be more favourable to Indonesia than are the terms of trade for the same commodities in the world market.

The first unavoidable complication is in the determination of the four quantities in the formula. To simplify the statement, suppose that the proposal concerns rami and textiles, and the quantity (and grade, etc.) of rami for the specified textile is contained in the proposal, then all we have to do is to determine the two quantities in the other ratio, which we are using as a standard.[1]

VI. Additional Tests

In Section II we have listed various possible types of transactions, of which (*b*) to (*e*) applied to international exchange of Indonesian rami. We could arrange these types of transactions in their order of desirability on general grounds. Thus we could say that type (*b*), *i.e.*, ordinary sales of rami for dollars, is more desirable and less risky than (*c*) or (*d*) in which we exchange the raw material against its finished product manufactured in any particular country (Japan). Finally, we could say that a "tie"

[1] The value of the manufactures in question might be found by asking other suppliers to quote prices. The value of the rami to Indonesia would have to be determined; if the quantity involved in the proposal is small in relation to the total quantity on the world market, then no problem arises. But if the quantity involved in the proposal (say Δq) is large, both in relation to the total in the world market and the total sold by Indonesia (say q), then the new price (say $p + \Delta p$) will be different from the price that would have existed, Δp, if the additional quantity of rami was not unloaded. The value to Indonesia of the additional rami is then $[(p + \Delta p)\ (q + \Delta q) - pq]$, it being understood that Δp is opposite in sign to Δq.

to a particular factory, which we could call type d_2, may be eve less desirable than type d_1, in which we have at least a choice c the factory in Japan where the rami products are to be manufac tured.

What is now the test of the desirability of the transactions On general grounds it should be said that the more " tied " th transaction the greater must be the accompanying advantag which should be demanded as a counterpart. Thus the terms c exchange under type d_2 should be more advantageous than th terms under d_1; the terms under the (d) types should be bette than under (c); (c) better than (b).

Adding the respective suffixes to our previous terms in th General Formula, we postulate that the following inequalitie should be satisfied :

$$\frac{IG(w)}{MP(w)} < \frac{IG(t)}{MP(t)}$$

$$\frac{IG(t)}{MP(t)} < \frac{IG(t)c;}{MP(t)c}$$

$$\frac{IG(t)c}{MP(t)c} < \frac{IG(t)d_1}{MP(t)d_1}$$

$$\frac{IG(t)d_1}{MP(t)d_1} < \frac{IG(t)d_2}{MP(t)d_2}$$

Thus $\frac{MP(t)d_2}{IG(t)d_2}$ must be smallest of all.

Transactions of type (e) would have to be fitted in the picture presumably somewhere in between, but certainly lower tha transactions of type (b).

VII. Case of More than Two Commodities Exchanged

Before we leave this subject and proceed to the analysis o some of the possible provisions and their implications, a word o general explanation should be said about the use of the Genera Formula. When we are dealing with one commodity only on eacl trading side, *e.g.*, textiles on the Indonesian import side and, say rami on the export side, then the formula is unambiguous anc easy of application. $IG(w)$ is then the average price realised ir the sale of Indonesian rami, $MP(w)$ is the price of the products (ir the same currency) bought by Indonesia in the cheapest foreigr market; $IG(t)$ is the average price paid by Japan to Indonesia ir rupiahs for rami, and $MP(t)$ is the rupiah price paid for Japanese

manufactures (or preferably the price paid for the most expen sively priced manufactures).

Complications arise as soon as we have many commodities on each side and some, *e.g.*, Japanese clothes, are priced cheaply, but Japanese yarn is expensive. How, then, to strike an average between some goods which are cheap and some which are expen sive, and how to assess the advantage of a transaction of this type? The problem becomes very difficult and one which lends itself to different interpretations by the two sides. The techni cian calls it the problem of index numbers, and he knows that different value judgments are then possible by the two contracting parties. Bearing in mind that " tied " transactions often cover or lead to a number of commodities changing hands on each side of the exchanging parties, the problem will always be present.

VIII. An Appraisal

A " tied " scheme is not a shot in the dark, and it seems to make sense. In fact, it resembles very closely the type of agree ment of which the Germans had considerable experience before the war, and which operated to the interest of Germany and in some cases gave a limited advantage to the other contracting countries.

Our General Formula developed earlier can assist us in the evaluation of any concrete proposals. The formula tells us that the left-hand and the right-hand side of the disequality are not independent but interconnected. Thus if, for instance, there is any connection between say, $IG(t)$ or the quantity of goods sold at $IG(t)$ prices *and* the $IG(w)$ prices or the quantity of goods sold at $IG(w)$, then this effect must be taken into account in deciding whether the transaction will prove profitable or not. This point will be easily understood. Some Indonesian products may be termed exportable " surplus products " and may be purchased with the view to further export to " hard " or " soft " currency countries, thus, presumably, depressing the prices of other goods in the same class exported from Indonesia outside the " surplus products " agreement, or proposed agreement. In turn, will some Japanese manufactured goods also be declared " surplus goods," and will Indonesian traders be allowed to export them to " hard " or " soft " currency countries? The latter, if feasible, might be very profitable to Indonesian economy, and there is no reason why such a full symmetry in the treatment should not be at least the starting point. If Indonesia has to forego this stand

later in the negotiation this should not be given up without some valuable compensations. A free hand given to the Japanese contractors over Indonesian goods like rami traded internationally may have a detrimental effect on $IG(w)$, *i.e.*, on the prices realised for Indonesian goods in the world markets in sales through orthodox channels.

It should always be borne in mind that Indonesian export goods, such as raw rami, entering into international trade are of a more homogeneous nature and of a kind more easily substituted for other similar commodities than the Japanese industrial products. Hence, there is a *prima facie* fear that the effect of $IG(t)$ on $IG(w)$ will often be greater than the effect of $MP(t)$ on $MP(w)$; in other words, the Japanese sales of Indonesian "surplus goods" in the world markets can do more harm to the Indonesian trade in the open world market than the Indonesian sales of Japanese industrial products made to suit Indonesian taste.

So far we have been assuming that under the agreement Japan would allow Indonesia to buy Japanese products of any kind she might choose. This need not always suit the Japanese. Indonesia will presumably be expected to submit a list of industrial products required.[1] A lot will depend on how much choice is allowed. It is not inconceivable that the choice might be very limited. The deal would certainly be worth considering if there were absolutely no limitations or restrictions whatsoever *de facto* or *de jure* as to the type of goods or equipment which may be obtained from Japan. It would be most advantageous if capital goods could be bought from Japan.

IX. Financial Provisions

It is not uncommon for "tied" agreements to be reinforced by various types of credit or banking facilities. These arrangements are sometimes provided by one side to the transaction or by banks operating in third countries. Bank credit is not an essential part of the transaction, although it often benefits both countries. Let us assume that the bank credit will come from United States bankers. These credit arrangements must be studied very carefully. Any real long-term credit coming from United States banks would be of undoubted benefit to both countries: Indonesia and Japan. To Japan it would guarantee better employment in her industrial units by enabling her customer

[1] This may present great administrative difficulties from the planning point of view, see A. M. de Neuman "Approaches to the National Economic Planning in Indonesia" in *Economics and Finance of Indonesia*, October 1953, Djakarta.

to become a steady buyer, and it would allow Indonesia to buy manufactured goods from Japan, including capital goods which could facilitate the progress of industrialisation. In so far as this last class of goods is concerned, however, one should always bear in mind that Indonesia has not only an acute shortage of one factor of production—capital—but also of another factor of production—skilled labour. Capital without skilled labour is useless. Hence, Indonesia must not spare any effort in training labour so as to be able to receive and use the capital imported. A sufficiency of skilled labour is a precondition.

Banking facilities sometimes provide for opening of special accounts connected with "tied" transactions. The bank financing the transactions and granting credit may wish to have the power of disposal over the balances arising in the course of the implementation of the transactions. It is not uncommon for the bank to wish to have a free hand over the so-called "commodity exchange accounts." It may even be contemplated that the bank could supply rupiahs to outside customers. In this way a new and undesirable competition in the supply of rupiahs in competition with the national monetary authorities might be created. This may easily undermine the position of the rupiah in the currency markets of the world, and may run counter to the policy of the central bank of Indonesia.

A "tied" transaction could always be restricted to a certain sum of money, say, $10 million. The ceiling figure by itself is of very little meaning, and presumably constitutes only the upper limit of the transactions, at any time. There is no clear indication whether the long-term banking credit will rise to that amount. Also little can be said as to how often the transactions will have to be cleared. It would certainly not be in the interests of Indonesia to oversell rami or any other goods to Japan and, in fact, feed Japan with credit. The boot must be on the other foot. It is Japan, who, by obtaining credit from the United States bankers, should offer to Indonesia long- and medium-term credits gradually repayable in the so-called Indonesian products. In this type of transaction it is very important to remember that it is the debtor who is usually faring better than the creditor, and the timing for the start of the transaction is very important.

But in order to derive the maximum advantage from the deal, the Indonesian side must be perfectly clear what types of goods will be most needed here from Japan (or what goods could profitably be sold) and to be in the position to correlate the deliveries of Indonesian goods with the delivery to Indonesia of Japanese

products. This timing business will not be easy. Moreover, it should be remembered that wantonly ordered machinery, or machinery which is not immediately needed and is left rusting on the sites, is an admission of failure.

It is almost certain that, at large, the banking and commercial circles in the United States and the majority of capitalist countries will not like a " tied " agreement. This in itself may perhaps, not be so important provided the benefits derived for Indonesia are large and of a standing nature. Small risks, if counterbalanced by big potential gains, are sometimes worth taking. All will thus revolve around the magnitude and likelihood of the gain and the capacity for carrying out such transactions.

X. Administrative Problems

The administration of a " tied " agreement is a very skilled job. It is not easy to pilot a " tied " transaction so as to derive a full benefit therefrom; and it is easy to fall victim to mistakes. Japan and Germany have an enormous store of commercial experience and great resources of commercial and administrative skill in carrying out transactions which by the nature of things become divorced from the ordinary market mechanism. Indonesian resources in this field are untried and experience is scanty.

In " tied " transactions the advantages or disadvantages usually depend on administrative and commercial minutiæ. It is often the details and the incidentals that really matter. We have constantly to watch the extent of monopoly (or for that matter monopsony) on each side to the transaction and in each field; freedom of switching from one type of delivery to another; the relative prices of goods exchanged. We have constantly to be aware of the relative advantages at any point of time of the transactions described in Section II. Should one really tie the crude rami exports exclusively to Japanese textiles? Why not, for instance, to cambric, which is badly needed by the Indonesian batik industry, and which is in short supply owing to insufficient dollar allocation to this traditional Indonesian industry? How is the Marketing Organization in Indonesia to assemble the Indonesian orders for Japanese manufactures? The difficulty is big enough if we restrict ourselves to ordering Japanese rami textiles. It increases manyfold if we include other products. In what valuta will short deliveries be settled and at what prices? What will be the machinery for settling queries, let alone disputes, as

to gradings, short deliveries, measures, failures to keep dates, etc.?

The exchange under proper safeguards of Indonesian against Japanese goods may be profitable for Indonesia if transacted with expert knowledge of what products are wanted and of the problems of marketing the Indonesian goods. But in fact would not Indonesia be facing, sooner or later, a tight ring of Japanese goods producers? Could she be allowed to go outside the ring or even outside Japan to buy her requirements? How would competitive safeguards be maintained? Would terms of delivery, prices, availability and prices of spare parts and replacements be satisfactory from the Indonesian point of view? Would not excessive play be made of patent rights and charges made for their use? Would Japan claim to buy all or only some " surpluses " of Indonesian rami and other goods? All these and many other matters are handled by people. Japan can be perfectly sure that she has the men to look after her own interests in arranging and carrying out these delicate, difficult and very tricky transactions. Her contacts with the international banking and commercial world are well established. Can the same be said of Indonesia? And let us remember that we are upsetting the free trading channels and directions of trade. On the answer to this question depends much of the answer to the whole proposal. There certainly can be terms of agreement which may undoubtedly be to Indonesia's benefit, but such terms would have to be very carefully negotiated.

It is difficult in advance to foresee all the implications which a " tied " scheme of bartering of Indonesian raw rami fibre against Japanese goods may contain and all the effects which it may bring about on the organisational pattern of Indonesian economy. It seems almost certain that not only would the buying and selling of crude rami fibre in Indonesia and its export have to be placed in the hands of some specialised agency but also that Japanese rami finished goods and other products imported into Indonesia through the " tied " transaction would have to be placed in its hands. The administration and the principles which should guide the agency may not be all plain sailing. There would have to be an office through which Indonesian demands for Japanese goods would have to be canalised. Will this be an easy job? Will the business and industrial enterprise be thereby assisted, or hampered? Will it be easier and better to wait for import permits for products from the non-tied sources, or will it be much better to obtain one's equipment via the new office,

possibly with less waiting and without having to pay anything in advance? These questions cannot be answered theoretically only, since they are of the utmost practical importance.

The skeleton part of the "tied" agreements is sometimes contained in a framework agreement, as was often customary in German "tied" agreements. Such a "Rahmenvertrag" may leave much or little room for individual transactions. Sometimes such basic "framework" agreements provide that deliveries and payments made on their basis are to remain outside and above the existing general agreements or agreements to be concluded in the future between the contracting countries. Difficulties may arise here. Moreover, it is not altogether clear what obligations may arise out of the GATT provisions.

A. M. DE NEUMAN

National Planning Bureau,
Djakarta,
Indonesia.

THE REPRESENTATIVE FIRM [1]

IT is now more than twenty-five years since Professor Robbins's famous article on the representative firm finally drove that concept from the pages of economic text-books.[2] It is the purpose of this paper to reconsider the whole discussion which accomplished this remarkable feat, and of which Professor Robbins's contribution was but a part. It is not my intention, however, merely to review the controversy. The reader will find that I offer what I suspect is a new interpretation of the theory of the representative firm.

Marshall's whole account of supply price centred around the theory of the representative firm. This firm possessed both external and unexhausted internal economies. Its size and access to these economies depended on the output of the industry. And its cost of production governed the supply price of the industry. We may quote a famous passage from Marshall:

> "These results will be of great importance when we come to discuss the causes which govern the supply price of a commodity. We shall have to analyse carefully the normal cost of producing a commodity, relative to a given aggregate volume of production; and for this purpose we shall have to study the *expenses of a representative producer* for that aggregate volume. On the one hand, we shall not want to select some new producer just struggling into business, who works under many disadvantages and has to be content for a time with little or no profits, but who is satisfied with the fact that he is establishing a connection and taking the first step towards building up a successful business; nor, on the other hand, shall we want to take a firm which by exceptionally long-sustained ability and good fortune has got together a vast business, and large well-ordered workshops that give it a superiority over almost all its rivals. But our representative firm must be one which has had a fairly long life, and which has normal access to the economies, external and internal, which belong to that aggregate volume of production; account being taken of the class of goods produced, the conditions of marketing them and the economic environment generally." [3]

[1] Most of this paper was first developed during my period as a Student of Nuffield College, Oxford (September 1950 to June 1952). I have been greatly helped and encouraged by Professor J. R. Hicks and by others then at Nuffield, notably Mr. R. W. Clower. I am much indebted, as well, to the writings of Mr. P. W. S. Andrews.

[2] Lionel Robbins, "The Representative Firm," ECONOMIC JOURNAL, Vol. XXXVIII (1928), pp. 387–404.

[3] Alfred Marshall, *Principles of Economics*, 8th Edition (London: Macmillan, 1920), p. 317, hereafter simply styled *Principles*.

It was generally agreed that the theory of the representative firm applied to conditions of what Marshall called "free competition" and "long-run equilibrium." The meaning of these terms was the pivot upon which, it can now be seen, criticism has turned. Those who attacked Marshall assumed that he had in mind what we would now call perfect competition and static equilibrium. Using this interpretation, Mr. Sraffa showed that Marshall had apparently involved himself in a logical inconsistency.[1] Unexhausted internal economies are not compatible with static equilibrium under perfect competition; the representative firm was not useful for determination of price under competitive conditions. But it was still used as a tool of the theory of distribution. It was here that Professor Robbins's intervention was decisive. He showed that with free mobility of resources and static equilibrium the representative firm was unnecessary for the theory of distribution, and might even prove misleading. Thus was the last important refuge of the theory of the representative firm denied it. It lingered for a while, a mere shadow of its former self, as an explanation of the different sizes of the typical firm in different industries, but has gradually passed from the stage altogether.

One of the most startling things about this controversy is the fact that such a far-reaching change in the structure of economic theory was allowed to take place without any really determined opposition. Partly, this may be explained by the fact that some of those who defended the representative firm were really interested not so much in this concept itself as in its use as an explanation of the existence of industries obeying the law of increasing returns. It will be remembered that such industries played an important part in the welfare prescriptions of both Marshall and Pigou. As long as economies external to the firm remained unscathed, the essential structure of this analysis was untouched, and alarm seemed unnecessary.

Of course, in the upshot this complacency proved unjustified. Sraffa's objection that economies external to the firm but internal to the industry were rare has, whatever the truth of the matter, been widely accepted.[2] And Mrs. Robinson's comment that external economies are inconsistent with perfect competition throughout the economy has proved more telling still.[3] But the

[1] P. Sraffa, "The Laws of Returns under Competitive Conditions," ECONOMIC JOURNAL, Vol. XXXVI (1926), pp. 335–50.

[2] Sraffa, *ibid.*

[3] J. Robinson, *Economics of Imperfect Competition* (London: Macmillan, 1933), p. 341.

thing which must surely strike one as most influential, both in undermining the Pigouvian position and in taking attention away from the representative firm, has been the development of the theories of imperfect and monopolistic competition.

The treatment of the economic environment as characterised by monopoly rather than competition was proposed in detail by Mr. Sraffa. One of his chief grounds for this attitude is the widespread prevalence of unexhausted internal economies. He says:

> "Everyday experience shows that a very large number of undertakings—and the majority of those which produce manufactured consumers' goods—work under conditions of individual diminishing costs. Almost any producer of such goods, if he could rely upon the market in which he sells his products being prepared to take any quantity of them from him at the current price, without any trouble on his part except that of producing them, would extend his business enormously. It is not easy, in times of normal activity, to find an undertaking which systematically restricts its own production to an amount less than that which it could sell at the current price, and which is at the same time prevented by competition from exceeding that price. Business men, who regard themselves as being subject to competitive conditions, would consider absurd the assertion that the limit to their production is to be found in the internal conditions of production in their firm, which do not permit of the production of a greater quantity without an increase in cost. The chief obstacle against which they have to contend when they want gradually to increase their production does not lie in the cost of production—which, indeed, generally favours them in that direction—but in the difficulty of selling the larger quantity of goods without reducing the price, or without having to face increased marketing expenses . . . ."[1]

Mrs. Joan Robinson took up the argument where Mr. Sraffa left off. She recognised clearly the importance of the theory of imperfect competition for the explanation of internal economies. In the introduction to her book she says:

> "Moreover, the relation between the real world and the competitive analysis of value was marred by frequent misunderstandings. The economists, misled by the logical priority of perfect competition in their schemes, were somehow trapped into thinking that it must be of equal importance in the real world. When they found in the real world some phenomenon, such as 'economies internal to the firm,' which is inconsistent with the assumptions of perfect competition, they were inclined to look for some complicated explanation of it, before the simple explanation occurred to

[1] Sraffa, *loc. cit.*, p. 543.

> them that the real world did not fulfil the assumptions of perfect competitions. Or they were tempted to introduce into the theoretical scheme elements which, at a superficial glance, appeared to account for the phenomena of the real world, but which completely destroyed the logical self-consistency of the theoretical scheme." [1]

It is important to notice that Mrs. Robinson begins by accepting the Marshallian emphasis on the industry. It seems to have been her intention to derive a supply curve for an industry whose constituent firms are in imperfect competition. But it is tempting to argue that an industry must sell its products at a single price if it is to be said to have a supply price. And thus there is a great difficulty in providing such a supply curve for an imperfectly competitive industry, a difficulty which Mrs. Robinson never really overcame. If each firm has its own demand and cost curves, it is not at once obvious that the price of the commodities produced by the various firms will be the same. Moreover, a particular shift of the demand curve facing each firm may result in a rise or fall of price, depending on the elasticity of the demand curve before and after the shift. It is not even certain how a shift in demand will change output; it may raise or lower it.

Mrs. Robinson attempts to solve these problems by postulating identical demand (and cost) curves for all firms in the industry, both before and after any shift in demand. This heroic assumption apparently removes the problem of different prices appearing for the same commodities; but it does not remove the indeterminancy of the supply curve. To discover the supply curve one must still know the *elasticities* of the particular demand curves before and after the change.

Professor Chamberlin has followed Mr. Sraffa more closely. He has contented himself with analysing the reactions of single firms and groups of competitors, and very carefully avoids talking about the supply curve of an industry under monopolistic competition. The difference of attitude between him and Mrs. Robinson is especially noticeable when we consider the problem of the nature of product differentiation. Whereas Mrs. Robinson has defined one industry as " any group of firms producing a single commodity," and a commodity as " a consumable good, arbitrarily demarcated from other kinds of goods, but which may be regarded for practical purposes as homogeneous within itself," [2] Professor Chamberlin shuns any such definitions. He even remarks that " this complete absence from imperfect competition of what is

[1] J. Robinson, *loc. cit.*, p. 4.

[2] J. Robinson, *loc. cit.*, p. 17.

probably the most fundamental concept of monopolistic competition," *i.e.*, the differentiation of the product, underlies the striking divergence between them in their interpretation of the economic system.[1]

Now, although Professor Chamberlin may be exploiting a merely verbal distinction between his and Mrs. Robinson's work, it seems to me quite fair to argue that he does intend a real break with the Marshallian tradition of industry analysis. His own explicit evaluation of the use of the industry concept is very timid, and yet the emphasis of the whole is unmistakable.[2] It is not surprising to find that Professor Triffin, carrying Professor Chamberlin's analysis to its logical conclusions, says: " In the general pure theory of value, the group and the industry are useless concepts." [3]

Thus the theory of monopolistic competition appears to have done away with the industry. It has, however, preserved those unexhausted internal economies which were among the principal features of the representative firm. And therefore it has helped to transfer the attention of welfare economists from the industry to the firm.

Now it is my belief that the interpretation of Marshall's theory of the representative firm as a static perfect competition model was unjustified, and that it has led to the neglect of the industry, a very useful tool of economic analysis. That Marshall's " free competition " was not perfect competition is gradually coming to be recognised. What it does imply is that " there is only one price in the market at one and the same time." [4] That Marshall regarded this as compatible with an imperfect market is clear from his treatment of a firm's " particular demand curve." [5]

What is of great interest is that this distinguishing characteristic of free competition—that " though everyone acts for himself, his knowledge of what others are doing is supposed to be generally

[1] E. H. Chamberlin, *The Theory of Monopolistic Competition*, 5th edition (Cambridge: Harvard University, 1947), p. 202, note 2.

[2] " It is not meant to discard completely the concept of an industry. In many connections it is obviously useful to delimit a portion of the economic system and study it in some degree of isolation from the rest . . . One emerges from any attempt to classify industries, however, with a feeling that it is also exceedingly arbitrary. The ' commonsense ' definition of industries in terms of which practical problems are likely to be studied seem to based much more upon technological criteria than upon the possibility of market substitution." Chamberlin, *ibid.*, p. 202, note 1.

[3] Robert Triffin, *Monopolistic Competition and General Equilibrium Theory* (Cambridge: Harvard University, 1940) p. 89.

[4] *Principles*, p. 341.

[5] *Ibid.*, p. 458, note.

sufficient to prevent him from taking a lower or paying a higher price than others are doing " [1]—provides the essential property required for the drawing up of an industry's supply curve.

We might not be much farther along, even here, were it not for the pathbreaking work which has been done on oligopoly by by Mr. Kaldor,[2] and the analysis of empirical work by Mr. P. W. S. Andrews and others.[3] Their results make it a good deal easier for us to provide at least a plausible account of how the situation which seems to be envisaged by Marshall could arise.[4] It is widely agreed that firms involved in a chain oligopoly operate as though their demand curves had a kink at the prevailing price. If there are a fairly large body of well-informed customers, it may be difficult for a firm to raise its price even a little above the general level without losing a large proportion of its clientele. A price cut will, on the other hand, be followed by the firm's competitors, and result in little gain. At the ruling price there will be a certain portion of the market which each firm obtains; and this we may call its goodwill. Now the price in such a situation is dependent upon the decisions of the various firms competing. We need not go into that here. What is important is that however price may change when demand changes, it will still be identical for all competitors. We have here a group of firms to which it appears natural to attach the name " industry." And this " industry " avoids all the pitfalls which beset Mrs. Robinson's attempt to draw up a supply curve under imperfect competition.

Of course the " industries " of common speech produce more than one product, and sell their different products at different prices. But, as Mr. Andrews has argued, the freedom of movement between different sectors of a technologically defined industry may be very great.[5] And if it is, a given expansion in the demand for the products of such an industry which is spread evenly over all the products produced may change their relative prices in some

[1] *Principles*, p. 341.

[2] N. Kaldor, " Market Imperfection and Excess Capacity," *Economica*, N.S. 11 (1935), pp. 122–36.

[3] R. J. Hall and C. J. Hitch, " Price Theory and Business Behaviour," *Oxford Economic Papers* 11 (1939), pp. 12–45.

[4] The theory presented here is, of course, applicable only to the case of differentiated products. Where a commodity is traded on a really perfect market it must obey other, and more familiar rules. Most of the difficulty in understanding Marshall is due to the fact that he seems to have wished to subsume both cases under one theory.

[5] P. W. S. Andrews, " Industrial Analysis in Economics " in *Oxford Studies in the Price Mechanism*, ed. T. Wilson and P. W. S. Andrews (Oxford: Clarendon Press, 1951), pp. 139–73.

definite way; this would enable us, by analogy, to speak of a supply curve of this wider industry. (We would have to be prepared, however, to find that certain products would rise in price, others fall !) [1]

It is, moreover, clear that Marshall's long run is intended to apply only to the industry as a whole, and not to each of the firms in it. Otherwise his insistence that " at any moment there is a rise and fall of large businesses, at any one moment some firm being in the ascending phase and others in the descending " [2] appears to have no relevance to the representative firm.

If this interpretation is correct, then what Marshall was concerned with was, at one and the same time, the long-run equilibrium of the industry, and the movement towards, and away from, long-run equilibrium of the firm. Marshall's firm is never actually in equilibrium.[3] In any case, it seems undeniable that the firms of the real world, imperfect competitors though they may be, are in no important respect any closer to their long-run equilibrium size than were Marshall's firms. Mrs. Robinson recognised this, and merely insisted that it would be more convenient to examine the imperfections of the market before considering the growth and decline of firms :

> " There are a further set of difficulties in drawing up the supply curve, arising from the passage of time. At any one moment all the firms in an industry may not be in equilibrium (from a long-period or quasi long-period point of view), some may be growing, and others declining, and yet the industry as a whole may be in equilibrium. It might be possible, therefore, to draw an industry's supply curve without assuming each firm to be of equilibrium size. The attempt to do so introduces many formidable difficulties which we have not considered, and they have received more attention from economists than the difficulties concerned with the imperfections of markets. Various devices have been suggested to overcome them, of which the most familiar

[1] Of course a sensible supply curve for such a composite industry is possible only if index numbers are used. We might assume that the physical volume of each of the goods produced is increased by the same percentage. In that case an index number of the prices of the commodities can be constructed having the physical volumes of output as weights. A movement of demand which produced such changes in output would hardly be likely in practice, but that does not make it conceptually impossible. We will make no use of this wider interpretation of the industry in what follows. It has been introduced only as an illustration of the potential usefulness of the industry concept.

[2] *Principles*, p. 316.

[3] This is *one* possible explanation of how the firm could be selling in a *perfectly competitive* market and still possess unexhausted internal economies. But I would myself imagine that we must lay most stress on the imperfections of markets in explaining internal economies.

is Marshall's Representative Firm. Since these devices are not designed to deal with the fundamental difficulty involved in the notion of a supply curve under imperfect competition, they must be taken to represent an attempt to deal with an imaginary world in which the market is perfect, but in which firms take time to reach their equilibrium size. This does not appear to be a very satisfactory method of approach. It would be impossible to tell how rapidly firms would grow or contract in a perfect market. The influences which prevent firms from growing are closely inter-related with the influences which make markets imperfect, and it may even be that in a perfect market there are no impediments at all to the growth of firms. A more fruitful line of attack appears to be to solve first the most abstract problem, in which there is neither time nor market imperfection; then to deal with cases in which the market is imperfect, but in which firms are imagined always to be in individual equilibrium; and, finally, to introduce the element of time, and to study cases in which firms are tending to grow (or contract) towards the position of individual equilibrium. Last of all, factors connected with ignorance, inertia, and the 'human element' generally, would have to be fitted into the scheme." [1]

It appears from what we have already said that the difference between Marshall and his critics is far less in the quality of their logic than in the nature of their assumptions. That observation might indeed close this paper; but I am anxious to argue that this difference in assumptions is not merely a question of convenience. It implies, I think, a difference in the sort of problems which concerned Marshall and those that have concerned later economists.

Marshall was, it seems to me, very interested in the problem of the structure of industries; with the decline of theoretical interest in industries that problem has slipped from view. And he was interested in the problem of the growth of firms; a thing which could hardly concern the modern theorist with his assumption of static equilibrium. It is my intention to consider briefly, in what follows, what light the theory of the representative firm may cast on these matters.

Before we turn to interpretation, however, it may be wise to present a few more paragraphs from Marshall:

> "Thus a representative firm is in some sense an average firm. But there are many ways in which the term 'average' might be interpreted in connection with a business. And a representative firm is that particular sort of average firm at

[1] J. Robinson, *loc. cit.*, p. 91. Cf. also A. C. Pigou, *Economics of Welfare*, 4th edition (London: Macmillan, 1932), pp. 789–90.

which we need to look in order to see how far the economies, *internal and external*, of production on a large scale have extended generally in the industry and country in question. We cannot see this by looking at one or two firms taken at random, but we can see it fairly well by selecting, after a broad survey, a firm, whether in private or joint stock management (or, better still, more than one) that represents to the best of our judgment, this particular average.

"The general argument of the present book shows that an increase in the aggregate volume of production of anything will generally increase the size, and therefore the internal economies possessed by such a representative firm; that it will always increase the external economies to which the firm has access; and this will enable it to manufacture at a less proportionate cost of labour and sacrifice than before." [1]

"When, therefore, we are considering the broad results which the growth of wealth and population exert on the economies of production, the general character of our conclusions is not very much affected by the fact that many of these economies depend directly on the size of the individual establishments engaged in the production, and that in almost every trade there is a constant rise and fall of large businesses, at any one moment some firms being in the ascending phase and others in the descending. For in times of average prosperity decay in one direction is sure to be more than balanced by growth in another." [2]

"Let us call to mind the representative firm, whose economies of production, internal and external, are dependent on the aggregate volume of the production of the commodity that it makes; and, postponing all further study of the nature of this dependence, let us assume that the normal supply price of any amount of that commodity may be taken to be the normal expenses of production (including *gross* earnings of management) by that firm. That is, let us assume that this is the price the expectation of which will just suffice to maintain the existing aggregate amount of production; some firms meanwhile rising and increasing their output, and others falling and diminishing theirs; but the aggregate amount of production remaining unchanged. A price higher than this would increase the growth of the rising firms and slacken, though it might not arrest, the decay of the falling firms; with the net result of an increase in the aggregate production. On the other hand a price lower than this would hasten the decay of the falling firms, and slacken the growth of the rising firms; and on the whole diminish production: and a rise or fall in price would affect in like manner, though perhaps not in an equal degree, those great joint-stock companies which often stagnate, but seldom die." [3]

[1] *Principles*, p. 317. [2] *Ibid.*, p. 316. [3] *Ibid.*, p. 342.

"Thus the history of the individual firm cannot be made the history of an industry any more than the history of an individual man can be made into the history of mankind. And yet the history of mankind is the outcome of the industry of individuals; and the aggregate production for a general market is the outcome of the motives which induce individual producers to expand or contract their production. It is just here that our device of a representative firm comes to our aid. We imagine to ourselves at any time a firm which has its fair share of those internal and external economies which appertain to the aggregate scale of production in the industry to which it belongs. We recognize that the size of such a firm, while partly dependent on changes in technique and in the costs of transport, is governed, other things being equal, by the general expansion of the industry. We regard the manager of it as reckoning up whether it would be worth his while to add a certain new line to his undertakings; whether he should introduce a certain new machine and so on. We regard him as treating the output which would result from that change more or less as a unit, and weighing in his mind the cost against the gain." [1]

We may interpret these paragraphs, with that given earlier, n this way :

(1) The firms that make up an industry find their sales limited by their kinked and falling particular demand curves. The total demand curve for the product of the industry determines, within obvious limits, the output of the industry as a whole at each price.

(2) The supply curve of an industry shows the costs of production of the representative firm in that industry at each output. If price is different, at any output, from the costs of production of the representative firm for that output, forces will be set up tending to move price to that latter level. These forces are a result of the nature of oligopolistic competition; their operation will be influenced somewhat by the circumstances described in point (4) below.

(3) The size of the representative firm depends on the output of the industry and the price at which its products are sold. For each level of output there exists one price at which the size of the representative firm is in equilibrium, and for each price, one output. The locus of these price–output combinations is the supply curve.

(4) If the size of the representative firm is in equilibrium at a particular level of output and price, a rise of price or a

[1] *Principles*, p. 459.

growth of output will increase its size, and a fall or a shrinkage will reduce it. On the other hand, an increase in the size of the representative firm will generally result in a fall of price, and a decrease will cause a rise.

(5) Firms may be out of equilibrium, even though the industry is in equilibrium. Some firms are rising, others are declining.

(6) The costs of production (whether average or marginal is not clear) of a firm decrease as its size increases, other things being equal.

(7) The external economies available to any firm in the industry increase, other things being equal, when the output of the industry increases.

(8) The supply curve of manufacturing industries is downward sloping to the right, because of the greater external economies of a larger output for an industry as a whole, and the greater internal economies open to the representative firm, which has, by hypothesis, grown with the output of the industry.

It has been customary to argue that the greatest practical difficulty in using the theory of the representative firm is that it is impossible to identify a representative firm. It follows, of course, that it is impossible to say whether the firm has grown. This appears to me to be a mere quibble. When I say that the age of the representative American has grown I am not talking gibberish. I mean merely that the age-distribution of the American population has shifted in a particular way. Much the same interpretation can be given of Marshall's theory. I do not know whether the size-distribution of the firms in an industry will in fact tend to shift in favour of larger firms when an industry's output grows, but there are very many plausible reasons why it should, centring around the opportunity which an established business has of getting the lion's share of any increase in trade.

The most severe difficulty which such an interpretation has to meet is the explanation of point (7) above. It may be said that Marshall has clearly in mind here that the normal supply price of any amount of a commodity is equal to the costs of production of some *particular* firm. But it seems to me that to speak thus is to ignore the fact that Marshall was above all a mathematician. My interpretation of this condition is simply that there is a unique relation between the size distribution of firms in an industry and its supply price, given the level and distribution of external

economies. This is made simpler by the fact that both external economies and the size-distribution of firms (and hence the distribution of internal economies) are, by hypothesis, uniquely related to the output of the industry.

Accepting this interpretation, conditions (1) to (8) reduce to the following result. Given the level of demand, there is one price which will keep the size distribution of firms in the industry in equilibrium. That price is the supply price of the industry for that output. Now let us start from a position of equilibrium with respect to both demand and price. If the demand curve shifts to the right, but price remains the same, the existence of a supply curve downward sloping to the right indicates that, at the new level of output, the old price will be above the new equilibrium price. So the size distribution of firms will shift to the right (*i.e.*, the representative firm will grow). As a result, the level of price will have a tendency to fall until a price is reached at which the size-distribution of firms becomes stable.

It is now easy to see why Marshall regards a downward-sloping supply curve as compatible with equilibrium. The supply curve shows, not the marginal costs of production of the various firms in the industry, but rather the prices at which particular quantities demanded will be supplied in equilibrium. It is also easy to see why Marshall insists that such an equilibrium is stable only "if the demand price is greater than the supply price for amounts just less than the equilibrium amount, and vice versa." [1] For otherwise the size-distribution of the firms in the industry will continue to shift if price is reduced by some small amount, and there will be no output and price at which this size distribution will become stable.

The theory of the structure of industry which emerges from this interpretation of the representative firm is, I think, much more complete than any competitor. It must be remembered, however, that as it stands it represents merely a series of untested hypotheses. There is little *a priori* reason to believe that all industries will in fact act in the same way, so that this theory may chiefly be useful as an ideal type against which to classify the behaviour of specific groups of producers. Its empirical testing is made extremely difficult, moreover, by the fact that it assumes that the state of technique is given. It appears to be implied,

[1] *Principles*, p. 345. Marshall's doubts about the reversibility of the supply curve seem to be justified by the improbability that the shift of the size-distribution of firms will be of the same dimensions, whatever the direction of a particular shift of demand.

moreover, that each of the firms in the industry has under its control the same group of processes; as a result the practical problems of integration and disintegration seem to be beyond its grasp.

The theory we have outlined brings into sharp focus the need for further work on two broad topics. The first of these is the analysis of the price policy of firms in chain oligopoly. The second is, of course, the theory of the growth of firms. Such a theory appears particularly useful in view of the current interest in the acceleration principle.

J. N. WOLFE

The University of Toronto.

A REJOINDER TO MR. EDWARDS [1]

A. I AM criticised for trying to square the full cost principle with the marginal analysis without reference to the "normal cost" theory.[2] My original position was this. When asked about his price and output policy the business-man replies with a series of propositions known as the full cost principle. His "marginal" cost—s.r.m.c.(p.a.) in the figure—is merely average direct cost, and is thought of as constant with output, though he may admit it rises eventually. On top of that he charges a gross profit margin, fixes the price and sees how much he can sell. The rising stretch of s.r.m.c.(p.a.) is of no interest to him, since it represents gross over-use of the fixed plant, and he believes production greater than *OZ* to be quite uneconomic. Yet with the fixed price he has fixed for himself for the time being a marginal revenue equal to price. Therefore s.r.m.c.(p.a.) is never equated to m.r. And all this is or could be rational profit maximising behaviour, since the long-run cost of using the fixed plant is quite different from the average direct cost for various reasons (pp. 518–19). We are entitled, nay compelled, to draw a l.r.m.c.(p.a.) curve which rises sooner than s.r.m.c.(p.a.). It is this curve that determines the maximiser's output, and this concept that is equated with m.r. The elasticity of demand is neither here nor there: any elasticity will do, provided the reference is to the true elasticity contemplated in the act of price fixing, not to the falsely perfect short-run elasticity achieved by temporarily fixing the price.

P.a. stands for partial adaptation, which means changes in the quantity of variable factors, the fixed factors remaining constant. The whole discussion concerns partial adaptation only. Neither the full cost principle itself nor my reconciliation of it with marginalism cover investment policy (total adaptation): they concern the best use of a given plant only. It is my incidental opinion that investment policy is infinitely too various to be subject to any sort of generalisation at all.

Mr. Edwards defends the "normal cost" theory. This is not, as he implies, a theory of price and output invented by

[1] ECONOMIC JOURNAL, September 1952, pp. 666–73 (hereafter called "Edwards"). Compare also the same author in *Economic Record* (Melbourne), May 1952.

[2] ECONOMIC JOURNAL, September 1950, pp. 515–30.

Mr. P. W. S. Andrews. For instance Mr. Edwards refers me to *Manufacturing Business*, pp. 145 ff. But there is no statement about *output* formation on those pages, and *as far as partial adaptation goes* there appears to be none anywhere else in Mr. Andrews' writings. There is, of course, much, most of it both valuable and true, on *price* formation alone. It was not my aim to reconcile the "normal cost" theory with the marginal analysis, since I did not then know what it was, its attitude to output formation never having been stated. Mr. Edwards, however, has now kindly given me a brief statement, which is based upon his two articles. The normal cost theory holds, he says, that:

> "The problem of the individual producer is to fix a price; *not* an optimum price–output combination. He does this by reference not only to his own costs of production, but also to the circumstances of the market including (in particular) the state of actual and potential competition. In any current period of production (short run), the entrepreneur will produce and sell at this price up to the limits of the goodwill he commands in the market, notwithstanding any associated rise in short-run costs. Thus for the individual firm, *there is no determinate short period price–output equilibrium* in the usual connotation of that term; there is, rather, an equilibrium of *price* but not of output.
>
> "If this involves producing in excess of the throughput for which the plant was designed (the 'planned throughput'), then—the state of demand being judged permanent—the firm will reorganise (extend) its plant; so that in the (static) long run equilibrium of the system, there will be a tendency for each of the firms that remain to be producing at, or about, the 'planned throughput' for its plant as it obtains at that time. The equilibrium is compatible with the maximisation of profits in that the inequalities m.r. > m.c. (to the left), and m.r. < m.c. (to the right) would obtain (taking average direct cost as a sufficient approximation to m.c. at this point); and in this sense, profits are maximised in the long run."

There is much to attract me here, and our disagreement is narrower than might appear from Mr. Edwards' attack. Our difference concerns marginal costs, and I stand absolutely by my distinction between true m.c., or "l.r.m.c.(p.a.)," and average direct cost, or "s.r.m.c.(p.a.)." I now hold, too, that it is misleading to call average direct cost marginal at all, and cannot see why it should be so called by anyone who does not believe it equal to m.r. Finally, I deny utterly the absence of equilibrium in respect to the long-run consequences of the use of a given

plant, and believe the normal cost theory founders owing to a confusion of the short run with the existence of a given plant.

B. To turn to Mr. Edwards' criticisms, they are as follows :

> 1. " The costs which enter into l.r.m.c.(p.a.) are not subject to pecuniary expression; not even in the sophisticated sense of calculable, and hence insurable, risks. (This might be possible in respect of elements (1) and (2); but it is abundantly clear that the entrepreneur could not effectively insure against the highly uncertain and cumulative effects envisaged under (3).)
>
> " In so far as the entrepreneur does regard these costs in his price/output policy, then, the l.r.m.c.(p.a.) function is hazy, notional and subjective in the extreme.
>
> " In the normal cost theory, on the other hand, these difficulties do not arise. When it comes to the determination of the firm's price/output policy (in that theory), the consideration set out in defining l.r.m.c.(p.a.) above, are irrelevant. Where they are relevant is in explaining why the cost curve is as it is up to *OZ* in Mr. Wiles' figure; *i.e.*, in explaining why the entrepreneur plans for the operational output *OX*, *along with* a reserve of capacity beyond that (and hence, constant average direct cost over the range)." [1]

But such is life, and so are the facts ! I cannot help it if the essential magnitudes are nearly non-operative; I merely record that these *are* the essential magnitudes, and that their extreme vagueness imparts extreme vagueness to the results. This is but a bare statement of the facts. A theory imparting more precision would be wrong, as also are the naïve versions of marginalism which claim so much precision. A theory sheering away from the essential magnitudes on the ground of their imprecision, and seeking some other basis, would also be wrong. This would appear to be the fault of the normal cost theory. Besides, Mr. Edwards really admits that these magnitudes do have weight, for he goes on to say that they explain " why the entrepreneur plans, etc." In other words he admits they are relevant in orginally deciding the size of the plant; why not, then, in deciding the use of that plant ? This comes perilously close to contradicting oneself.

2. Let there be no kink in the perfectly elastic demand curve, or let it lie far to the right of *X*. Then I am criticised because in fact manufacturing firms (of which alone we are speaking) scarcely ever face perfectly elastic demand curves, since there is almost always goodwill to introduce inelasticity.[2]

[1] Edwards, pp. 667–8.

[2] Pp. 670, 672.

In fact, many manufacturers face perfectly elastic demand. To enumerate : (*a*) firms subject to governmental or cartel price control, but uninhibited by output restrictions, who find that their potential market exceeds their capacity output; (*b*) makers of simple munitions selling to the Government; (*c*) miners of precious and non-ferrous metals; (*d*) firms subjecting homogeneous raw materials to short, simple, well-known, vertically disintegrated processes—*e.g.*, cotton spinners, flour millers, private gold coiners. Such firms are entirely indifferent to goodwill.[1] If the normal cost theory cannot explain these firms' policies it must yield to a theory that can. Only I submit, by positing a m.c. curve that rises to cut price = m.r., and is, in however vague a way, known by the firm to do just that, can it be explained why such firms do not expand their output almost indefinitely with a given plant.

Note that (*a*) and (*b*) are not in perfect markets at all. Such firms have quite imperfect knowledge of their " competitors " and of possible new customers. They do not stand, as Mr. Edwards so well puts it, in a " perfectly random relation to the custom of the market." [2] There is none of that geographical centralisation of buyers and sellers required for a perfect market—none of these conditions are necessary for perfectly elastic demand, which easily and often subsists outside perfect markets. Yet demand is still perfectly elastic, and without the postulated rising l.r.m.c.(p.a.) output would be infinite.

3. Let there be an ordinary, inelastic demand curve (much the most usual case, of course, in practice). Here the criticism seems partly to be concentrated in the exclamation mark at the end of the following sentence :

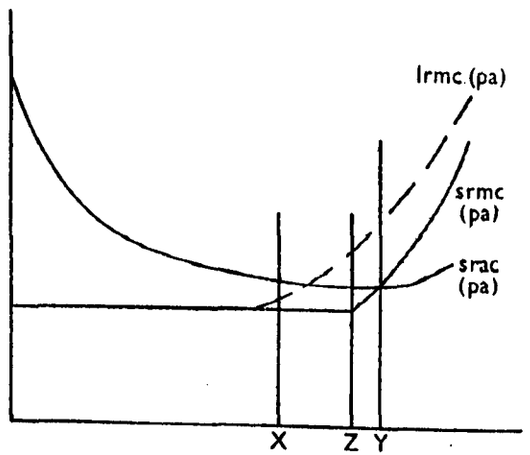
> " But if the validity of Mr. Wiles' analysis is granted at all, then the figure may be regarded as illustrating the effect of an *increase* in demand from the second to the first situation; so that the short-run (or p.a.) effect of a doubling of demand is to " make little difference to output, while price rises by some 43% ! " [3]

[1] *I.e.*, I do not " consistently pre-suppose " (p. 670) goodwill. There being exceptions to it, I try also to include those exceptions.

[2] *Economic Record, loc. cit.*, p. 53. This seems to me an admirable and illuminating way of describing a perfect market.

[3] Edwards, p. 673. The figure of 43% is obtained by measuring the distance between the two demand curves in my figure (fig. 5, my p. 524); they were kept so far apart, of course, in order to avoid a cat's cradle of indistinguish able lines. Had I perpetrated such an error of visual presentation, would Mr. Edwards have withdrawn his criticism ?

Is it suggested that I have said something untrue? Has Mr. Edwards never heard of full employment, or of the increasing inelasticity of supply of all goods? Does he suppose that the price rises which took place in 1945–51 produced great short-run increases in supply? If not, what is the exclamation mark for, and what is the criticism? Perhaps, however, I am myself to blame, since I did not emphasise enough that a shift in the m.r./m.c. cut from the *left* of X to the right of it, or from far left to near left, would naturally cause a very great increase in supply. Supply is not always inelastic; it is very elastic when there is surplus capacity. No statement could be more trite or acceptable than this; yet a l.r.m.c.(p.a.) curve, shaped as in the figure and



influencing entrepreneurial output decisions, follows from it with almost logical inevitability.

Mr. Edwards believes that an increase in demand when full capacity is already being worked will normally cause an "increase in output *pari passu*, supplied at an unchanged price not withstanding an associated increase in costs." [1] *I.e.*, it will be supplied at a loss if necessary, in order to avoid the loss of goodwill. Or "the entrepreneur will produce as much as he can, if the market wants it at the price chosen." [2] Surely entrepreneurs are not so irrational. If, as originally assumed, they are maximising long-run profit with the given plant, such behaviour is excluded by definition. They *must* then look to the

[1] Edwards, p. 674. He also goes into what the firm's reaction would be in the "long run," by which he means what I call total adaptation. I have no quarrel with him on this irrelevant question, and cannot understand why he thinks I have.

[2] Orally communicated.

l.r.m.c.(p.a.) or true m.c.(p.a.) of over-working their plant, and they *must* refuse business if this m.c. exceeds l.r.m.r. — a l.r.m.r. which has, of course, been defined to take account of goodwill. Yet the normal cost theory does hold that profits are maximised in the long run. Mr. Edwards is then simply contradicting himself if he thinks plant is worked over capacity without regard to (long-run) costs. He errs, it seems, because he has not grasped the important distinction between partial/total adaptation and short/long run. He can save himself from self-contradiction only by saying that profits are maximised with total but not with partial adaptation, and that the length of run is irrelevant. Logically unassailable, but surely not quite the normal cost theory, and certainly not true.

In other words, it cannot both be maintained that given plants are worked without regard to costs and that profits are maximised in the long run. For some plants remain given for a long period, and even those, the sole case really dealt with by Mr. Edwards, which secularly expand cannot therefore be maltreated at will in each successive short period. That would be to produce with l.r.m.c. (p.a.) greater than l.r.m.r. at each moment with each size of plant, and therefore to fail to maximise long-run profits during each short period. Consistent l.r. profit maximisation means that at each moment of time the existing plant is so used that l.r.m.r. = l.r.m.c.(p.a.). If at any moment of time or with any particular existing plant this is not so, profits are not maximised in the long run. Of course, in order to achieve this maximisation s.r. profits must never be maximised at all, in any short or long period. But that is neither here nor there.

Nor, again, is it any escape to say that m.c. is greater than m.r. in order to retain goodwill, for l.r.m.r., with which l.r.m.c.(p.a.) must at all times be equated, takes account of goodwill by definition. It follows, indeed, that l.r.m.r. may exceed the price charged, since a failure to sell now at that price loses the customer permanently. In that case, of course, l.r.m.c.(p.a.) should also exceed price, and this no doubt Mr. Edwards has very much in mind. But this is not at all to neglect costs, it is simply l.r. profit maximisation again. There is indeed one escape for those who totally reject the l.r.m.c.(p.a.) concept. They may make their entrepreneurs neglect it by making them indifferent to l.r. profit maximisation. Such an entrepreneur might well sacrifice his existing plant unconditionally to the retention of goodwill, and satisfy all his customers at low prices in booms while the bearings seize and the overtime bill is

quadrupled. Business behaviour is often "irrational," and I would certainly not rule out such a possibility. On the contrary, it is very attractive to me, and I find Mr. Edwards much too dogmatic in his insistence on profit maximisation. If we admit this possibility we reject one of the explicit and basic elements of the normal cost theory. On the other hand, l.r.m.c.(p.a.) remains a useful concept: the entrepreneur will continue to pay at least so much attention to it as is necessary to avoid losses. For all entrepreneurs at least do that.

4. Next Mr. Edwards rightly objects to my statement that firms "produce at the optimum point X," carelessly implying that they always do so.[1] This is not, of course, true. Firms seldom produce very far beyond it, since l.r.m.c.(p.a.) rises rather sharply, but may produce very far short of it. I would also like to substitute "rather sharply" for "very sharply," [2] since, as Mr. Edwards points out, there is always shift and Sunday working. These would cause a gradual, not a steep, rise in l.r.m.c.(p.a.). But the chief point remains, namely, that they make it higher than average direct cost.

It is a pity that Mr. Edwards should disagree so strongly with the one point that has now been widely accepted. For there is really nothing else to keep us apart. A rising l.r.m.c.(p.a.) curve, taking a different course from average direct cost—which is a much better name than s.r.m.c.(p.a.)—is compatible with nine-tenths of what Messrs. Edwards and Andrews have to say; and very illuminating most of that is. It would not disturb, for instance, Mr. Edwards' penetrating analysis of goodwill,[3] or Mr. Andrews' surely correct insistence on falling l.r.a.c.(t.a.) as the most usual expectation facing an expanding firm.[4]

C. It is a more grateful task to correct oneself. First, I should never have implied that all firms with perfectly elastic demand curves use the full cost principle. Farmers do not do so. There is no price and output policy covering all firms, and this is indeed one of the most radical errors of text-book economics. The full cost principle covers mining, manufacturing and distribution only: we shall refer to this as the "full cost sector." It still includes, of course, not a few firms facing perfectly elastic demand, as shown above.

[1] My p. 521. [2] My p. 524.

[3] *Economic Record, loc. cit.*, p. 56. Goodwill, he points out, is compatible with a nearly perfect market.

[4] *Manufacturing Business*, pp. 174, 176.

Secondly, the "normal cost" theory is superior to my article in its insistence that *firms in the full cost sector do not usually select price/output combinations: they select prices and their output is demand-determined. Output, then, is not the independent variable, and all concepts such as marginal cost and marginal revenue must be handled with care, because they appear to imply that it is.* A firm in the full cost sector tries to maximise profit if it chooses a price such that the quantity expected to be sold—which for simplicity we assume equal to expected output—raises l.r.m.c.(p.a.) to equality with marginal revenue, *i.e.*, to the increment in revenue expected from setting the price where it is set, and no higher. A painful and clumsy statement, involving two nearly non-operative concepts—l.r.m.c.(p.a.) and the elasticity of demand. Nevertheless, nothing more elegant or direct can be true.

The fact that output is not the independent variable is doubtless the reason why the "normal cost" school is so unconcerned with it. Mr. Andrews rightly emphasises the primacy of price over output, and so does Mr. Edwards. But that does not dispose of the question, it leaves it in mid-air. The former never discusses the determinants of output, and although I have succeeded in extracting some determinants from the latter (in Section A above), they are clearly not the focus of his interest. Furthermore, had they faced the question of output determination squarely they would have had to use the distinction between the fixed and the varied plant: for quite obviously the influence of output on costs will differ according to whether there is partial or total adaptation. The "normal cost" school seems always to blur this distinction, which is *not* the same as short and long run.

P. WILES

New College,
Oxford.

DEVELOPMENT CHARGES AND THE COMPENSATION–BETTERMENT PROBLEM—A REJOINDER

MR. MUNBY'S reply to my paper on development changes makes a number of effective points, so that what I have to say here is less a rebuttal than a commentary upon his contribution. I shall follow the order of his discussion, using the same headings.

DISTRIBUTIONAL CONSIDERATIONS

The point at issue here is whether or not one's judgment about the fairness of fixing compensation in terms of 1947 values must depend on one's expectations concerning the future movement of the price level. Mr. Munby points out that landowners can sell their land and thus escape the possibility of receiving the 1947 value of such development rights as may, in the future, be taken from them. By shifting into some other asset which is a hedge against inflation they can, if they choose, thereby avoid a situation where the amount of their loss depends on what happens to the price level. Thus the White Paper proposals are analogous to the nationalisation of the railways, where owners compensated with Government stock were able to shift from them into equities if they so desired. The loss suffered by landowners may therefore be judged by the effect of the scheme on the current market value of their property.

TOWN PLANNING AND SOCIAL COSTS

Just as we prefer a doctor to understand the working of the body and the nature of the disease before he chooses and administers medical treatment, so, I believe, must good town planning be based on an analysis of divergences between social and private costs. Unfortunately no such Pigovian analysis has been made, and all too often the argument in favour of planning rests only on the wisdom of hindsight, the disregard of opportunity costs and æsthetic intolerance. We are therefore woefully ignorant in this matter. Since, however, the price mechanism ensures that many people get some of what they want, land values must have *some* significance. This is the basis of my *ceteris paribus* remarks on land values which disquiet Mr. Munby.

As to shifting value: I do not know whether town planning in general increases or decreases land values, and did not intend to imply the latter.

A FREE MARKET IN LAND

(*a*) In this section and later on Mr. Munby uses the term development value to mean "the maximum price a developer would pay rather than go without the land." It should be noted that the customary definition is value with the right to develop *minus* existing-use value.

(*b*) Mr. Munby's argument here is couched in terms of possibilities rather than probabilities.

FLOATING VALUE

Mr. Munby argues that what the Uthwatt Committee meant (or ought to have meant) was not that land was bought at excessive prices but that it was offered at excessive prices. If so, my argument that modification of the 1919 compensation rules would have met the problem still stands, since the market-value basis of compensation requires prices paid, not prices asked as evidence of value.

We agree on the possibility of developers paying excessive prices; I have given reasons for supposing this to have been infrequent. The proposed zoning for residential purposes of more land than necessary demonstrates over-optimism (or ignorance) on the part of local authorities, not developers, and would not necessarily have made asking prices higher than would a less extensive residential zoning. On the other hand, developers did not regularly obtain land excessively cheaply: building was not all that profitable.

DEVELOPMENT CHARGES

Mr. Munby's argument may be stated as follows. Consider a development on a property purchased by the developer from a landowner where the value of the property upon development conforms to the expectations of the developer when he bought the property. Then this value may be divided into the following parts:

(*a*) developer's profit;
(*b*) cost of development;
(*c*) developer's surplus;
(*d*) landowner's surplus;
(*e*) value to the landowner of the undeveloped property;

where (*d*) + (*e*) is the price paid for the property by the developer. Mr. Munby says in effect that the development charge would be

slightly less than (*c*) + (*d*) so that it would not prevent development.

A point to be noted here is that the institution of development charges might lower (*e*)—in cases where the landowner himself contemplated chargeable development. Even so, however, (*e*) could well exceed existing-use value in many cases, so that the development charge could be greater than (*c*) + (*d*) and hence check the development. This possibility, I believe, manifested itself not so much in the inability of developers and landowners to agree on a price in negotiations as in the failure of many owners of developable land to put it on the market at all while the scheme was in force. A farmer who does not wish to retire will be very unwilling to sell all or part of his farm at existing-use value, and the landlord of a tenant farmer finds it very difficult and expensive to end the tenancy.

This leaves the cases where the developer and landowner are one and the same, so the problem of willingness to sell at existing-use value does not arise. On p. 307 I listed two permanent reasons why in such cases the development charges were assessed at less than the surplus, but later implied that they were greater and therefore restrictive. The restrictive effect in the case of development by the owner is limited to the other factors I mentioned (summarised by Mr. Munby in his points (1) and (3)), and I should have said so.

In his exposition Mr. Munby makes a "distinction between the profit that the developer expects from the outlay of capital in this particular form of enterprise and the surplus that accrues to him if he can obtain land at less than development value." In view of Mr. Munby's definition of development value, this statement presumably uses "profit" in its opportunity cost sense—*i.e.*, as reflecting the total gain, including surplus, which the developer could get from an alternative equally risky development project. Thus developers' surpluses cannot normally occur; they must be exceptions. It follows that Mr. Munby's distinction is not very helpful.

If, on the other hand, Mr. Munby means by profit simply a normal rate of interest on the capital invested by the developer, the developer will not develop unless he gets some surplus, and a development charge equal to the surplus would remove all his incentive to develop.

RALPH TURVEY

London School of Economics.

REVIEWS

A Review of Economic Doctrines 1870–1929. By T. W. HUTCHISON. (London: Oxford University Press, 1953. Pp. v + 456. 30*s.*)

FOR this erudite study Mr. Hutchison has chosen the sixty years during which modern economics was born and grew to maturity. His boundaries are set by the appearance of the marginal-utility doctrines and by the Great Depression. Between these two terminal dates the literature of economics showed a vast increase; the subject became a respectable, indeed an increasingly popular, academic study; and from being an essentially English science it became international. If a unifying feature is sought in the trend of theoretical development during this period, it can be found only in the marginal principle, or, more generally, in the increasing attention paid to the behaviour of the individual. From being a study of the origin of the wealth of a community, or of the distribution of the product among the broad classes which had concurred in its production, economics became during the period under review the study of the working out of the economic principle, the principle of choice, *per se*.

Unfortunately, this unifying principle, readily discernible though it is, can be clearly depicted only on a broad canvas. It is not sufficiently or uniformly characteristic of all the vast volume and variety of work with which a book specifically devoted to this period alone must of necessity deal fully and exhaustively. Consequently, Mr. Hutchison finds himself obliged to adopt a variety of techniques to enable him to describe work in economics during the period of his choice in sufficient detail without at the same time descending to a mere encyclopædic cataloguing of each and every writer, book or article. The way he chooses to get out of his difficulty is ingenious. The book is divided into three parts. After a brief introduction, describing the state of political economy in England after 1870, the first part deals in the main with individual writers. Mr. Hutchison has picked out seventeen economists of the last century for detailed treatment, giving to nearly each one a separate chapter. There are six British writers, four Americans, two Scandinavians, three Austrians, one Frenchman and one Italian. In addition, this part contains two general chapters on economics in Germany and Austria, dealing with the

historical school and with developments in both the literary and mathematical forms of marginalism.

In Part II Mr. Hutchison devotes four chapters to the study of certain topics, grouped under the heading " From ' static ' to ' dynamic ' Analysis." It includes a discussion of the development of welfare economics and the controversy over pricing in a collective economy; the economics of the firm, the consumer and the market, *i.e.*, the beginnings of the theory of imperfect competition; profit, uncertainty, expectations, interest and money, bringing the reader to the threshold of the " macro-economic " analysis of the thirties.

The final part contains two chapters on the theory of crisis and cycles, one before 1900, the other after; and a third chapter—somewhat loosely tacked on—which traces the economists' views of the problem of unemployment in Britain from 1885 to 1929. A conclusion rounds off the story by touching upon the contribution of statistics to further advances in economic science.

It will be seen from this brief account of the plan of his work that Mr. Hutchison has tried to cover a great deal of ground, and to cover it thoroughly. It can be said at once that there is no other work of similar size in which the professional student can find so much in so convenient a form. Indeed, nothing short of the *Encyclopædia of the Social Sciences* or the *Handwörterbuch* contains a comparable wealth of material, and even then not always in such detail. The first part, considerably more than half the book, is, as a whole, the most successful. Mr. Hutchison deals here with writers who, he claims, constructed unified, comprehensive systems of economic principles. This method is useful in filling gaps which tend to occur in more comprehensive (and more sketchy) histories of doctrine. There is, for example, a useful chapter on Edgeworth, another on Sidgwick and one on J. A. Hobson. Simon Newcomb finds a place, as does Veblen, though oddly paired with J. B. Clark. Wicksell is dealt with comprehensively, and so is Cassel. The " giants " are there, of course: Jevons and Marshall, Wieser and Böhm-Bawerk, Walras and Pareto. The net effect, however, is one of a series of essays, loosely strung together by the three general chapters. The main criticism of this part is that it deals in a somewhat indiscriminate fashion with so many authors that the uninitiated reader will inevitably find it difficult to distinguish the major from the minor contributions. An approximately equal number of pages are devoted to Sidgwick, Wicksteed, Edgeworth, Hobson and Wieser, to Newcomb and Irving Fisher (jointly); and somewhat less than

double the number to the joint treatment of Wicksell and Cassel. Menger, Pareto and Böhm-Bawerk get slightly more; Jevons and Walras about half as much again; and Marshall nearly three times as much. Apart from the space rightly reserved to Marshall, this high degree of uniformity—at least quantitatively—in the treatment of such diverse authors is not best designed to give the reader a sense of proportion.

There is, however, considerable difference in the understanding and sympathy which Mr. Hutchison metes out to his subjects. Mr. Hutchison, clearly, has his likes and dislikes. Jevons is among the former, Marshall among the latter. On the whole, Mr. Hutchison seems more at home with the Continental than with the English formulation of marginalism; and the chapters on Menger and Walras, for example, are, probably for that reason, both more acute and more readable than most. The chapter on Marshall, though more thorough, has a somewhat carping flavour. It is curious that Mr. Hutchison, who shows great insight into the deeper currents of thought which have led in the last two decades or so to the generalisation of the theory of the market and to a return to the " macro-economic " analysis of the classics, should fail to give due credit to Marshall, in whose system so many of the germs of these later developments can be found.

There are some useful details in these chapters. Irving Fisher is rightly described as one of the pioneers of the national-income approach. Veblen is treated with rare understanding, in particular in regard to the wider framework of cultural criticism in which his economic ideas are set. Schumpeter, with whose early work Mr. Hutchison deals systematically, but who is also referred to incidentally on numerous occasions, gets the credit he so richly deserves. There is here possibly a hint of a further study; and Mr. Hutchison's success in dealing with Schumpeter makes one eager to see a more extensive treatment by him of that author.

The final two parts present more connected stories, and are therefore, at first sight, more rewarding subjects for the reader. Unfortunately, Mr. Hutchison has tried to cram so much detail into a relatively small space (and has used extensive quotation so frequently) that the path is not at all smooth. This is particularly so in the second part. It is tempting, as Mr. Hutchison has done, to weave into a connected pattern the many diverse strands: welfare economics, the planning controversy, oligopoly and imperfect competition, interest, money and the modern theory of aggregates. But to do this successfully requires not only the knowledge which Mr. Hutchison has in such abundance, but,

above all, a much more decided, not to say dogmatic, point of view on the nexus between these topics than Mr. Hutchison possesses—or at least allows to appear. As a result, this part falls between two stools—it is neither the brilliant short essay full of audacious speculation which it might have been, nor is it long enough to be an adequate account of all the major work in these fields.

The third part is more successful; the subject is more compact, and Mr. Hutchison is more selective. Even here, however, his achievement is somewhat marred by too much and too varied subdivision—by author and topic—which leaves a slight impression of a patchwork quilt. The final chapter, on doctrines of unemployment in Great Britain in the years 1885–1929, is probably the only attempt to date to deal systematically and from the point of view of *Dogmengeschichte* with a particularly fascinating topic. But Mr. Hutchison does little more than whet our appetite. His chapter is a useful outline, but no more, of what such a study might be: it would be particularly satisfactory if he were to provide that further work himself.

This book is unlikely, and probably not intended, to help the general reader to a better understanding of the development of modern economics, largely because of the almost insuperable difficulties of selection and arrangement. In part, however, Mr. Hutchison has handicapped the reader by a somewhat involved style in which qualifying clauses abound. It is, nevertheless, a very useful book for the professional economist, more particularly one already interested and versed in the history of economic theory. More advanced students might also benefit; but they would need to guard against occasional idiosyncracies about individual economists, particularly as these are rarely explicit.

E. ROLL

London.

Problems of Economic Union. By J. E. MEADE. (London Allen & Unwin, 1953. Pp. 102. 9*s.* 6*d.*)

THE economic union which Professor Meade discusses with his usual lucidity in the three lectures reprinted in this volume is a union between countries trying to increase their economic efficiency, and so their standard of living, by forming a single integrated market. What he wishes to establish is the minimum surrender of economic powers to the union authority that must

then take place and the maximum range of functions that can be retained by national governments. This theme is discussed largely at the level of first principle, without much appeal to the history of experiments in federalism or to the difficulties recently encountered in efforts to bring about closer economic integration in Western Europe. The celebrated trio, Stikker, Pella and Petsch, do not appear on the programme, and the mæstro, Schuman, is allowed no more than a couple of bows. Instead, Professor Meade concentrates on demonstrating that the formation of a single, integrated market must impose severe limitations on the domestic freedom of action of individual governments in commercial, monetary and budgetary policies; and that the extension of the common market to labour and capital would oblige national governments to keep in line with one another in their social and economic policies for the redistribution of income or in their choice of weapons for the maintenance of internal financial stability.

Now while it is certainly salutary to discuss economic union *in vacuo*, if only to see how one thing leads to another, the ordinary man is bound to ask himself whether the motives to the union are likely in practice to be exclusively economic, whether some allowance must not be made for the circumstances surrounding the union (there is no mention of the dollar problem), and whether wide differences in economic potential may not also exercise an important influence on the principles to be adopted. A union in which the United States accounts for over half the total output is unlikely to result in the same distribution of authority between member-states and a supra-national body as one in which economic power is more evenly distributed: a point of some importance in any proposals for a common budget, whether for defence or economic development, since the United States would have to contribute more than half the total without enjoying a majority vote.

Professor Meade is far from thinking of economic union in terms of common budgets. Even in his Appendix on the economic problems of Atlantic Union rearmament, he gets no further than "jointly agreed programmes" and "marginal adjustments . . . by common agreement." This may be what he calls earlier "institutionalised co-operation"; but it is not union in the sense in which the Schuman Plan involves union. Like the Schuman Plan, Professor Meade means by union the creation of a single free-trade market. But it would be possible to think of other forms of union, involving the creation of a com-

mon preferential area, monetary system, or fund for joint projects, that would be easier to bring into existence and require a less dramatic surrender of national powers. Surely all that one can talk about, short of complete federation or complete *laissez-faire*, is *closer* economic union? And surely also one must decide at the outset what part is to be played by market forces and what part by government policy in the process of integration? It is hardly surprising that an exposition that begins by laying all the emphasis on free trade should end by envisaging circumstances in which "the union authority might positively require the socialisation or at least the social control of certain industries." A group of states favouring government regulation and control could hardly agree to forswear all regulation and control of their foreign trade.

When he comes to discuss the balance of payments, Professor Meade argues that, in the absence of direct controls, it would be necessary to have variable exchange rates. He points out that there would be greater sensitivity to exchange-rate variations under conditions of free trade, but does not remind us that the union would not necessarily embrace a high proportion of each country's total trade. This part of the discussion, which comes down in favour of freely floating exchange rates, backed by exchange equalisation accounts, is conducted more in terms of the I.M.F. than of the closer grouping of countries within the E.P.U.

More than half the chapter on a common market in labour and capital is taken up with a demonstration that free trade in goods is not enough to equalise incomes in countries with a different factor endowment. This is argued with a good deal of ingenuity, however rough on an audience trying to take it in for the first time. But is it necessary to treat the Letner-Samuelson proposition with such respect? Would it not have been enough to point to the difference in earnings between one American state and another and free a few pages for the vast subject that follows? The book is already so tantalisingly brief, and develops a theme so far-reaching yet neglected, that one grudges even a most accomplished piece of economic reasoning when it holds up the main line of argument.

A. K. CAIRNCROSS

Glasgow.

Trade and Payments in Western Europe. A study in economic cooperation 1947–51. By W. DIEBOLD. (New York : Harper Brothers for the Council on Foreign Relations, 1952. Pp. vi + 488. 40*s*.)

MR. DIEBOLD has written an admirable history of the negotiations which led up to the formation of E.P.U. He succeeds in threading his way through the series of payments agreements that preceded E.P.U. without wearying the reader with detailed exegesis of the various texts. The extent to which he has been able to make the negotiations, which spread over the years 1947–50, come alive is a tribute to the extent to which the various Governments concerned felt it advantageous to them to disclose to the Press what they were seeking to attain while the negotiations were still in progress and to the general interest in the subject shown at the time which justified the Press in printing such voluminous despatches on the subject.

It is, no doubt, natural that Mr. Diebold should have traced a design which makes the earlier payments agreements appear almost inevitable predecessors of E.P.U. Moreover, the concentration on narrative rather than analysis prevents him from entering into detailed analysis of why the negotiators should have allowed themselves to be led down what, at this distance, appear to be blind alleys. It is, for example, difficult at this distance to understand how it was that the negotiations in 1949 for the second payments agreement should have generated so much heat, and Mr. Diebold does not really help us. The extent to which those negotiations were overshadowed by the impending devaluations and by the underlying economic pressures which led to those devaluations is hardly developed at all.

There was and is in all the discussions of arrangements for "liberalisation" of trade within Europe, and the financial arrangements to make such liberalisation possible, an unresolved dilemma. Europe is not, and cannot hope to be, self-sufficient in trade, even if we include with Europe the areas of the world where trade can be financed with European currencies. Would attempts to free intra-European trade make more difficult the flow of goods and services between Europe and the rest of the world, particularly the dollar world? Would the easier European markets attract exporters who might in the long run be better employed in developing their markets outside Europe? Mr. Diebold records these controversies in the costumes which they wore four or more years ago. He does not push his analysis of the various

positions far enough to disclose any judgment of his own. Perhaps, where so many are prepared to pronounce, it is more helpful to have this objective narrative of how one part of the argument actually proceeded.

Mr. Diebold resurrects some of the fears that were current within Europe four years ago that the greater freedom of trade would damage the social fabric :

> " The division of labor is necessary, and so is the growth of foreign trade. But, as we are told in the Bible, there is a time for everything, and so likewise all things serve a good purpose only if kept within due limits. . . . Even under the best of conditions, the introduction of a regime of free, or almost free, international trade would increase the instability of our economic system to a degree that would soon undermine its very foundations,"

said a journal published by the Association of Italian Joint Stock Companies. It is not fair to hold against the authors of this article the fact that no such catastrophe has overtaken them, even though in practice Italian liberalisation has been very substantial; the outbreak of the Korean War changed many things. Indeed, with a little bad luck E.P.U. itself might never have come into existence; the negotiations for its formation were hardly completed when that war broke out. Had the Governments then realised the effects which that conflict would have on their economies, it is at least doubtful whether they would have had the courage to go ahead.

Mr. Diebold's narrative runs for a year beyond the formation of E.P.U. and covers therefore the major part of the first E.P.U. crisis—Germany. Again, as a narrative it is admirably done, with some account of the institutional and organisational experiments practised by O.E.E.C. during the handling of this affair, particularly in connection with the organisation of advice to the German Government on the granting of import licences.

FRANK FIGGURES

London.

Britain's Economic Problem. By C. A. R. CROSLAND. (London : Jonathan Cape, 1953. Pp. 224. 12*s.* 6*d.*)

IN this essay Mr. Crosland argues strongly for a change in Britain's external economic policy. The essay is marked by a moderation of both temper and judgment which make it attractive, while the rejection of many contemporary criticisms of

government policy is highly provocative. Mr. Crosland begins with a snapshot of the problem in 1945, and goes on to show how matters moved over the next seven years. He shows that the response of exports exceeded expectations, and yet an acute problem remained in 1952. Pointing to the sharp increase in exports on the one hand and the steady control of imports on the other, he dismisses inflation as an important cause of continued imbalance. For this latter he regards the deterioration of the terms of trade as mainly responsible, for that in itself more than doubled the serious gap of 1945. Additional, though subsidiary, responsibility is shared between the American recession of 1949 and the dollar drain of the sterling area. In any assessment these factors must be given high place. By themselves, however, they provide a partial picture. It is a pity both here and later that Mr. Crosland so largely divorces the external from the internal side, and so largely neglects the internal. The division between domestic and international is at best artificial; each has implications for the other. To complete his picture Mr. Crosland, who dismisses inflation and ignores social policy, should at least have taken into account the considerable drain on resources due to government expenditure abroad on relief, occupation, military and administrative matters which exceeded £1,500 million over the period 1946–51. The cold war has much to answer for once it is realised that total defence expenditure is almost double net capital investment. The record is good, but all the complications did not come from abroad.

Mr. Crosland concludes from his analysis that the crises of 1947, 1949 and 1951 were symptomatic of a much bigger movement, which cannot be met by tinkering with disinflation, devaluation or high interest rates. Nor will salvation be found in " some kind of convertibility." For the external problem has its origin in " a major revolution, of the kind that occurs perhaps once or twice in a century, in world economic relationships. Britain has finally lost her industrial leadership to the United States, and that country now bestrides the world in so colossal a fashion that the dollar and non-dollar worlds can reach no proper balance " (p. 202). With a sufficiently radical long-term policy Mr. Crosland thinks that the structural adaptation might be made, not otherwise.

The " major revolution " to which he refers is composed of three separable though related parts. First, there is the terms of trade change due to a world-wide shortage of food and raw materials. Mr. Crosland does not join the extremists here. Even so, he puts the probable export target for the 1960s at 31%

greater than the 1951 volume (or 240% of pre-war) if Britain is to maintain the 1951 level of imports and earn a surplus of £300 million. Such an expansion is thought by Mr. Crosland to be possible, providing there is sufficient investment in those products for which world demand is rising, for which we have a comparative advantage and for which the import content is low, *i.e.*, in coal, steel, chemicals, metal and engineering goods. The increases involved in each of these would be very substantial: for coal production, demand would be nearer 300 million tons than the 240 million tons now envisaged; for steel, output would have to be nearer 25 million tons than the 20 million tons planned for the end of the 1950s; for engineering goods, output would have to expand by something like 40% of the 1951 level. No one conversant with the magnitude of change registered either in the inter-war period or since 1945 in the industrial structure of the United Kingdom will be prepared to dismiss such expansion as impractical. Nor can it be said that Mr. Crosland's projections are wholly unreasonable. Nevertheless, it is a very different matter when adjustments are being made to an existing situation than when they are being made in anticipation of a given situation. Mr. Crosland recognises that those who have to cover their costs—and this includes nationalised industries—will not plan for a capacity which might well turn out to be excessive. But he adopts something akin to the attitude of the military commander who cannot be bothered with the niceties of alternative cost, for he must be sure of sufficient strength of the right sort at the right time, or else the battle will be lost. "The penalty of over-expansion is merely surplus capacity, the penalty of under-expansion is unemployment and impoverishment" (p. 116). Mr. Crosland nowhere recognises the complex issues involved in the field of industrial organisation of any such concerted policy as he proposes. This again is an internal matter, but it does bring up the detailed relationship between Government and industry in the making of innumerable decisions where scientific exactitude would be rarely possible and men of goodwill and independent minds would judge differently. And he tends to think of surplus capacity as though it might be put "in mothballs," like the American reserve fleet without suffering obsolescence, and this in those industries where technical change is likely to be most marked. A study of problems in, say, the cotton industry would dispel any illusions of the ease of formulating in detail and applying a concerted policy. How would Mr. Crosland cope?

The remaining two parts of the "major revolution" are the

dollar shortage and the instability of the American economy. Here again Mr. Crosland makes a very fair sketch of the position, realising that the America of to-day is a vastly different place from the America of Hawley-Smoot and the 1933 devaluation. He feels that the American tariff no longer matters much, and in the absence of really large-scale foreign investment the dollar shortage will persist at least until the exhaustion of American resources increases her dependence on imports. His solution is, therefore, a continuance of discriminatory restrictions on dollar purchases while productive capacity in the non-dollar world is increased. By agreement if possible, by compulsion if necessary, the sterling area must be brought into dollar balance. Mr. Crosland thus raises major issues of policy. These cannot be debated here, though two comments may be permitted. In the first place, Mr. Crosland's conclusions would be more appropriate if the United States was already "doing her worst" in both trade policy and cyclical instability. He ignores the possibility of his policy leading to a deterioration in the international setting. In the second place, apart from this short-term risk, a high level of world trade is needed in order to sell the exports he thinks necessary, as it is almost certain that Britain could not raise her exports mainly by out-selling Germany and Japan. If, therefore, by the 1960s American imports were increasing and the volume of world trade was high, all his problems would be solved, providing Britain's economy proved to be as flexible as Mr. Crosland's scheme requires and adequate currency reserves were available. These are the crucial conditions for the solution of Britain's economic problem.

D. J. MORGAN

London School of Economics.

Whither Europe—Union or Partnership? By M. J. BONN. (London: Cohen & West, 1952. Pp. 207. 15*s.*)

THIS book might be recommended to two sets of readers. It might be recommended in the first place to those who do not recognise the difficulties of creating a genuine union in Europe and the limitations of any such union. It is true that these difficulties and limitations are now much more widely recognised than they were a few years ago, but to the remaining adherents the book would make salutary reading. Dr. Bonn neatly disposes of the false analogies of the America of 1776 and the Europe of the *Zollverein*. He shows that the essential prerequisites of a modern Customs union were absent. Above all, he stresses the

view that a drive for union due to internal fears and external pressures does not provide the basis for a genuine union. For that he believes "the passionate yearnings of the peoples of Europe for a common fatherland" only is sufficient, and this is lacking. "It will take a long period of intimate, confidential co-operation in defence, in economic and administrative services, before a profound sentiment of European unity will sweep over the nations."

The book might be recommended in the second place to those wanting a survey of the growth of the Atlantic Alliance which, at one and the same time, contributes to European integration and reduces its importance, strengthening the United Kingdom's determination to stand apart, and thus giving any future European constitution an exclusively Continental twist. Dr. Bonn devotes a chapter to a consideration of the main step so far taken towards mid-European integration, namely the Schuman Plan. Here Dr. Bonn is perhaps not as helpful as he might have been. It is true, as he says, that the plan was conceived in a panic, and it is likely, as he suggests, that in its operation it will fall short of the initial objectives, political and economic. The danger of cartel-mindedness is certainly a real one. Even so, the Nato–Schuman method has several advantages and is not necessarily inconsistent with Dr. Bonn's requirements. Had he treated these possibilities, his book would have given a less negative impression and been more useful to those interested in the next step in European integration.

D. J. MORGAN

London School of Economics.

The Logic of British and American Industry. A realistic analysis of economic structure and government. By P. SARGANT FLORENCE. (London: Routledge and Kegan Paul, 1953. Pp. xiv + 368. 28*s*.)

PROFESSOR SARGANT FLORENCE is one of the pioneers in the field of realistic research into the problems of industry. In this book he brings together the substantial research results of his own work as well as of his disciples. He also draws on the by now extensive empirical material available on the structure of industry, especially in the United States but also in Great Britain. His book, while it does not contain new research results, presents this wealth of material in a new setting and with an attempted analysis. The setting chosen by the author is his early book on

The Logic of Industrial Organization published in 1933 and reviewed by Sir Douglas Copland in the June 1934 issue of the ECONOMIC JOURNAL. Although a substantial portion of this book has stood up to the test of time, this new edition can be regarded for all intents and purposes as a new work.

The range of subjects touched upon by the author is remarkable. Chapter 1 ("The Structural Approach") gives the background of basic statistics on such matters as distribution of the working population, size distribution of plants and firms and the pattern of industrial location in the two countries. Chapter 2 ("Logic and Fact of Industrial Structure") discusses the interrelationships between size, efficiency and location, following largely the author's 1948 book on *Investment, Location and Size of Plant*. Chapter 3 ("The Relations of Industry and Consumer") deals with such widely varying topics as distributive margins, market research and monopolies. Chapter 4 ("Relations within the Modern Firm, Management and Top Government") gives a good discussion of management organisation and contains some apt comments on management as a limiting factor to the size of enterprise. Chapter 5 ("Government of Free Enterprise Capitalism"), to my mind the best of the book, discusses with a wealth of detail who governs the modern joint-stock company. Chapters 6 and 7 are more tentative, and not backed by previous research results of the author. Chapter 6 on "Nationalization, Co-operation and State Control" discusses the relative importance of nationalised industries and co-operatives, the reasons for their existence and their form of government. Chapter 7 is on "The Stimulus to Labour, Investment and Enterprise." It starts off with a fragmentary discussion of incentives and then discusses the types of leaders in large-scale enterprise, as well as their education and selection.

Briefly, the main theme underlying the whole discussion is that the structure of industry, given the technical and distributive conditions, is to be regarded as logical if it results in maximum efficiency, measuring efficiency in turn in terms of minimum costs, maximum profits and maximum utility and satisfaction. The hypothesis of the logical efficiency of large-scale production in large plants, firms and localisation is then formulated by the author on technical grounds. However, the actual facts of industry often appear, according to the author, to negate this hypothesis, logical as it may be on technical grounds, owing to the operation of economic, psychological and sociological factors. The structure of industries as shaped by all these factors does in

turn determine the form of government in the different types of industries.

The above theme, familiar to readers of his 1933 work, emerges, however, largely from a short note of the author on his research methods and somewhat obscurely from Section 6 of Chapter 2 rather than from the general trend of discussion in the book. Indeed, the key chapter (Chapter 2) is unhappily a weak one, and in many ways misleading. The reader gets the impression from the substance of the book, that the author firmly believes in the inherent logic of the efficiency of large-scale production and that he is satisfied that the evidence which he adduces proves his point. But it seems scarcely appropriate to speak of the logic of large-scale production as the rule when in so many cases the logic of small-scale production is equally arguable. Is it not really the case that the balance of advantages will differ from industry to industry?

There is a second highly interesting general theme underlying the discussion of detailed problems: the similarities and dissimilarities of various features of British and American industry. Some of the similarities, for example on size distribution of plant, or pattern of location, are truly remarkable. Some other similarities noted by the author, for example in distributive margins or trade-union relations, do not appear as yet well proven on the basis of evidence produced. In one case, that of integration, the author appears to be wrong in suggesting similarity. The whole problem of integration and its effect on size and efficiency is inadequately treated in the book. Integration is treated as the opposite of both specialisation and of standardisation, a somewhat unhelpful approach. There are, however, many differences in integration between British and American industry, irrespective of whether we take the traditional or this peculiar interpretation of integration. Indeed, an interesting problem, not discussed in the book, would be to analyse how similarities in size structure and the like can be reconciled with known dissimilarities in vertical integration, in the British and American textile industries, for example, and in many others.

These points of criticism indicate possible small blemishes in an interesting and stimulating book which could be read with benefit by both the undergraduate and the professional economist. It is just as well, however, to warn the reader that this is a difficult, and in many ways an irritating, book to read. This is due to certain tricks of style, to constant references to what he said on the subject in 1930s; to his almost Teutonic pleasure in inventing

new classifications and new names for categories; to the somewhat confused organisation of the material—three pieces of empirical evidence relating to the same subject in Chapter 2 are given on pp. 53, 62 and 67, respectively; the effect of localisation on size and efficiency is discussed on p. 70 and then again on p. 83; summaries at the end of rather difficult and diffuse chapters, such as para. 6 in Chapter 2 or para. 7 in Chapter 6, often introduce the reader to new ideas and feed him with new statistics. There is far too much material crammed into the book to make it easily digestible.

One further point will irritate the serious reader: Professor Florence's constant disparaging references to more theoretical economists. While from time to time he scores a point, on the whole he does not emerge victorious. I cannot find anything startling or new in his so-called structural approach which should distinguish him from his erring fellow economists. Indeed, so far as I am aware, it is by now a widespread custom to start applied lecture courses on the structure of industry by presenting descriptive material, which is all that the "structural approach" seems to imply. Other examples of lack of regard for theory could also be mentioned. The author's difficulty in defining an industry without attempting to relate it to markets (so beautifully done in Mrs. Robinson's recent article in the September 1953 issue of the ECONOMIC JOURNAL) is particularly striking. Incidentally, his contention that the "organizations which add up to an industry are plants not firms" is a debatable one, and appears to be true only in the purely statistical—Census—sense. In this whole discussion in Chapter 1 Professor Florence seems to be tilting at windmills.

It is to be hoped that in a later edition of the book some of the statistics will be brought up to date (unhappily for the author, the bulk of the results of the three post-war Censuses on Population, Production and Distribution have become available only a few months after the publication of the book); some minor errors or omissions of facts and statistics might also be corrected. It is, for example, difficult to reconcile with the facts the contention that "manufactures have in both countries grown only slightly in terms of manpower" over the last few generations (p. 6). In various places (for example, pp. 13, 68, 69) there are references to horsepower figures from the 1935 Census instead of the 1930 Census. On pp. 18–19, where the classification of industries is discussed, some reference to the Standard Industrial Classification, in force after all since 1948, would be appropriate. The author's

profound knowledge of the literature, as illustrated by the plethora of footnotes, would have justified a selected bibliography at the end of the book.

L. ROSTAS

Cambridge.

Demand Analysis. A study in econometrics. By H. WOLD in association with L. JURÉEN. (New York: John Wiley (London: Chapman & Hall), 1953. Pp. ix + 358. 56*s*.)

This book is a happy example of econometrics as it should be: the union of common sense and powerful mathematical techniques in the analysis of important aspects of the real economic world. Its quality is sufficiently guaranteed by the distinction of its authors and of the Swedish school of statisticians to which they belong. They show, as might be expected, a comprehensive first-hand knowledge of work on their subject done all over the world; they express themselves in English which, while occasionally turgid, is better than that of most English-speaking writers on econometrics. The subject invites a comparison with the massive work of Richard Stone, *The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom, 1920–1938*. The two books cover a very similar field, but Wold and Juréen use only a limited amount of statistical data as illustrations of their methods, whereas Stone's book is mainly concerned with the presentation and systematic analysis of statistics of consumers' expenditure. On the other hand, Wold and Juréen give very much more space to the mathematical development of their subject and the discussion of rival statistical techniques. The two works should therefore be in joint demand.

The central section of the book (for which Professor Wold is responsible) is highly mathematical, but the quality of the exposition is such that the argument can be grasped by a reader with a sound mathematical background, even if he has not lately hacked his way through the jungles of *Econometrica*. There are occasional statements of unproved results, but in general the argument proceeds systematically on its way from first principles, and is assisted by extensive cross-referencing. Part II is a development of Pareto's theory of preference fields; Part III is concerned with the theory of stationary processes; while Part IV deals with least-squares regression analysis. Sets of exercises are provided on each of these Parts.

Feeling, no doubt, that the book would have too narrow a public if it appealed solely to mathematicians, the central section

is preceded by Part I, which is described as a "broad summary of the material, written with restricted use of technical terms, and stressing the general lines of development in demand analysis and related fields." This is, on the whole, less successful. It contains quite enough technical terms to make it unintelligible to a reader who has not previously studied the literature of the subject; and it is on the whole heavier going than the mathematical parts which follow it. Nevertheless, it repays careful reading, because of its discussion of some of the controversial problems of demand analysis. Professor Wold stresses the importance of the external, non-statistical knowledge of the structure of cause and effect, which determines the type of regression analysis to be undertaken; and he defends the traditional simpler types of regression analysis against some of their rivals. (The sensitiveness of estimates of elasticity to differences in the type of regression is strikingly illustrated on p. 218.)

Part V, based on the empirical work of Mr. Juréen, has three chapters. The first is an analysis of Swedish family budget data for 1913, 1923 and 1933, in order to derive income elasticities of demand. This contains some interesting and very consistent results based upon Törnqvist's special form of the demand function. The second chapter is concerned with the demand for food, analysed with the help of market statistics from 1921 to 1939. In some cases, "conditional" regressions are employed—either fixing one of the elasticities on the basis (*e.g.*) of the budget data, or fixing the ratio of the income to the price elasticity. In contrast to Stone, the authors do not eliminate trends, though they correct for the changes in population. The explanatory variables are decided by common sense and judgment, and one misses the great apparatus of bunch maps which other writers use to assist their judgment of when the regression analysis has gone far enough.

The final chapter employs the data of the preceding two, firstly, to predict consumption in 1949/50, and secondly to forecast the food demands of the Swedish economy over the next twenty years. The first prediction can be compared with the fact, and one is left in doubt as to whether to be impressed by the closeness of the prediction (involving a bridge over the years of war and rationing) or to be alarmed by the possible errors it reveals. Thus the predicted increase in *per capita* consumption of meat was 1% (over 1930–39); the actual increase was 3%, though the predicted distribution over pork and other meat was sadly astray. On the other hand, the predicted increase for eggs was 6%, and for butter 7%; imperfect statistics give an actual

rise for eggs of 42%, and in butter the rise was 28%. Such errors are enough to deprive the data of much significance for the determination of policy for example, in derationing foodstuffs. Our best instruments of mathematical analysis are still sadly inadequate to the load of practical decision which we would gladly place upon them.

C. F. CARTER

The Queen's University,
Belfast.

International Trade Statistics. Edited by R. G. D. ALLEN and J. EDWARD ELY. (London: Chapman and Hall, 1953. Pp. xii + 448. 54*s.*)

THIS book on the whole admirably fulfils its purpose as a guide to the current flow of international trade statistics. The editors have successfully enlisted the collaboration of specialists, almost all government or international organisation officials, in the fields covered so that the discussion of the range and quality of the available information and of the problems and pitfalls encountered in its use is on a consistently high level.

Part I describes the essential characteristics of the data, their compilation and coverage, commodity and country methods of classification, valuation and the question of exchange conversion. Part II, the most analytical section of the book, deals with the derived uses of international trade statistics. Dr. Gardner, the head of the International Monetary Fund, Balance of Payments Division, discusses the balance-of-payments aspect of merchandise trade statistics from the point of view made familiar in that organisation's *Balance of Payments Manual* and *Balance of Payments Yearbooks*, and in the last section of his chapter calls attention to the compensatory financing form used by the Fund in analysing foreign-exchange problems. The opinion may be ventured that the last word has not yet been said on the value of the dichotomy between autonomous and compensatory international economic transactions. Students will find Professor R. G. D. Allen's lucid chapter on "Index Numbers of Volume and Price" particularly helpful, covering as it does the basic problems of constructing indices of price, quantity and the terms of trade. There is a salutary warning on the limitations of long-term and secular terms of trade, which is all the more necessary in view of the fact that there have been a number of prominent sinners in this respect. Mr. Jones' chapter on "Exports and Imports in the Domestic Setting" is admittedly and inevitably compressed, which presumably explains the omission of any reference to the possibilities of the application of input–output analysis to international trade, a sphere already enriched by Professor Leontief. Perhaps Part II would have gained pedagogically by the inclusion of a separate chapter on some of the more advanced applications of international trade statistics covering not only the input–output approach but also the vexed problem of the measurement of elasticities in international trade. Chapter 12, on "International Comparisons and Standardisation," deals with the progress made in establishing comparability between the returns of different countries and, together with the detailed studies in Part I and III, furnishes a convincing refutation of the more serious allegations in Dr. Morgenstern's brochure on *The Accuracy of Economic Observations*, at any rate as far as the recent statistics of the more developed countries are concerned.

Part III reviews the specific statistics of the two leading trading countries, the United States and the United Kingdom, and of the members of the chief trading groups, with the exception of the Soviet bloc. Apparently the chapter on the United Kingdom was written too early to include a section on the reconciliation of the Board of Trade export and import figures with those of the *Balance of Payments White Papers*. The treatment of oil exports by Middle Eastern countries, while anomalous in terms of current international practice, has a certain internal logic fully conforming with the *ideal* definition of export values advanced on p. 84. It is interesting to note the tendency in colonial and dependent areas to understate the value of exports.

All in all, the editors are to be congratulated on this thoroughly competent and convenient compendium as useful alike to the business-man and general reader as to the student.

S. ADLER

Department of Applied Economics,
Cambridge.

Social Accounts of Local Authorities. By J. E. G. UTTING. National Institute of Economic and Social Research, Occasional Paper No. XVI. (London: Cambridge University Press, 1953. Pp. v + 89. 16*s.*)

THERE can be few people who would deny that the British fiscal system has received less attention from economists during recent years than it deserves. This is doubly true of local government finance, a circumstance which makes Mr. Utting's work a welcome addition to this series of Occasional Papers.

It should be made clear at the outset that Mr. Utting did not intend to write specifically about local government finance. His book can justly be described as an exercise in statistical sampling. Thus, whilst the serious student of British local authority finance cannot ignore Mr. Utting's findings, statisticians will also find them valuable.

Mr. Utting's inquiry had two aims. First, he wished to obtain information about the financial transactions of local authorities from which he could construct a system of social accounts. Second, he wished to provide information about the sampling of sets of accounts which might prove relevant in collecting social accounting information from other sectors of the economy.

The book falls into three main parts. Mr. Utting first explains the nature of the information he sought from local authorities and how it was collected. Second, he discusses the way in which the sample of local authorities was chosen. This task was certainly not lightened by the fact that only some 50% of the authorities approached were willing and able to complete the necessary form. Three surveys were made, for the years 1946–47, 1947–48 and 1948–49, and the author explains how, and why, the "victims" varied.

The third part of the paper sets out the estimated social accounts and explains how they were drawn up. This, naturally, represents the kernel of the report. Besides presenting the estimates, the author considers which measures of size could have been used in this inquiry and shows why, except when considering county councils, retained rate income seemed most appropriate. The discovery of this exception represents the kind of by-product from this inquiry which will interest students of public finance. It was found that county councils appear to fall into two fairly sharply-divided groups, in one of which the ratio of grants to rate income is markedly higher than in the other. This distinction appears to stem from differences in the "block grant," with the dividing line where block grants are roughly 2*s.* 6*d.* in the pound.

The author also considers the reliability of his estimates by comparing them with figures obtained from complete information and published in *Local Government Financial Statistics*. It is clear that, in general, the estimates proved to be extremely accurate, except for those in the capital accounts. Mr. Utting has displayed a willingness for self-criticism by no means always found among social scientists, in attempting to discover reasons for these discrepancies. He finds the answer partly in a misunderstanding by local authorities of the way in which they were intended to set out some of the information relating to housing, and partly in problems arising from war damage.

Mr. Utting's paper is a competent document, giving a workmanlike description of his methods of inquiry and his results. He has done a useful job well. One minor criticism is that in the introductory chapter Mr. Utting apologises rather too profusely for the shortcomings of his inquiry. Most readers will prefer to decide for themselves what these failings are, and, in particular, will not wish to be given notice of them in advance. In any case, are these apologies really necessary? Anyone who has carried out empirical research of this kind will surely feel that to persuade 50% of a selection of hard-worked local authorities to fill in a lengthy questionnaire is in itself no mean feat.

The ordinary economist cannot help feeling that social accounting has become something of a "fetish" during recent years. Mr. Utting's real achievement is surely to have shown how figures for a whole sector of the economy can be obtained on a sampling basis, rather than to have put his results into the particular form required of a set of social accounts. One doubt therefore remains. Is it possible that in concentrating his attention on producing the social accounts, Mr. Utting has ignored other useful information about local authority economics which his raw data might have yielded? This is not an accusation, only a question. Mr. Utting alone can know the answer.

D. C. HAGUE

University College,
London.

Business Finance. By F. W. PAISH. (London: Pitman, 1953. Pp. viii + 144. 12*s.* 6*d.*)

PROFESSOR PAISH defines finance as "the provision of money when wanted," and in this book he discusses the principles and practice by which businesses provide themselves with the money needed for their activities. The book is based on lectures delivered to economics students of the University of London, and its approach to the subjects dealt with is thus rather from the economic than the legal or accountancy standpoints. It is written against what the author calls the "sombre background" of the present state of Britain, in which there is not enough personal saving, not enough industrial capital and far too much taxation.

As always, Professor Paish expresses himself with admirable lucidity and directness. He writes with an intimate practical,

as well as theoretical, knowledge of his subject, and his book should be invaluable not only to students of economics but also to budding bankers and stockbrokers and accountants, and indeed to any young man or woman intending to make a career in the City or in business administration. I wish it had been available years ago when I first went into the City ! It would have greatly eased a laborious process of generalisation from experience.

The book is divided into two parts, the first being broadly concerned with principles and the second with practical issues. In the first part Professor Paish considers such questions as the " risks " of finance, finance by borrowing and the issue of shares, and the various types of limited-liability company. The second part deals with the practical financial problems involved in running a business concern, such as the proper provision for the depreciation of assets, the effect of changes in prices levels on profits, the taxation of profits and the raising of capital through the new-issue market.

The kernel of the book is Chapter V, the first of the second part, which is entitled Internal Finance (*i.e.*, the internal finance of a company as distinct from its " external finance " by raising capital in the market) and analyses the problems of valuation, depreciation and taxation with which an ordinary small business has to cope in Britain to-day. In this chapter the author deals particularly with the effects of a changing price level on profits. He shows very clearly how under the conventional systems of calculating profits the capital of a business can (even without the helping hand of a fiscal system based on the fiction of stable money) be eaten away in a period when prices of materials and replacement costs of fixed assets are rising—eaten away quite possibly without those in charge being aware of the fact.

I must say, however, that here Professor Paish for once, and most uncharacteristically, seems to me to pull a punch. He says that " a satisfactory definition of profits should offset changes in the purchasing power of money in general, but not changes in the replacement cost of particular assets." As he is talking economics and not politics, the only satisfactory definition of profits would, in my view, be one which allowed for the ultimate replacement at current prices of the actual assets employed by the business. I agree that in practice such a calculation would not be feasible for each individual business and that it would be necessary to use a price index. But the type of index suggested by Professor Paish, namely, a cost-of-living index, would seem to be very ill-adapted to the purpose.

He suggests that it can be assumed that if the replacement cost of a company's assets has risen more than the cost of living, its profits will also have risen more than the cost of living, so that the shareholders will have experienced some increase in real income. Therefore, he says, the excess of the rise of replacement costs over the rise in the cost of living can reasonably be regarded as a genuine profit ploughed back, and so justifiably subject to taxation. This savours of special pleading of the kind which the politicians are so well able to think up for themselves that it is better not put in their mouths by economists.

O. R. HOBSON

London.

Profit Measurement and Price Changes. By K. LACEY. (London : Pitman, 1953. Pp. v + 129. 20*s.*)

FROM time to time in the course of history the current economic " crisis " takes the form of a sharp variation in the general level of prices. At such times special gains or losses accrue to individuals, where, for institutional reasons, there is delay in renegotiating contracts in terms more appropriate to the new price levels. This situation gives rise to three kinds of economic writing : special pleading on behalf of groups who believe themselves especially to have suffered, the fruitless pursuit of the notion of a unit of account which is at the same time a measure of " true " value and more objective analysis of the probable effects upon economic behaviour of the breakdown in the traditional standard of value, money.

Mr. Lacey's book contains elements of all three, but with a single underlying, unifying theme. The whole of the argument turns, in fact, upon the author's belief that the *method* by which accounts are traditionally prepared will lead business-men to *behave* in a manner different from that which they would consider prudent if they were truly aware of the underlying economic realities. In particular, two main shortcomings of conventional accounting procedure are considered.

First, the point is made that, in times of rising prices (because of stock appreciation) a proportion of declared profits will not be in liquid form, and hence will not be available for dividends unless it is convenient to borrow or to reduce stock or cash in hand. So much is, of course, familiar, but Mr. Lacey goes further and argues that, since it is not usual to make any special provision in final accounts for the element of stock appre-

ciation, management will be misled into supposing their position to be more liquid than it is in fact. Accordingly, dividends will be higher in a boom and, by the reverse argument, lower in a slump, than they might otherwise be.

It ought perhaps to be conceded that a greater degree of plausibility seems to attach itself to the argument above if we substitute (as Mr. Lacey would wish) the expressions "real profits" and "paper profits" for "liquid profits" and "illiquid profits" wherever they occur. It may well be that names are important after all. Unfortunately suitable statistics against which the theory might be tested are not readily available. The figures quoted by Mr. Lacey are thin and scarcely convincing. Moreover, Recommendation XII of the Council of the Institute of Chartered Accountants, reprinted as an Appendix to the book, would seem to provide evidence that accountants, at least, are unlikely to be deceived.

Nevertheless, due weight must be given to Mr. Lacey's personal convictions, particularly in view of his close connection with the business world. In any event, nothing but good could come from the adoption of his proposal to create stock and asset replacement reserves rationally calculated. Any additional information likely to help the market to put a proper valuation on shares must be unreservedly welcomed.

The second main point concerns cost-accounting conventions. The first-in-first-out method of charging out materials will lead, it is alleged, to an understatement of "true" cost in times of inflation, and hence to prices being fixed too low. Such a view rests upon two assumptions. First, it supposes that prices are fixed according to cost and not on the principle of "what the market will bear." Secondly, it implies that the *estimates*, used as a guide to the price fixer, are prepared on the basis of book cost of materials rather than replacement cost, simply because the *cost accounts* themselves are so written up. The present reviewer's experience suggests that any accountant who made this last mistake would not long survive as such.

The element of special pleading in the book centres around an appeal for revision of the basis of schedule D taxation on the grounds of injustice. At times Mr. Lacey appears to be holding that the present basis is "unjust," not because businesses are overtaxed, but because there is something ethically wrong with taxing profits that are not "real." The concept of "real" profit is, in fact, pursued by Mr. Lacey with an enthusiasm matched only by that of Lowndes and Locke in their debate over

the true meaning of the pound sterling. At other times, overtaxation in the ordinary sense is implied, in spite of an acknowledgment that, during an inflation, those holding fixed-interest-bearing bonds suffer more than holders of tangible assets. To be fair, however, it must be admitted that, with a happy disregard of the secular trend, Mr. Lacey does envisage justice being done when in the fullness of time prices begin to fall. Moreover, at least one passage implies that he would like to see the compensation principle applied to all who have suffered, a suggestion which comes perilously near to repeating a recently made proposal that all prices should be tied to a cost-of-living index.

On the whole, however, there is a good deal that is valuable in this book. It is important that the issues raised should be properly understood and Mr. Lacey, although inclined to be a little too repetitive, at all times makes his points with great clarity. It should be said also that, despite criticism above of the author's occasional lack of objectivity and use of emotive words, the general standard of the book in this respect is higher than much of the current writing on this subject.

I. F. PEARCE

Nottingham.

The Local Government Service. By J. H. WARREN. (London: Allen & Unwin, 1952. Pp. xiv + 222. 18*s.*)

The Finance of Local Government. By J. M. DRUMMOND. (London: Allen & Unwin, 1952. Pp. vii + 206. 20*s.*)

THESE two volumes are part of a series (*The New Town and County Hall Series*) which is edited by Mr. Warren and which, while still being intended mainly for the general reader, supplements such very general reviews of the local-government system as that which Mr. Warren has himself already contributed as the first volume of the series. They thus require a somewhat specialist interest from their "general reader," although he need not necessarily be in any sense an expert in local-government affairs.

Mr. Warren's book on the local-government service will, for instance, have a special interest not only for those who are specially concerned with the conditions of service, negotiating machinery, and prospects for local-government officers, but also for those whose concern is rather with the operation of Whitleyism within a particular "industry." It is Whitleyism which has been "the main agency shaping the local-government service of to-day and to-morrow," and which has in fact made a national

service out of an employment which was formerly operated quite independently by a multitude of largely independent employers. A description of how this came about, first through the establishment of the National Association of Local Government Officers by the efforts of the employees themselves, and then by the development of Whitley machinery and principles, forms the central core of Mr. Warren's book, and is in many ways its most interesting topic.

The first part of the volume gives a brief general survey of local-government structure and functions—necessary if the book is to stand on its own, but efficiently summarised so as not to weary those to whom it is already familiar—and this is followed by a description of the various classes of local-government officer and their duties. This serves largely as an introduction to what follows, but seems rather unnecessarily detailed for that purpose and for the truly general reader. It is, however, obviously of very real value to some of the special classes of reader mentioned in the author's preface (local councillors, for instance) and this must be the justification for the detail.

Then comes what I have called the central core, although it occupies a good deal more than the central part of the three into which the author has divided his book. It starts with Chapter III on " Development as a Service " and continues through the next two chapters, on conditions and constitutional status, into Part II, which describes the employers' and employees' organisations and the machinery which has been set up for negotiation. Here again the detail is quite considerable, but it achieves quite a different object. The consideration of the development and operation of the negotiating machinery in this particular " industry " has, for me at least, done much to put the flesh on to the all too dry, bare bones of the *Industrial Relations Handbook*.

Finally, the third part discusses qualifications and training. It has an obvious value for those who are considering a career in the service or who, having got into it by chance—as many young men and women do—are wondering where it all leads to.

Mr. Drummond's book on local finance is likely to appeal to a rather different type of reader. Although the author again disclaims any intention of writing for the practitioner or specialist, and addresses himself to the lay-reader, he nevertheless assumes a fairly wide knowledge of local-government services and functions. His book deals with the broad facts of local-government finance. It does not attempt to answer many interesting questions of detail—the rules relating to local authority liability for income tax, for instance—and it contains only passing reference to matters of conjecture or controversy.

Two of the most important of these latter questions are those of the incidence of local rates and the possibility of finding new sources of local revenue. Mr. Drummond does just touch on the difficulties of determining the true incidence of rates (whether borne by landlord or tenant, by shopkeeper or customer), but, wisely in a book such as this, he does not attempt to reach any conclusions. It is, however, rather a pity that he has not included any bibliography or other references which would help his readers to follow up questions such as this.

Similarly, on the problem of new sources of revenue, there are brief references to suggestions which have been made by others, but the author concludes—probably quite rightly—that little relief for the rates is to be obtained in these ways. The possibility of abolishing the 75% derating of industrial premises is mentioned in the chapter on rating and valuation, but of course the desirability of this—and indeed the desirability of any relief at all from the " burden " of local rates—is too closely bound up with the question of incidence to be dealt with as a separate issue.

This is, in brief, a book for those who want a fairly detailed account of the machinery of local-government finance. It provides the essential basis of fact which is needed for a proper consideration of the soundness and efficiency of local finance; but it does not, in itself, justify the author in his belief that these have been established. This is altogether too general a conclusion to be derived from an account which is deliberately rather narrow in scope. We may undoubtedly conclude that local finance is honestly and scrupulously administered, " with numerous safeguards in the interest of ratepayers "; but soundness and efficiency are more than this.

J. E. G. UTTING

Department of Applied Economics,
University of Cambridge.

The Mint. By SIR JOHN CRAIG. (London : Cambridge University Press, 1953. Pp. vii + 450. 70*s*.)

The Bank of England Note. By A. D. MACKENZIE. (London : Cambridge University Press, 1953. Pp. v + 163. 15*s*.)

The former Deputy Master and Comptroller of the Royal Mint has written an authoritative history of the Mint from its earliest days to the present. This is essentially the story of an

institution—its organisation and its personalities—with an outline of the technical history of coinage. Based largely on the Mint's own records, it will be an unimpeachable reference work for economic historians, supplementing Oman's classic *Coinage of England*.

At more than one point it becomes apparent that eighteenth-century deficiences in the supply of coinage were difficulties of distribution rather than of the process of coinage itself. The Mint's failure in the supply of copper coinage—the failure that provoked the widespread use of private copper tokens—was due at any rate in part to the refusal of the banks to handle copper coins at all, while the Mint itself had no system of distribution. Burke's proposal to transfer the Mint to the Bank of England, a proposal intended to relieve the administrative chaos, would, of course, not directly have helped the distribution of coinage, though a more obliging attitude in the banks might have been more quickly induced.

Such sidelights on problems of economic history are, however, exceptional in this book, the main interest of which is in the organisation of an institution. The publisher's claim on the jacket, that the reader " may watch the development of monetary theory," has no shred of justification, and is a little surprising coming from the Cambridge University Press.

Mr. A. D. Mackenzie has written *The Bank of England Note: a history of its printing*, at the request of the Bank of England. He has based it largely on the Bank's records and those at St. Luke's Printing Works (an integral part of the Bank), but has also exerted himself fruitfully in institutional libraries and museums. Its chief interest to economic historians is the light it throws on the efforts of the Bank to produce an " inimitable note " in the Ricardian period, when these efforts had an important bearing on the choice between a gold circulation and a paper circulation. The upshot of Mr. Mackenzie's researches is on the whole a vindication of the Bank—allegations that it was not really trying to solve the forgeries problem could not have been maintained by those with inside knowledge.

The book is elegantly produced, with a wide selection of illustrations. Mr. Mackenzie has written it attractively without lapsing into the anecdotal, and produced a notably thorough piece of work. The book is as authoritative as a book sponsored by the Bank ought to be.

R. S. SAYERS

London School of Economics.

Wirtschaftstheorie und Wirtschaftspolitik. Festschrift für Alfred Amonn zum 70 Geburtstag. Edited by V. F. WAGNER and F. MARBACH. (Bern: Francke, 1953. Pp. 371. Sw. Fr. 47.)

THE element of unity in a *Festschrift* is generally the work of an honoured teacher whose pupils and associates have sought to build on his theories and to prove its application. Professor Amonn's great interest in methodology is certainly well to the fore in this book, but it does not dominate. In fact, it is almost overshadowed by the discussion on modern macro-economics by younger Swiss economists who do not attempt to delineate a native tradition in this fashionable subject.

Professor Amonn's earlier work was concerned with the attempt to reconcile the conflicting views of the Menger–Schmoller *Methodenstreit*. Indeed, it is interesting to discover in the first essay by Zwiedeneck-Sudenhorst how far some of the adherents of the Vienna School went in their criticism of value theory and in the suggestions for its improvements. This writer does not recall at any length his own earlier work on the factors of inertia in price formation which influenced later Continental writers such as Stackelberg. Despite his own reservations on the static nature of value theory, Hans Mayer is anxious to preserve it from the predacity of Paretian indifference curve analysis. His study might have commanded more attention if it had concerned itself with the careful formulations of more recent years in the work of Hicks, Samuelson and Little, and had treated some of the earlier opponents of the older formulation with something better than contempt.

While in Germany feeling is apt to run high in any discussion of Keynes, evidently in Switzerland this is not so (with a few notable exceptions). One of the better-known Swiss text-books by one of the contributors to this volume, Eugen Böhler, provides a good example of the attempt to wed elementary macro-economic theory with sector analysis. Thus Professor Wagner's strictures on the treatment of the general price level in Keynesian literature are cogently stated, and Dr. Bieri shows his grasp of the post-Keynes discussion. Dr. Bohi's sequence analysis covers the familiar territory of Machlup and Metzler. It suggests that it is time that some practitioner produced a complete set of models to cover all values of the multiplier and acceleration coefficients after the fashion of the Admiralty tide tables. Finally, mention must be made of Professor Haberler's lucid exposition of the present

state of the literature on the business cycle. The final section, which pleads for a reconsideration of the role of relative prices in the cyclical process, deserves a wider audience. It is to be hoped that we shall see an extended version of it sometime soon.

A. T. PEACOCK

London School of Economics.

The World Social Situation. Preliminary Report by the United Nations Department of Social Affairs. (New York: United Nations, 1952. Pp. 180. 12*s.* 6*d.*)

KNOWLEDGE of the facts about social conditions throughout the world is a necessary basis for planning international policies to achieve social progress. For many economically less-developed countries the information available is meagre, and frequent use is made in this report of approximations and fragmentary data. Yet its authors have succeeded in sketching the main lines of a picture which is indeed gloomy but includes some relieving light.

More than one-half of the world's 2,400 million people live in conditions which deny them reasonable freedom from preventable disease, a diet adequate for physical well-being, a dwelling that meets basic human needs, an education necessary for progress, decent standards of working conditions and efficient methods of production. Low standards of production and labour are largely a consequence of ill-health and ignorance, and together they form a vicious circle which is difficult to break.

In recent years death-rates have noticeably declined all over the world, partly as a result of an uninterrupted fall in infant mortality in almost all countries. The war against disease combined with maintenance of high birth-rates in heavily populated countries is resulting in accelerated growth of population, which in the last fifteen years has increased more rapidly than food production. These trends seem likely to continue for several decades at least, and may involve lower standards of nutrition for many millions of people, especially in parts of Southern and South-eastern Asia.

The report deals in turn with health, food and nutrition, housing, education, conditions of work and employment, general levels of income and welfare, and there are chapters on living conditions in Latin America, the Middle East, and South and South-east Asia, where more than one-half of the world's serious poverty exists. The emphasis throughout is on standards of living in the less-developed countries; attention is concentrated

on actual conditions, and only incidental references are made to governmental and other remedial measures, these being reserved for another report.

A few of the most significant facts may be mentioned. The expectation of life at birth is thirty years for two-thirds of the world's population, but in the most-developed areas with one-fifth of that population it is sixty-three years. Control over some diseases, for example, malaria and venereal disease, can be effected rapidly at relatively low cost, but for others large capital expenditure on good water supply, sanitary systems and hospitals will be necessary. There is need for twice the 900,000 doctors of the world, especially for the rural areas of under-developed countries.

Approximately one-half of the world's population has insufficient food for physical fitness, the deficiency in "protective" foods being particularly great. In India the protein intake is one of the lowest in the world. About one-quarter of the world's population is inadequately housed; in most cities of Africa and Asia a typical working-class family lives in one room with no private cooking, bathing or toilet facilities, while in rural areas housing is generally inadequate in size, quality, sanitation and water supply. Literacy ranges from 95% or more in most European countries to 20% or less in India and other Asian countries, and in many parts of Africa. In some countries the need for trained professional, technical and administrative personnel is so great that higher education may have to be given priority over compulsory primary education.

In under-developed countries agriculture is the occupation of a great majority of the people, who suffer from low incomes, inefficient methods, seasonal under-employment and often heavy indebtedness to money-lenders. Many people "live in debt, die in debt, and their children inherit their debt" (p. 174). Industrial work is mainly done by handicraft methods in the home and in small workshops, there being, for example, 10 million handicraft workers in China to 1 million workers in factories. In 1950 the United States was the only country with a *per capita* annual income of more than $1,000, while in India, Pakistan and China, and other countries of Asia and parts of Africa, it was below $100. About half the world's population in Asia produced only 10% of the world's income, while 7% of the world's population in the United States and Canada produced almost 43% of its income. To summarise, low-income countries tend to have high crude death-rates, high infant mortality, high birth-rates, high levels of infectious diseases, serious shortages

of doctors and nurses, low calorie and protein consumption, low literacy rates and a low amount of mechanical power per head.

The report indicates effectively the magnitude of the problems to be faced in the war against disease, ignorance and want.

J. HENRY RICHARDSON

University of Leeds.

The Canadian Grain Trade 1931–1951. By D. A. MACGIBBON. (Toronto: University of Toronto Press (London: Geoffrey Cumberlege), 1952. Pp. ix + 227. 36*s.*)

THIS book is the sequel to Professor MacGibbon's *The Canadian Grain Trade*, published in 1932. It deals with the plight of the wheat-growing areas of Western Canada in the 1930s, the establishment of the Canadian Wheat Board in 1935, the difficulties arising from the Second World War, the Wheat Agreement with Britain signed in 1946 and the International Wheat Agreements of 1933 and 1949; in addition, there are chapters dealing with the wheat pools, the grain exchanges and the co-operative United Grain Growers, Ltd.

The great merit of the book is that it is a demonstration, written, so to speak, "from the inside"—Professor MacGibbon was a member of the Board of Grain Commissioners for Canada from 1929 to 1949—of the consequences of governmental assistance for the internal organisation of a trade, and of the extreme difficulty of maintaining a policy of *limited* intervention. In the case of the Canadian wheat growers this problem first appeared as a result of the 1933 Wheat Agreement, under which Canada undertook to restrict exports; by 1934 it was becoming apparent "that governmental intervention in wheat with a view to protecting the living standards of the wheat producer was leading to government control of wheat production. This was something that the Western producer hated to contemplate" (p. 32). Within a year, however, the problems raised by low prices and enormous stocks led to the introduction of a bill seeking to establish a Wheat Board with the monopoly of handling and selling the entire wheat crop of Canada. This bill met with a hostile reception and was passed into law in a much emasculated form. Yet by 1943 the Wheat Board had come to have sole responsibility for disposing of Canada's wheat crop; in 1946 one of the advantages to the Canadian Government of the British Wheat Agreement was that it enabled it to postpone making a final decision about whether the Wheat Board was to remain the sole agency for marketing Canadian wheat; and up to the summer of 1953 the Board retained its powers on the plea that they were necessary

to Canadian participation in the 1949 International Wheat Agreement. Professor MacGibbon's study, in short, illustrates the mutual interaction between national and international economic planning, and shows how political influences work upon both. And it also underlines the troubled nature of these two decades. From the point of view of the Western Canadian wheat growers peace and peace again had its troubles no less than war. War, depression, long-term changes and renewed war disrupted and distorted development scarcely less on the Canadian prairies than in the British Isles.

The book is, as its title proclaims, a history of trade, and not a complete study of the grain economy, nor a complete study of the economic and political factors involved in the increase of government activity in this instance, nor a complete study of the economics of international agreements. There are loose ends concerning both production on the one hand and politics on the other, but enough is said about each to reveal the nature and extent of the difficulties they are likely to raise for planners. But on one point Professor MacGibbon might have given more information. In a defence of the British Wheat Agreement in 1951 Mr. Howe remarked: "The time when you must decide whether an agreement is good or bad is when you sign on the dotted line, and we signed on that dotted line in 1946" (p. 144). But what were Canadian expectations in 1946? On p. 121 we are told that a contract "on the basis of a price that was so much below current wheat values" caused "distinct surprise"; but we have just learned (p. 120) that growers "were becoming increasingly alarmed about the future stability of world prices." In 1947, when the Agreement was continued at a raised price, producers' expectations were more favourable; but in the event the British again did well out of it, and the total "loss" to Canadian farmers was estimated (not by Professor MacGibbon) on the basis of staggeringly jejune calculations, at from $166 million to $330 million or more. But the actual figures are much less interesting than the conditions which made such an agreement possible, and here we could do with more information.

All in all, however, this is an admirable book, required reading for those who see an easy, quick or entirely satisfactory solution to primary producers' problems in government intervention and international agreement.

A. J. YOUNGSON

Emmanuel College,
Cambridge.

Attempts at General Union: A Study in British Trade Union History, 1818–1834. By G. D. H. COLE. (London: Macmillan, 1953. Pp. viii + 218. 16*s*.)

THIS small book is a revised and enlarged version of a study which first appeared in 1939, in the *International Review for Social History*, the journal of the International Institute for Social History, at Amsterdam. Nearly a quarter of the book is taken up with appendices of documents, which are already proving useful to students; they would be even more useful if the reader could be sure that the documents have been accurately transcribed. Professor Cole's copy of the Constitution of the Grand National Consolidated Trades Union (Appendix 7) differs at several points from that given by Sidney and Beatrice Webb as an appendix to their *History of Trade Unionism*; yet both copies seem to have been taken from the same document in the Goldsmiths' Library.

Professor Cole has not attempted to give a complete history of trades unionism between 1818 and 1834; his main purpose has been to supplement and clarify the narratives of earlier historians. The first ten years of the period are disposed of in ten pages; even for the crucial years 1829–34 there are gaps in the narrative which may be disconcerting to the reader. He is expected to have read not only the Webbs and the Hammonds but also Warburton, Postgate, Fynes and Ness Edwards, as well as Podmore, Holyoake, Benjamin Jones and the T.U.C.'s memorial volume on *The Martyrs of Tolpuddle*. If he has read all these, he will have a confused impression of the labour movements that were rising and falling in the early eighteen-thirties. It is this confusion that Professor Cole has tried to dispel; but it may be doubted whether he has succeeded. On many points he has used much new and detailed information; but the piling up of details does not in itself clarify a confused story. In Chapter VI of the book, a long and involved account is given of the Yorkshire Trades' Union, sometimes called the Leeds Union, sometimes the Leeds Combination, sometimes the Leeds Trades' Union; apparently the Clothiers' Union, sometimes called the Leeds Clothiers' Union, was a part of the wider Trades' Union. The Worsted Operatives' Union (p. 63) is described as the Worsted Section of the Leeds Union (p. 64); it is also described (p. 66) as the Bradford section of the Trades Union, and may even have been the "Bradford Order of Weavers" (p. 69), which was apparently identical with the Stuff and Worsted Union. There was also a Woolcombers' Union, which is said to have been a section of the Worsted and Stuff Operatives' Union (p. 72). Later reference is made to "a Society of Woolcombers, who may have been part of the Stuff and Worsted Operatives' Union, which was in turn a constituent of the 'Yorkshire Trades' Union'" (p. 74); only one page later the Woolcombers are described as the leading members of the "Bradford Stuff and Worsted Union" (p. 75). Professor Cole has laboured hard over the complicated details of these little-known labour movements in Yorkshire; but his account remains confusing, if not confused.

The "Attempts at General Union" began to come to a head with the establishment of the Grand National Consolidated Trades Union in 1834; or was it in 1833? Mr. and Mrs. Webb were quite sure that the G.N.C.T.U. was founded in 1834; Professor Cole, in *The Common People* and *A Century of Co-operation*, has no less confidently asserted that it was founded in 1833. The date 1833 is maintained on the dust cover and the first page of the present volume; yet by Chapter XV Professor Cole seems to be in agreement with the Webbs, that the Union was founded in 1834, after all. Even so, it is not easy to accept his conclusion that the Constitution of the G.N.C.T.U. was adopted in February 1834. The Resolutions of February 1834 name the *Pioneer* as the official organ of the Executive Council, whereas the Constitution declares that the *G.N.C.T.U. Gazette* shall be "considered the official organ of the Executive Council, and the general medium of intelligence on the affairs of the Union." But it was not until June that Morrison's *Pioneer* was replaced (pp. 145–6) by the *Official Gazette of the Grand National Consolidated Trades Union*.

Professor Cole is well aware that his essay has not cleared up all the difficulties of the story; he appeals for further information from northern students who have access to local collections of materials and the files of local newspapers. In spite of its shortcomings, his book is a useful addition to our knowledge of a peculiarly tangled subject. It would be going rather too far to say that he has blazed the trail; but he has hacked manfully at the jungle, and has let daylight into many dark places.

ARTHUR REDFORD

University of Manchester.

Enterprise and Secular Change: Readings in Economic History. Edited by F. C. LANE and J. C. RIEMERSMA. (London: Allen & Unwin, 1953. Pp. v + 556. 32*s*.)

THE editors of this useful collection of articles and papers have set out to show how economic historians have studied a great diversity of problems, to illustrate their employment of different kinds of historical sources and to demonstrate a number of the more important concepts and methods they have evolved. The book is divided into three sections—the first concerned with the changing organisation of business and the role of the entrepreneur; the second, with the history of money and prices; and the third, with the tasks and methods of economic history as an independent discipline.

Many of the articles collected in these pages will be familiar to economic historians, although some of the controversies covered in the last section have produced only the faintest ripples in English academic circles. Few economic historians have claimed that economic history should compete with economics: few have succumbed to the German urge to schedule stages in economic development. Even the recent impact of theoretical economics —not so much Professor Heckscher's "pure theory" as Keynesian theory—has not profoundly changed the attitudes of English economic historians to their tasks. They have continued to tackle specific problems which interested them rather than to try to systematise the whole development of economic organisation: the questions they have asked, at least in recent years, have been Sir John Clapham's famous questions—"how large? how long? how often? how representative?" Never lacking in curiosity and seldom in a distinctive brand of whimsicality, they have also agreed with Clapham that "it is at the over-lapping margins of disciplines and sciences that the most important discoveries are usually made." The rather strained attempts by some of the writers in this volume carefully to circumscribe the boundaries of economic history are not congenial, one feels, either to the present or to the past generations of English economic historians. If they do not like social history with the politics left out, nor do they like economic history with the social history left out. They have only a limited interest in battles of definitions.

By far the most powerful essay in the last section of this book is Marc Bloch's "Towards a Comparative History of European Societies," although Simiand's essay on "Causal Interpretation and Historical Research"—based on two papers written in 1903 and 1906—raises many questions which Clapham never asked. A newly-translated article by Professor Arthur Spiethoff represents the latest (1948–52) refinement of the work of the school of German "historical economists." Significantly almost all its footnotes refer to German sources, although Walter Lippman receives a mention in the text. Spiethoff replaces Sombart's "economic systems" with "economic styles" (patterns of economic life) and draws careful methodological distinctions between pure economic theory, economic Gestalt theory and economic history. His essay, culled from two of his writings, deserves attentive study, and can be profitably compared not only with the English but also with the French approach to the subject.

More interesting perhaps than the section on method is the first section of the book on business units. Two interesting articles by Professors Luzzato and Sapori—shorn, alas, of their footnotes —qualify Sombart's thesis—also printed without footnotes— that in the Middle Ages there existed only a host of small, usually uneducated, business-men who possessed the mentality of artisans and confined themselves to activities affording them no more than a modest livelihood. The translation, as of Sombart, is a little stilted, although well worth doing. Professor de Roover follows up with a synthesising article on "the commercial revolution" of the thirteenth century, and Professor Lane with his scholarly study of family partnerships and joint ventures in the Venetian Republic. Then comes a wide gap, one of the few gaps in the book, and the reader passes direct to the Handlins' study of the origins of the American business corporation. It is a long way from Venice to Salem, and much entrepreneurial history is left out at this point. Later articles by Gardiner Means on the growth of the huge corporation in the United States and by Professor Jenks on American railroads are already deservedly well known and frequently quoted. The section concludes with an exhortatory lecture by Professor Arthur Cole, who has done much to encourage the study of business history. "To study 'the entrepreneur,'" he maintains, "is to study the central figure in modern economic history, and, to my way of thinking, the central figure in economics."

Apparently some of the writers in the second section do not agree. Professor Wesley Mitchell, whose article on the role of money in economic history—a rather disappointing article— begins the section, asks whether economic history cannot "be organized most effectively around the evolution of pecuniary

institutions." After reading some of the essays in the second section, one hopes not. The most useful is Professor Nef's article on prices and industrial capitalism in France and England: Professor Earl Hamilton's study of profit inflation and the industrial revolution seems to call for a contribution from Professor Ashton.

The editors of this book of readings are to be congratulated on putting together such a well-chosen selection of readings. Sponsored by the American Economic Association and the Economic History Association, the book should succeed in its main purpose of helping economists, sociologists and general historians to acquaint themselves with some of the problems and achievements of economic history. It should also, as they say, provide young scholars starting on their own investigations in economic history with a collection of material in which they can find together some of the aims, methods and results of other investigators. There is need for interchange of ideas of this sort. As Marc Bloch remarks in the conclusion of his paper, " a dialogue between deaf people, each of whom answers with complete disregard for the other's questions, may be a standard device of comedy and draw laughter from a susceptible public, but it hardly deserves recommendation as an intellectual activity."

ASA BRIGGS

Worcester College,
Oxford.

NOTES AND MEMORANDA

PHYSICAL PRODUCTIVITY IN CANADA, 1935–52

PRODUCTIVITY study has been turned recently in the direction of Canada, and Canadian experience has been given universal importance by Mr. Maddison's characterisation of it, " Productivity in an Expanding Economy." [1] The investigators conclude that productivity has risen in Canada at a rate of about 3% per man-hour per year in recent decades, a more rapid advance that has been enjoyed by the United States. However, the increase is held to depend heavily on structural changes, especially the shift of workers from Canadian agriculture to other industries. Mr. Maddison finds that productivity in the Canadian economy as a whole rose only 0·3% per year between 1941 and 1949, and that " productivity in manufactures grew more slowly than in the rest of the economy." [2] Mr. Sutton finds a spectacular advance in productivity during the war, but little advance after it. The gains are traced chiefly to agriculture, and Mr. Sutton presents computations to show that there was only a minute gain in the productivity of Canadian manufacturing, 1945–50.[3] This recent record is hardly auspicious, or what one might expect of an " Expanding Economy." If good crop weather and the movement of under-employed workers out of agriculture, neither of which can be depended upon indefinitely, have been the main support, and the industrial sectors show little promise, Canada's prospects of maintaining or improving her relative efficiency are far from bright.

Fortunately for Canada, productivity appears to have advanced in the industrial sectors of the Canadian economy more rapidly and regularly than Mr. Maddison and Mr. Sutton have found. This view follows from the measurement of Canadian productivity in terms of physical volume of output, by sector. This note offers reasons for considering this method of measurement preferable to

[1] A. Maddison, " Productivity in an Expanding Economy," ECONOMIC JOURNAL, LXII, No. 247, September 1952, pp. 584–94; Maddison, " Productivity in Canada, the United Kingdom, and the United States," *Oxford Economic Papers* (New Series), IV, No. 3, October 1952, pp. 235–42; G. D. Sutton, " Productivity in Canada," *Canadian Journal of Economics and Political Science*, XIX, No. 2, May 1953, pp. 185–201; Maddison, " Productivity in Canadian Manufacturing, 1935–1948," *ibid.*, pp. 222–6.

[2] Maddison, " Productivity in an Expanding Economy," p. 586, p. 590.

[3] Sutton, *op. cit.*, Table IV, p. 189.

those so far used, and presents indexes of productivity derived by it.

The Choice of Measures of Productivity

To calculate Canadian productivity, Mr. Maddison and Mr. Sutton have depended mainly on estimates of Canada's Gross National Product, deflated to give totals of Real Product in constant dollars, and divided by employment or man-hour data to yield a productivity series. While results by this method offer a useful guide, great dependence should not be placed on them. Global estimates suffer from the fact that some of the parts of which they are made up are rough approximations. In particular, real output for most services, and for construction, is calculated in Canada in such a way that constant productivity is implicit.[1] The small increases in productivity in Canada shown for recent years may, therefore, owe more to the nature of the statistics than to actual experience. Mr. Sutton's computation of productivity in manufacturing from the net value of manufacturing output, deflated by the wholesale price index of manufactured goods,[2] is still more unsatisfactory. The wholesale price index of manufactured goods is essentially a gross concept, heavily affected as it is by changes in raw material prices. It is not, therefore, an appropriate deflator for a net value which should not be affected directly by raw material price changes. Mr. Maddison, finally, has developed measures of net physical productivity for particular Canadian manufacturing industries.[3] The difficulty with these is that they cover only a small part of Canadian manufacturing, and there is no basis for judging their representativeness. The evidence they do afford is of considerable advances in productivity in manufacturing.

The productivity series in this paper are derived by dividing indexes of the physical volume of output in particular sectors, by indexes of employment for those sectors.[4] Several advantages may be claimed for this method. In principle, a measure of the net physical volume of output is precisely what is wanted for a

[1] C. L. Barber, *The Measurement of Total Real Product in the Canadian Economy*, Ottawa, 1952 (mimeo.).

[2] Sutton, *op. cit.*, pp. 189–90.

[3] " Productivity in Canadian Manufacturing, 1935–1948 " and " Productivity in Canada, the United Kingdom, and the United States."

[4] I presented indexes derived in this way in " Productivity and the Shorter Work Week," *Canadian Trades and Labor Congress Journal*, XXX, No. 8, August 1951, pp. 8–11. As the indexes of physical production used in preparing this article have since been revised, the series differ from those presented here, though the same general conclusions may be drawn.

productivity series. In practice, an index of physical production covering a significant part of the economy is weighted and adjusted by values; but the compilers of the index are working to the specific goal of a measure of physical output changes. Indexes may be selected for the sectors for which output is more measurable and most reliably measured, avoiding the unexplored territories within global series. On the other hand, much wider coverage than particular industries is possible, so that conclusions may be drawn for Manufacturing, Mining and Agriculture sectors. Finally, it is an advantage that the series of industrial physical

Indexes of Physical Productivity, Canada, 1935–52

1946 = 100

Year.	Agriculture : physical volume of output per man-year.	Mining : physical volume of output per man-year.	Manufacturing : physical volume of output per man-year.	Manufacturing : physical volume of output per man-hour.
1935	75·2	100·8	85·2	—
1936	66·2	102·1	88·3	—
1937	64·1	106·0	91·3	—
1938	81·0	109·7	86·7	—
1939	95·7	112·4	91·1	—
1940	99·3	117·4	98·9	—
1941	91·4	119·4	102·1	—
1942	147·7	120·8	101·7	—
1943	104·1	117·1	100·7	—
1944	126·5	107·6	104·9	—
1945	99·2	109·8	100·5	96·9
1946	100·0	100·0	100·0	100·0
1947	101·1	107·3	102·3	102·8
1948	106·9	112·6	103·2	104·4
1949	110·5	117·9	103·9	104·9
1950	141·2	123·4	108·2	109·2
1951	151·9	130·9	107·4	109·7
1952	180·8	133·8	107·9	111·0

Sources

Agriculture—D.B.S., *Index of Farm Production, 1952* (Sub-title : " Index Numbers of the Physical Volume of Agricultural Production, Canada, 1935–1952 "), Memorandum, Ottawa, May 1953. This Memorandum suggests deductions of 3 points from the 1950 index, and 3·5 points from the 1951 index, to take account of the low quality of these crops, and these deductions have been made in calculating the series above.

D.B.S., *Canadian Labour Force Estimates, 1931–1950*, Reference Paper No. 23, Ottawa, 1951, and June Surveys of the Labor Force, *Canadian Statistical Review.*

Mining and Manufacturing—D.B.S., *Revised Index of Industrial Production, 1953–1951*, Reference Paper No. 34, Ottawa, 1952; D.B.S., *Employment, Payrolls and Average Weekly Earnings, 1939–1946, with Index Numbers of Employment, 1921–1938*, Ottawa, 1951. (All these indexes conform to the Canadian Standard Classification of Industries.) Series were completed from the *Canadian Statistical Review.* To compute output per man-hour, use was made of the series, " Average Hours Worked per Week in Manufacturing Industries," *Canadian Statistical Review* or Canadian *Labour Gazette.*

outputs used here have recently been revised, with great care, by the Canadian Bureau of Statistics.[1] For these reasons, the productivity indexes presented are believed to be more reliable than those that have so far appeared.

Physical Productivity in Canada

Agriculture, Manufacturing and Mining, for which indexes are shown, cover a little less than half the Canadian economy; but this is the part for which productivity measures are most reliable, and perhaps most informative. The series support the view that Agriculture has played a leading role in Canadian productivity gains. But, in contradiction to most other findings, they show creditable advances in Manufacturing, and large advances in Mining. They suggest that productivity gains have come in waves or cycles, and therefore throw doubt upon the significance of annual rates of increase calculated between years selected fortuitously.[2] They deny that productivity gains were so concentrated in war-time as Mr. Sutton believes, and they show a post-war wave of gains at variance with his findings. Some of these points may be elaborated briefly:

(1) *Agriculture.*—The spectacular, though erratic, advance of productivity in Canadian agriculture is difficult to state meaningfully in a rate of increase, and it is a complex phenomenon to interpret. At least four factors play a significant part in it: (i) potential productivity gains achieved in or before the 1930s but

[1] Dominion Bureau of Statistics, *Revised Index of Industrial Production, 1935–1951*, Reference Paper No. 34, Ottawa, 1952. The merits and limitations of the revised indexes as measures of the physical volume of output are carefully discussed, pp. 11–35. Reasons offered by the Bureau of Statistics for not itself releasing productivity figures (pp. 33–5) seem to apply to particular industry series rather than to totals.

[2] Mr. Maddison, from the limitations of his data, suffered the disadvantage in "Productivity in an Expanding Economy," of having to select bench-mark years that obscure the course of productivity changes. He found rates of increase in productivity per man-year for the whole Canadian economy of 3·8% for 1931–41 and 0·3% for 1941–49. My manufacturing series gives similar rates of 3% for 1935–41 and 0·2% for 1941–49. However, my series argue that the low rates for 1941–49 are misleading, since they compare a fairly high year in one cycle with a fairly low year in the next.

In the same way, Mr. Maddison's comparisons between Canada and the United Kingdom ("Productivity in Canada, the United Kingdom, and the United States"), using the year 1935 because British statistics are available for it, yield biased results to the considerable extent that depression and under-utilisation of plant was more severe in Canada than Britain. For the same reason, but in a lesser degree, Canada probably suffers in comparisons with the United States for pre-war years. Mr. Maddison seems to dismiss this difficulty too readily (*ibid.*,

not realised until the war—*i.e.*, disguised unemployment; (ii) good weather as against drought in the 1930s; (iii) a substantial movement of marginal subsistence farmers—persons living on a "farm" but producing little—into industrial pursuits when industrial employment expanded;[1] (iv) "real" productivity gains—better methods and machinery. It is scarcely possible to isolate these factors. It may be some indication of the amount of disguised unemployment before the war that the agricultural labor force dropped about 13% early in the war, while the total labor force remained approximately constant. Something less than half—perhaps 35%—of the gains in productivity may be ascribed to improved weather conditions.[2] "Real" productivity gains, if important, were certainly less so than either weather or the exit of marginal farmers. The rate of increase in productivity between 1939 and 1949—just under 1½% per year compounded—would seem to be abstracted in a reasonable degree from weather fluctuations; but it must not be forgotten that a continued flow of surplus labor from agriculture depends upon continued general buoyancy.

(2) *Mining and Manufacturing.*—The productivity gains shown for these sectors are larger and more regular than other investigators have found, and they are more authentic than the gains in Agriculture in the sense that they depend little on weather and the liquidation of disguised unemployment. Over the seventeen-year period shown, the average compounded rate of productivity increase (physical output per man-year) was a little under 1½% per year in Manufacturing and a little under 1¾% in Mining. Periods of increasing economic activity show much higher rates: about 3% in Manufacturing, 1939–44; 2½% in Mining, 1935–42; and no less than 5% in Mining, 1946–52. Rates taken from peak

[1] Two losses occur in this process, which are not taken into account: (1) the subsistence farmers lose leisure and independence; (2) the economy loses resiliency —loses, that is, its handy labor reserves available in emergency. The creaking of the more rationalised British economy in recent years suggests that such labor reserves have a great, if indeterminate, value. This seems to be a valid element in the argument that a "reasonable" amount of unemployment would be a good thing. The usual formulation of that argument—that lazy workers will be terrorised into working harder—ignores the fact that wage-earners have little control over their conditions of work, and is at variance with the finding of productivity studies that high productivity goes with full employment (full utilisation of plant).

[2] This view was arrived at by computing how much productivity in the past dozen years would have exceeded productivity in the 1930s, if actual agricultural output had been produced by an agricultural labor force that remained as large a proportion of the total labor force as was the case in the 1930s. See Sutton, *op. cit.*, p. 193 and p. 200.

to peak of productivity waves would seem to be the best indicators of long-run forces, abstracted from cyclical factors. On this basis, the rate of increase for both Mining (1942–52) and Manufacturing (1945–52) is just over 1% per year. All these rates represent changes in physical output per man-year. It is possible to show a rate of increase of physical output per *man-hour* for Manufacturing, 1945–52. The rate is a little under 2% per year, which may be compared with the rate of increase per *man-year* for the same period of 1%. Hence, in this instance, productivity per man-hour rose almost twice as rapidly as productivity per man-year.[1]

(3) *Other Sectors.*—The greatest productivity problem, statistically, lies in the large part of the economy outside Agriculture, Manufacturing and Mining. It is in such areas as trade and services that productivity is hardest to measure, and Canadian real output data for these sectors make only partial allowance, or no allowance at all, for productivity changes.[2] Global estimates, therefore, to this extent substitute arbitrary assumptions for knowledge. Comparisons with other countries over the past, and extrapolations into the future, to estimate Canada's chances relative to the United States or otherwise,[3] are correspondingly speculative. Any extrapolation, also, must be precise concerning the level of economic activity envisaged; for the series presented here support the conclusion reached elsewhere that high productivity is heavily dependent upon a high level of economic activity.[4]

H. C. PENTLAND

University of Manitoba.

[1] It is misleading to express this relationship, as is often done, by saying that half the gain in productivity was taken in leisure. Such a formulation implies that productivity gains could have been realised without shortening the hours of work, thereby ignoring the importance of a shorter work week as a stimulus to efficiency.

[2] C. L. Barber, *op. cit.*

[3] Sutton, *op. cit.*, pp. 196–201. Maddison cautions against extrapolation, "Productivity in an Expanding Economy," pp. 593–4.

[4] Maddison, "Productivity in Canadian Manufacturing, 1935–1948," p. 223; "Productivity in an Expanding Economy," pp. 591–2. I have made some unpublished inter-provincial comparisons of productivity in selected Canadian manufacturing industries, 1937–50, which indicate also that the degree of plant utilisation is of great importance.

PROFESSOR PIGOU ON THE EFFICIENCY OF THE COMPETITIVE CAPITAL MARKET

1. PROBABLY no economist would consider ideal the allocation of consumption over time by the competitive capital market. Few, indeed, would regard the competitive solution as even a sufficient approximation to the ideal. External economies and diseconomies of investment and consumption, indivisibilities, the imperfection of knowledge on the parts of savers and investors (concerning future prices and the investment plans of other individuals) may be difficult to measure, but it would be a brave soul who would deny their importance. To this catalogue of difficulties it may be added that the bulk of savings originates with corporations and that much private saving is compulsory or the result of contracts entered into years before.

It is not the purpose of the present note to attempt a sweeping refutation of current views; there is probably no sense sanctioned by current usage in which the competitive solution is optimal. Rather it is to examine two propositions, both reflecting unfavourably on the competitive outcome, which have been argued by Professor Pigou. Both propositions appear to have been generally accepted within the profession. But their radical implication does not appear to have been perceived. Both propositions imply the rejection of revealed preference as the yard-stick of economic policy. It will be argued that there has not been provided a sufficient reason for doing so.

2. The first proposition has been stated by Pigou as follows: [1]

> "... our telescopic faculty is defective, and ... we, therefore, see future pleasures, as it were, on a diminished scale." [2]
>
> "This reveals a far-reaching economic disharmony. For it implies that people distribute their resources between the present, the near future and the remote future on the basis of a wholly irrational preference." [3]
>
> "Hence the existence of preference for present over equally certain future pleasures does not imply that any economic dissatisfaction would be suffered if future pleasures were substituted at full value for present ones." [4]

The contentious part of this argument may be summarised in two statements, one ethical, the other empirical: (i) It is proper that

[1] A. C. Pigou, *The Economics of Welfare* (London, 1938), pp. 24–6; *idem*, *Socialism versus Capitalism* (London, 1937), pp. 132–3. The argument has been stated also by Dobb, *Political Economy and Capitalism* (London, 1940), pp. 308–9.

[2] Pigou, *The Economics of Welfare*, p. 25. [3] Pigou, *loc. cit.* [4] Pigou, *loc. cit.*

there should be no time preference between "equally certain" pleasures of "equal size." (ii) In fact, such preference exists.

The second proposition is based on the uncertainty of expected satisfactions:

> "Since human life is limited, such fruits of work or saving as accrue after a considerable interval are not enjoyed by the person to whose efforts they are due. This means that the satisfaction with which his desire is connected is not his own satisfaction, but the satisfaction of somebody else, possibly an immediate successor whose interests he regards as nearly equivalent to his own, possibly somebody quite remote in blood or in time, about whom he scarcely cares at all. It follows that, even though our desires for equal satisfactions *of our own* occurring at different times were equal, our desire for future satisfaction would often be less intense than for present satisfaction, because it is very likely that the future satisfaction will not be our own. This discrepancy will be more important the more distant is the time at which the source of future satisfaction is likely to come into being . . ." [1]
>
> "The practical way in which these discrepancies between desire and satisfaction work themselves out to the injury of economic welfare is by checking the creation of new capital and encouraging people to use up existing capital to such a degree that larger future advantages are sacrificed for smaller present ones." [2]

The contentious part of this argument, also, may be summarised in two statements, one ethical, the other empirical: (iii) It is proper that an individual's rate of saving should not be influenced by the possibility that he will not live to enjoy his savings. (iv) In fact, he will save less than if he were "sure" that he would live to enjoy his savings.

3. Statements (i) and (iii) are frankly persuasive or ethical. They are radical propositions, since they amount to the rejection of the currently revealed preferences of the present generation as the yard-stick of economic policy. Their persuasiveness is enhanced by supporting statements ((ii) and (iv)) which have a superficial appearance of objectivity, *i.e.*, of saying something about the real world. Upon examination, however, the objectivity ceases to be apparent and the ethical statements are left without support. Without support, they cease to be plausible.

Statement (ii) is unacceptable, not because it is demonstrably false, but because its truth or falsity cannot be ascertained, either by market observation or by controlled experiment. Whether or not individuals have a preference for present over "equally certain" future pleasures cannot be determined, since future pleasures are not, and cannot be made, "equally certain" with present pleasures. In the market, individuals typically choose between uncertain pleasures. And if it cannot be determined whether or not statement (ii) is true it cannot be determined, in a specific situation, by how much saving falls short of the ideal. Pigou has failed to provide an operationally meaningful alternative to currently revealed preferences as the yard-stick of economic policy.

[1] Pigou, *The Economics of Welfare*, p. 26. [2] Pigou, *ibid.*, p. 27.

Similarly, statement (iv) seems to be non-testable. At any rate there has not been described a set of operations the performance of which would indicate the truth or falsity of the statement. This means that no way has been provided for discovering by how much market saving deviates from the ideal. Again there has not been provided, as the yard-stick of economic policy, an operationally meaningful alternative to currently revealed preferences. The proposal to abandon the latter, therefore, cannot be seriously considered.

4. The literature on economic policy abounds with apparently objective statements. Such statements are particularly persuasive. It behoves the careful writer to describe methods of checking their truth or falsity. That even such a writer as Professor Pigou should occasionally fall short of the ideal merely underlines the difficulty of achieving it.

MURRAY C. KEMP

McGill University.

THE THEORY OF FEDERAL FINANCE [1]: A REJOINDER

MR. SINGER has criticised my statement: "Benefits from the federal view point will be maximised when more is spent on backward and poorer areas" on the ground that it is subject to the important limitation that "the productivity of development expenditure is higher in the more advanced parts of a federal union." [2] It should, however, be noted that "productivity" is not the same thing as "benefits" or "welfare." In spite of lower productivity in backward areas it is very likely that, up to a limit, development expenditure in these areas will confer greater benefits because of comparatively lower income and expenditure levels and also because of a greater need for an expansion in employment opportunities. With differences in needs equal "productivity" will yield comparatively greater

[1] ECONOMIC JOURNAL, March 1953, pp. 84–97.
[2] ECONOMIC JOURNAL, September 1953, p. 726.

benefits in poorer or backward areas, and hence, in spite of lower productivity, it will still be advantageous to incur development expenditure in these areas. Just as, while trying to maximise benefits, it is necessary from the " distributive aspect " to spend more on poorer areas, similarly from the " productive aspect " it is desirable to spend more on poorer areas than is justified from considerations of " productivity " alone.

I agree with Mr. Singer that the argument used to deduce the theoretical superiority of a federal world state could " be applied to prove the superiority of a unitary world state as well." But what I was trying to prove was that theoretically a federal union is preferable to sovereign national states. Theoretically, as well as practically, it is not only more difficult for these sovereign states to lose their identity to form a world unitary state but also, as already pointed out by me, for some areas " the political form of government should be federal in character because their regional diversities are unsuited to a unitary constitution." Mr. Singer rightly points out that " transfers of income to poorer units occur even now," but these are not enough. The establishment of a world federal state would enable it to carry such transfers to their logical limit (dictated by the Principle of Federal Finance) and not stop half-way as at present.

R. N. BHARGAVA

University of Allahabad.

OFFICIAL PAPERS

FOOD CONSUMPTION AND EXPENDITURE [1]

THOSE who stress the importance of quantitative research in the development of the social sciences will welcome this, the second annual report on the results of the Ministry of Food's National Food Survey, not only for its intrinsic interest, but also because it indicates that the research tools provided by a major and continuous budgetary inquiry are being kept in use, tested and further improved. The present report deals with the impact of the declining food supplies and rising prices of 1951 on the diets of households of different social class and composition. No less than fifty-five tables, many of them large, appear among ninety-five paragraphs of text, supplemented by four appendices with a further twenty-eight detailed tables. On the choice of such a

[1] *Domestic Food Consumption and Expenditure, 1951 : Annual Report of the National Food Survey Committee.* (London: H.M. Stationery Office, 1953. Pp. 116. 3*s.* 6*d.*)

format, which is now almost a hallmark of the Food Survey Committee, I will comment later. Meanwhile I would draw the reader's attention to three items of interest.

Of these the first is the imputation of the cash values of the food subsidies to the different social and economic groups. During the second half of 1951 the cash value of the subsidies was equal to 14–15% of all domestic food expenditure on the average; the report shows very little dispersion about this figure in terms of the different social classes, the range being from 13–15% in the lowest group to 11–12% in the highest. On the other hand, an estimate of 10–12% for households with two adults and no children compares with 23% for two adults with four or more children, the trend as the number of children increases being significant and regular. Thus the food subsidies are more relevantly discussed under the heading of population policy than under the heading of redistributive measures as usually understood.

The second item is of interest to those concerned with the actual tools of measurement. Prior to 1951 estimates of food consumption (as opposed to purchases) were obtained for each household surveyed by adjusting the figures for food purchased and obtained free during the week of the survey by the net change in larder stocks which were weighed by the investigator on the first and final day. But it was found that there was a constant tendency for the withdrawals from stock to exceed additions, and in fact during 1950 stock withdrawals contributed some 11% to the total value of food consumption. The writers of the report comment that the act of measuring larger stocks most probably played an important role in this process, since the weighing of stocks: (*a*) interfered with the housewife's shopping time; (*b*) drew the housewife's attention to overlooked stocks; and (*c*) may have induced the housewife to postpone some shopping till after the survey to save trouble. Accordingly, the stock measurements were stopped in 1951, and recorded purchases immediately increased by roughly the amount of previous stock withdrawals. Here, we suggest, is illustrated an important Indeterminacy Principle of budgetary surveys: that attempts to obtain too great a precision of measurement may defeat their object, since the act of measurement has a perceptible influence on the object of observation.

Our third item is concerned with some figures of bread consumption per person tabulated by the number of children in households with two adults. Consumption per person declines steadily with the number of children until households with four or more

children are reached, but at this point turns upwards again. This seems explicable on the following hypotheses: (i) that children require less bread than adults; (ii) that the standard of living of households is inversely correlated with the number of children; (iii) that the income elasticity for bread is negative. As the number of children increase to three, the lower requirements of children cause the figures of consumption per person to fall, but with four children the income effect outweighs the physiological factor. A similar result is noted for the total energy value of the diet. The position of the turning point provides a sort of index of relative poverty associated with the presence of children, and it would be of great interest to know how stable such an index has been over the last two or three years.

This leads us back to the choice of format of the report as a whole. We must sympathise with the Committee in their obvious desire to display the results of their survey in as much detail and in as neutral a manner as possible. But short of publishing each individual budget in full it is clearly impossible to anticipate all future research needs, and we put forward the suggestion that the Committee should now begin to experiment with rather more sophisticated methods of summarisation than have yet been attempted. Modern methods of multivariate analysis are sufficiently advanced and the theory of consumers' behaviour sufficiently operational to make the study of budgetary data particularly fertile at the present time. And who should undertake such a study if not those best acquainted with their data?

J. A. C. Brown

Department of Applied Economics,
University of Cambridge.

CURRENT TOPICS

An interesting ceremony took place at Kirkcaldy on the afternoon of Saturday, January 23, when a plaque was unveiled to mark the site of the house where Adam Smith lived from 1767 to 1776, and where he completed *The Wealth of Nations*. The house itself was removed in 1834. The plaque now unveiled replaces an earlier one erected in 1919, which, however, in the light of later researches into the life of Adam Smith was found to contain two inaccuracies. It gave the wrong year for the removal of the old house, and it also stated that the site was that of Adam Smith's birth-place. The exact location of his birth-place is still a matter of some doubt, but it is known to have been elsewhere.

The inscription on the new plaque runs as follows: "Adam Smith, 1723–1790, born Kirkcaldy. On this site stood the home of his Mother in which he lived from 1767–1776 and completed 'The Wealth of Nations'. His grave is in the Canongate Churchyard, Edinburgh. Erected 1953." The plaque has been donated by Bailie P. K. Livingstone. It was unveiled by Sir Alexander Gray, who subsequently delivered an address.

Goldsmiths' Company's Library of Economic Literature. In the autumn of 1903 the Worshipful Company of Goldsmiths presented to the University of London the library of historical economic literature collected by Professor H. S. Foxwell, and sold by him to the Company in 1901. To mark the fiftieth anniversary of this generous gift, the Vice-Chancellor of the University of London held a reception at the Senate House on February 12, 1954, which was attended by over three hundred guests, including the Prime Warden and many other members of the Goldsmiths' Company. The University Library, of which the Goldsmiths' Company's Library forms an important part, was open for the occasion, and many notable volumes from the collection were displayed. It is common knowledge that there was a time towards the end of Foxwell's life when his relations with the University of London in so far as they concerned the Goldsmiths' Library were very bad. Indeed, disapproving of the arrangements which had been made for its custody at the time that the University was still housed in the Imperial Institute, he disowned all connection with the Committee of Management and caused this to be announced in a note which is attached to the account of the library which appears in the last edition of Palgrave's *Dictionary of Political Economy*. It is safe to say that were he now living he would have long ago abandoned this attitude. The collection on which he lavished so much loving care is now housed in a princely reading-room in the tower of the Senate House in Bloomsbury. There is no place in London which affords greater amenities to the student of the history of economic thought. In the fifty years since it was given to the University, the collection has doubled in size from some 30,000 to some 60,000 volumes, but it still reflects the dominant interests of its original owner—the development of the thought and legislation on all matters relating to finance, trade and general economic policy in Great Britain and Western Europe from the sixteenth to the nineteenth century.

RECENT PERIODICALS AND NEW BOOKS

Applied Statistics

VOL. III, NO. 1, MARCH 1954. *Production and Administration Cost in Relation to Size of Firm (with Appendix : A Problem of Least Squares Method :* R. BECHHOFER) : S. MELMAN. *An Analysis of the Results of a Visual Test of Textile Yarn :* A. G. BAKER, K. W. HILLIER and R. H. WOODWARD. *Who Gets the Medicine ? :* P. G. GRAY and A. CARTWRIGHT. *Too Good to be True ? :* A. STUART. *Some Uses of the Nomogram in Statistics :* S. BROADBENT. *A Neglected Point on the Construction of Price Index Numbers :* A. P. RUDERMAN.

Economica

VOL. XXI, NO. 81, FEBRUARY 1954. *Seasonal Variation in Retail Prices :* R. G. D. ALLEN. *Concerning Utility :* C. KENNEDY. *Credit Rationing and the Relevant Rate of Interest :* J. S. G. WILSON. *Combinations of Capital and of Labour in the English Paper Industry, 1789–1825 :* D. C. COLEMAN. *A Cumberland Colliery During the Napoleonic War :* O. WOOD. *Relative Prices, Expenditure and the Trade Balance :* A. C. L. DAY.

The Review of Economic Studies

VOL. XXI, NO. 55, 1953–4. *The Production Function and the Theory of Capital :* J. ROBINSON. *The Value of Invested Capital :* D. G. CHAMPERNOWNE and R. F. KAHN. *The Production Function and the Theory of Capital : A Comment :* D. G. CHAMPERNOWNE. *More Notes on the Rate of Increase :* D. H. ROBERTSON. *Optimum Tariffs and Retaliation :* H. G. JOHNSON. *A Comparison of Welfare Criteria :* R. E. BALDWIN. *A Note on Variable Prices and Foreign Trade Multipliers :* W. BECKERMAN.

Oxford Economic Papers

VOL. 6, NO. 1, FEBRUARY 1954. *The Trade Cycle in Britain, 1790–1850 :* R. C. O. MATTHEWS. *Notes on Excess Capacity :* M. E. PAUL. *The Process of Imperfect Competition :* J. R. HICKS. *Convertibility :* J. R. SARGENT. *Some Economic Aspects of Compulsory Trade Unionism :* V. L. ALLEN. *An Experiment in Commodity Control—The International Wheat Agreement, 1949–53 :* C. D. HARBURY. *An Alternative Proof of a Theorem in Welfare Economics :* C. KENNEDY.

Bulletin of the Oxford University Institute of Statistics

VOL. 15, NO. 12, DECEMBER 1953. *A "Human Needs" Diet : Autumn 1953 :* T. SCHULZ. *Relative Real Wages in Swedish Agriculture and Industry, 1930–1950 :* G. R. ALLEN.

VOL. 16, NO. 1, JANUARY 1954. *The Distribution of Private Capital, 1950–51 :* K. M. LANGLEY. *Average Wages in U.S.S.R. : A Rejoinder :* S. M. SCHWARZ; *A Reply :* P. J. D. WILES. *A Note on the Valuation of British Imports :* E. NEVIN.

The Manchester School of Economic and Social Studies

VOL. XXII, NO. 1, JANUARY 1954. *Some Economic Aspects of the Taxation of Companies :* D. WALKER. *The Task and Methods of the Monopolies Commission :* DAME ALIX KILROY. *The Theory of Effective Demand in the 1920's :* D. J. COPPOCK. *British Exports and the Scale of Production :* J. M. JACKSON.

Transactions of the Manchester Statistical Society

SESSION 1952–3. *Some Reflection on the Cost of Atomic Energy :* A. J. BROWN. *Allocation and Programming in Modern Economics :* K. S. LOMAX. *The Pits of Britain :* SIR HUBERT HOULDSWORTH. *The Task and Methods of the Monopolies Commission :* DAME ALIX KILROY. *Statistics in Industry—a Post-War Review :* T. J. LUNT.

Scottish Journal of Political Economy

VOL. I, NO. 1, MARCH 1954. This is the first issue of the new journal, to be issued three times a year, by the Scottish Economic Society, obtainable from the Editor, 12 Bute Gardens, Glasgow, W.2, or from the publishers, Messrs. Oliver & Boyd, Tweeddale Court, Edinburgh. *The Scottish Economic Society :* A. K. CAIRNCROSS. *The Scottish Society of Economists :* M. T. RANKIN. *Labour Turnover in Shipbuilding :* D. J. ROBERTSON. *The Founding of the Glasgow Chamber of Commerce in 1783 :* H. HAMILTON. *Stability of Membership in Trade Unions :* J. D. M. BELL. *Transport Costs in the North of Scotland :* D. L. MUNBY. *Recent Economic Trends.*

Yorkshire Bulletin of Economic and Social Research

VOL. 6, NO. 1, FEBRUARY 1954. *Students in a Changing World :* F. D. KLINGENDER. *Capacity in the West European Wool Textile Industry :* A. P. ZENTLER and J. GHERSON. *Wages and Earnings in the Sheffield Trades, 1851–1914 :* S. POLLARD. *Some Recent Trends in Trade and Utilization of Vegetable Oils :* J. BELLAMY. *Economic Research by the Trade Unions :* K. J. W. ALEXANDER.

Population Studies

VOL. VII, NO. 3, MARCH 1954. *The Intelligence of Urban and Rural Children :* W. G. EMMETT. *Intelligence and Family Size :* I. TH. PAPAVASSILIOU. *Theory of Population and Modern Economic Analysis : II :* A. T. PEACOCK. *Immigration of Africans into the British Caribbean :* G. W. ROBERTS. *Population Policy in France : Family Allowances and Other Benefits :* I. C. WATSON.

The British Journal of Sociology

VOL. V, NO. 1, MARCH 1954. *The Study of Change in Social Science :* W. HIELD. *Aristocracy and the Middle Class in the British Political Elite 1886–1916 :* W. L. GUTTSMAN. *Suffragium : from Vote to Patronage :* G. E. M. DE STE. CROIX. *Crime or Disease :* A. G. N. FLEW. *The Peasant Movement in Norway : A Study in Class and Culture :* P. A. MUNCH. *Attendance in the Coal Mining Industry :* F. D. K. LIDDELL.

The Sociological Review

NEW SERIES, VOL. 1, NO. 2, DECEMBER 1953. *Patrick Geddes (1854–1932) :* H. J. FLEURE. *British Conurbations in 1951 :* G. W. S. ROBINSON. *Liberal Voting at the General Election of 1951 :* E. J. CLEARY and H. POLLINS. *The Economic and Social Position of Negro Immigrants in Britain :* M. BANTON. *The Meaning of the Coronation :* E. SHILS and M. YOUNG. *Peasant Society and the Origins of Romantic Love :* W. STARK. *Some Social Aspects of Recent Changes in Agriculture in West Cumberland :* M. W. WILLIAMS.

The Sociological Review

VOL. XXXVIII, SECTION 4, 1946. *The Village in the Outer Isles of Scotland:* W. J. GIBSON.

VOL. XLIII, SECTION 12, 1951. *Book Reviews.*

The Political Quarterly

VOL. XXV, NO. 2, APRIL–JUNE 1954. *Notes and Comments : The Berlin Conference and After. The French Presidency :* D. PICKLES. *India as a Welfare State :* W. A. ROBSON. *Anna Wheeler : a Pioneer Socialist and Feminist :* R. K. B. PANKHURST. *Industrial Unrest and the Wage Problem :* B. C. ROBERTS. *The American Presidential System :* N. L. STAMPS. *The Penal Code and the Use of Force :* S. ALDERSON.

Political Studies

VOL. II, NO. 1, FEBRUARY 1954. *Interests :* J. PLAMENATZ. *County Administration of Planning Controls :* P. G. RICHARDS. *In Defence of Apathy : Some Doubts on the Duty to Vote :* W. H. MORRIS JONES. *Problems of the Fourth Republic :* P. M. WILLIAMS. *Representation in Plural Societies :* W. J. M. MACKENZIE. *Administrative Theory in the United States : A Survey and Prospect :* D. WALDO.

Soviet Studies

VOL. V, NO. 4, APRIL 1954. *The Soviet Engineering Industries :* S. LAMET. *Soviet Documents, September 1952—December 1953 :* J. MILLER.

Accounting Research

VOL. 5, NO. 1, JANUARY 1954. *Recent Developments in National Income and Social Accounting :* M. GILBERT and R. STONE. *Costing Terminology* J. KITCHEN. *Net Taxable Wealth, Income, and Age of Directors and Executive Directors of Larger Swedish Companies :* G. LINDGREN. *The Mathematics of Variance Analysis—III—The Theory of N Variance Systems :* G. AMERMAN. *The Valuation of Goodwill :* J. TAYLEUR.

The Incorporated Statistician

VOL. 4, NO. 4, DECEMBER 1953. *The Work of the Central Statistical Office :* H. CAMPION. *International Statistics for Governments and Business :* J. ROGERS and J. I. MASON. *Cost Calculations for Sequential Sampling Schemes :* D. G. CHAMPERNOWNE.

The Banker

VOL. CII, NO. 337, FEBRUARY 1954. *Dollar Cloud over Sydney. Britain in a Competitive World. The Malaise in Industrial Relations. Credit Expansion Analysed. The Banks and their Dividends. Death Duties and the Private Company :* G. LEE.

VOL. CII, NO. 338, MARCH 1954. *This Booming Recession. Convertibility —Whose Move Next ? After Randall—An American Assessment :* R. N. GARDNER. *Japan's Challenge in Asian Markets. Sweden's Uneasy Stability. The German Surplus in Perspective :* E. T. NEVIN and H. LOHMANN. *Rule in Turquand's Case : A Reconsideration :* S. G. MAURICE. *The Changing Pattern of Irish Banking. A Prosperous Year for Life Assurance.*

VOL. CII, NO. 339, APRIL 1954. *Budgeting on the Edge. Public Finance and the Welfare State :* A. T. PEACOCK. *Financing East–West Trade. Can France Afford Reflation ? Changing Trends in American Banking. Welsh Industry Takes Stock :* E. V. MORGAN.

The Bankers' Magazine

NO. 1319, FEBRUARY 1954. *Open and Hidden Reserve. Banking Profits in 1953. International Survey :* H. E. EVITT.

NO. 1320, MARCH 1954. *The Future of Sterling. The Bank Balance Sheets. Banking and Economic Conditions in Ireland in 1953. Must Charity be Efficient ? :* D. PALUSTER.

NO. 1321, APRIL 1954. *The Fiscal Morass. The Impact on the British Economy of an American Recession :* H. C. HILLMANN. *A Bundle of Old Documents :* C. E. HICKS.

Barclays Bank Review

VOL. XXIX, NO. 1, FEBRUARY 1954. *The Chairmen's Statements. Banks and the Bank Rate. Freedom for Commodities. Bahrain and Qatar.*

District Bank Review

NO. 109, MARCH 1954. *Canada : Britain's Test :* T. W. KENT. *The Structure and Problems of the Sheffield Cutlery Trade :* H. TOWNSEND. *Two Points of View. The Future of Technological Education.*

Lloyds Bank Review

NO. 32, APRIL 1954. *Some Doubts about Sterling Area Policy :* SIR SYDNEY CAINE. *How Much Agriculture ? :* SIR RALPH ENFIELD. *Air Commerce and Air Power :* M. G. IONIDES.

Midland Bank Review

FEBRUARY 1954. *The Problem of Post-War Credits. The Pattern of Britain's Tariff.*

National Provincial Bank Review

NO. 25, FEBRUARY 1954. *The Steel Industry in 1954 :* SIR ELLIS HUNTER. *Reflections from New York :* W. J. H. HYNER.

The Three Banks Review

NO. 21, MARCH 1954. *The Problem of Living within our Foreign Earnings :* E. A. G. ROBINSON. *U.S. Policy on Synthetic Rubber :* S. WAINWRIGHT. *Mr. Currie Finds New Partners.*

Westminster Bank Review

FEBRUARY 1954. *The Chairman's Statement. Impressions of New England :* G. WALKER. *A Rome View of World Agriculture :* J. KAHANE. *Initial Difficulties. Mechanization and the Small Farmer :* J. O. JONES. *The Trend of our Exports.*

The Journal of the British Institute of Transport

VOL. 25, NO. 8, JANUARY 1954. *The Short Sea Trade :* R. G. GROUT. *Road Transport and the Commercial Motor Manufacturer :* H. SPURRIER. *Transport of Bananas : Plantation to Consumer :* E. R. GOODING. *Transport Charges as a Factor in Inland Transport :* J. R. PIKE. *Transport Finance and Accounting.*

VOL. 25, NO. 9, MARCH 1954. *The Impact of the Gas Turbine on Civil Aviation :* SIR MILES THOMAS. *Transport in the Municipal Field : Problems of the Day :* W. M. LITTLE. *International Inland Transport in Europe : Recent Developments in Organisation :* SIR OSBORNE MANCE. *The Future of our Inland Waterways :* SIR REGINALD HILL.

Planning

VOL. XX, NO. 360, MARCH 1954. *The Price of Road Safety.*
VOL. XX, NO. 361, APRIL 1954. *Graduate Wives.*

Town and Country Planning

VOL. XXIII, NO. 118, FEBRUARY 1954. *No Place is Safe, nor Damned. Ribbon Development : An Old Problem Returns :* P. LAWS. *Manchester's Dispersal Schemes. Planning and Housing in France : II :* F. J. OSBORN. *Land Reclamation in the Black Country :* P. CADBURY. *More about Cement Works :* J. TAYLOR. *Education for Land Planning :* J. S. ALLEN. *Towards a New Surrey ? :* D. WATSON.

VOL. XXIII, NO. 119, MARCH 1954. *A Little Agricultural Arithmetic :* F. J. OSBORN. *Rural Water Supplies :* H. P. KAUFMANN. *What Makes a Community ? :* J. BUTLER. *Level Crossings : The Cost of Waiting :* J. FOSTER. *Who Should Plan the Parishes ? :* W. ARTER and C. A. BAKER. *The Accessibility of Rural Areas. A New Soviet Village :* M. MIKHALCHENKOV. *Forestry and Agriculture : Integration Necessary for Both :* R. BRIDGER.

VOL. XXIII, NO. 120, APRIL 1954. *City Redevelopment and Subsidies. Conservative Town Planning :* F. J. OSBORN. *Canberra seen from Los Angeles :* P. KNOX. *The Means of Social Life :* N. LONGLEY. *The Broad Walk :* R. MORLING. *Slag-heaps into Forests :* D. GUNSTON. *The Scottish Border Counties :* A. MARSHALL. *New Town in Israel :* K. H. BARUTH.

Cartel

VOL. 4, NO. 1, JANUARY 1954. *Danish Monopoly Legislation—the Next Stage:* E. GROES. *The Battle of the Detergents:* R. EVELY. *Agricultural Marketing and the Consumer:* M. TAMPLIN. *Exclusive Dealing in Timber. The Medina Case. Sweden's New Monopoly Law. America's Chemical Giants. Cables in Canada.*

Progress

VOL. 43, NO. 241, WINTER 1953–4. *The Belgian Congo, Before, During, and After the War:* M. R. GODDING. *Sellers' Market for Brains:* E. ASHBY. *Colour in the Factory. Facts and Fancy about Anglo-Dutch Amity:* G. J. RENIER. *Trade Marks and their Protection:* L. A. ELLWOOD. *New Ideas in Industrial Welfare:* P. L. EIDEM. *Guide to the Bank Rate:* R. BRECH. *The Bizarre Bazaar—or "any more Fez Please":* B. HOLLOWOOD. *The Department of Scientific and Industrial Research:* W. G. HINGSTON.

Hard Fibres

NO. 11, DECEMBER 1953. *1953 in Retrospect and Prospects for 1954. The Belgian Cordage Industry.*

Statistical and Economic Review (The United Africa Company)

NO. 13, MARCH 1954. *The Processing, Storage and Transport of Nigerian Palm Oil. Ferries in the Gold Coast.*

The Canadian Journal of Economics and Political Science

VOL. 20, NO. 1, FEBRUARY 1954. *Adaptation of Parliamentary Processes:* J. A. CORRY. *The Vulnerability of the Canadian Economy:* E. A. WALTON. *Canadian Balance of International Payments:* G. S. WATTS. *Problems of Adjustment in Nation Building:* K. A. MACKIRDY. *Fundamentals of the New Italian Constitution:* A. TESAURO. *Measurement of Real Output:* V. R. BERLINGUETTE.

The Economic Record

VOL. XXIX, NO. 57, NOVEMBER 1953. *Richard Charles Mills:* S. J. BUTLIN. *The Beef Industry in Northern Australia:* D. B. WILLIAMS and J. H. KELLY. *Australian Manufacturing and the War of 1914–18:* C. FORSTER. *New South Wales Traders' Protection Association, 1923–44:* G. A. J. SIMPSON-LEE. *The Role of the State in Underdeveloped Areas:* C. GAMBA.

The South African Journal of Economics

VOL. 21, NO. 4, DECEMBER 1953. *Aspects of the Union Government's Income and Expenditure on Loan Account, 1910–1950:* J. JONES. *Some Comments on the Current State of Price Theory:* C. M. F. BRUCE. *The Notion of Money of Constant Value, Part II:* W. H. HUTT. *The Changing Pattern of Britain's Trade and Industry:* S. P. CHAMBERS. *Tobacco Farm Organization, Costs and Land Use in Southern Rhodesia:* W. E. HAVILAND. *The Application of Modern Sampling Methods to Economic and Social Statistics:* B. DE LOOR. *The National Finance Corporation:* P. F. D. WALLIS.

The Union of South Africa Finance and Trade Review

VOL. 1, NO. 4, JANUARY 1954. *Post-war Tendencies on the South African Credit Market:* C. G. W. SCHUMAN. *Import and Foreign Exchange Control in South Africa:* H. W. J. WIJNHOLDS. *South Africa's Tourist Industry:* J. A. H. VAN NIEKERK. *Jan Smuts International Airport:* G. J. ROUX.

The Indian Economic Review

VOL. 1, NO. 4, AUGUST 1953. *Some Aspects of Industrial and Co-operative Development in Under-developed Areas:* F. J. MOORE. *Reorganization of Chinese Agriculture after Land Reform:* B. N. GANGULI. *Static Equilibrium Theories of Saving:* B. R. SHENOY.

The Indian Journal of Economics

VOL. XXXIV, NO. 132, JULY 1953. *Welfare Economics and Welfare Criteria:* B. R. RAIRIKUR. *Productivity: Its Measurement in Indian Industries:* K. V. RAMANA. *Industrial Disputes in India during 1939–51: a Statistical Analysis:* S. A. N. MURTHY. *The Reserve Bank of India and Agricultural Finance:* K. K. SHARMA.

VOL. XXXIV, NO. 133, OCTOBER 1953. *Sales Tax has a History in India:* S. RANJAN SARKAR. *Government Financing of Private Agriculture in Post-war India:* A. K. DATTA GUPTA. *Is Free Trade Based on the Division of Labour?:* T. N. DHAR.

Sankhya

VOL. 12, PART 4, SEPTEMBER 1953. *Some Observations on the Process of Growth of National Income:* P. C. MAHALANOBIS. *The Estimation of Two Parameters from a Sample:* J. B. S. HALDANE. *Sequential Discrimination:* C. L. MALLOWS. *On Transformations Useful in the Distribution Problems of Least Squares:* C. RADHAKRISHNA RAO. *On the Moments of Stochastic Integrals:* A. P. CALDERON and H. B. MANN. *The Economics of One-stage Stratified Sampling:* T. DALENIUS. *On Certain Extended Cases of Double Sampling:* K. C. SEAL. *Significance Level of $\Sigma x^2(\Sigma x^2)$ Based on Student's Distribution:* J. M. SENGUPTA. *Whither Statistics?:* H. SINHA.

Tata Quarterly

VOL. IX, NO. 1, JANUARY 1954. *Basis of Policy Towards Private Industry. Economic and Financial Review October–December 1953.*

Social and Economic Studies

VOL. 2, NO. 4, MARCH 1954. *Kingston Public Passenger Transport:* W. F. MAUNDER. *Labour Demand and Supply in the Jamaican Sugar Industry 1830–1950:* G. E. CUMPER. *Rise of a Peasantry in British Guiana:* R. FARLEY. *The Social Organization of a Selected Community in Jamaica:* Y. COHEN.

International Labour Review

VOL. LXIX, NO. 1, JANUARY 1954. *The Medical Profession and Social Security:* J. DEJARDIN. *Immigration and Indian Policy in Latin American Countries:* V. G. GARCÉS. *Workers' Housing and the Unemployment Problem in Italy: First Results of the Fanfani Plan:* G. PARENTI. *Problems of Women's Employment in Great Britain:* DAME M. SMIETON.

VOL. LXIX, NO. 2, FEBRUARY 1954. *Salaried Employees in Modern Society:* F. CRONER. *The International Classification of Occupations for Migration and Employment Placement:* H. S. CARPENTER. *Some Aspects of Irish Emigration:* J. MEENAN. *The Agrarian Reform in Egypt:* S. MARII.

International Financial Statistics

VOL. VII, NO. 1, JANUARY 1954. *Introductory Notes and Definitions.*

VOL. VII, NO. 2, FEBRUARY 1954. *Transactions of the International Monetary Fund.*

VOL. VII, NO. 3, MARCH 1954. *Statistics for 58 Countries Covering Data Important to the Analysis of the International Payments Problem and the Problem of Inflation.*

International Monetary Fund Staff Papers

VOL. III, NO. 3, FEBRUARY 1954. *Economic Development with Stability:* E. R. SCHLESINGER. *The Long-run Outlook for U.S. Merchandise Imports:* E. R. SCHLESINGER. *The Elasticity of U.S. Import Demand: A Theoretical and Empirical Reappraisal:* T-C. LIU.

Public Finance

VOL. VIII, NO. 4, 1953. *The Shifting of Sales Taxes under Joint Costs :* E. D. FAGAN. *Direct Taxes in Japan and the Shoup Report :* H. ITO. *The Economic Effects of Local Non-Property Taxes :* J. F. DUE. *A Survey of State Budget Agencies :* F. M. LANDERS and H. D. HAMILTON. *The U.S. Federal Debt—a Correction :* U. K. HICKS.

Economia Internazionale

VOL. VI, NO. 1–2, FEBRUARY–MARCH 1953. *Actes du Congrès International pour l'Étude des Problèmes Économiques de la Fédération Européenne.*

VOL. VI, NO. 4, NOVEMBER 1953. *Die allgemeine Problematik der Zinstheorie :* A. AMONN. *Some Observations on the Marginal Utility of Income and on the Equitable Tax :* H. D. DICKINSON. *Aspects politique, économique et social de la réforme de la fiscalité française :* H. A. LAUFENBURGER. *The Problem of Limited Economic Development :* G. M. MEIER.

The Annals of the American Academy of Political and Social Science

VOL. 291, JANUARY 1954. *New Goals in Police Management.*

The Quarterly Journal of Economics

VOL. LXVII, NO. 4, NOVEMBER 1953. *Competition, Monopoly and Countervailing Power :* W. ADAMS. *The Case for Accelerated Depreciation :* E. D. DOMAR. *Classical Theory, Graham's Theory, and Linear Programming in International Trade :* T. M. WHITIN. *Full Capacity* vs. *Full Employment Growth :* H. PILVIN : *Comments :* R. F. HARROD and E. D. DOMAR. *The Retarded Acceptance of the Marginal Utility Theory :* E. KAUDER. *Structural Reform in the British Miners' Union :* G. B. BALDWIN. *Ad Valorem and Unit Taxes Compared :* D. B. SUITS and R. A. MUSGRAVE.

VOL. LXVIII, NO. 1, FEBRUARY 1954. *Concepts of Business Income and their Implementation :* G. O. MAY. *Federal Reserve Policy and the Structure of Interest Rates on Government Securities :* C. E. WALKER. *Unemployment in Planned and Capitalist Economics :* A. R. OXENFELDT and E. VAN DEN HAAG. *Research and Development in the Synthetic Rubber Industry :* R. SOLO. *The Marginal and Average Propensities to Consume :* J. C. HUBBARD. *Location Theory and International and Interregional Trade Theory :* W. ISARD and M. J. PEOK. *Benefits versus Costs of Price Supports :* L. D. HOWELL. *Silhouette Functions of Short-run Cost Behavior :* W. W. COOPER and A. CHARNES.

The Journal of Political Economy

VOL. LXII, NO. 1, FEBRUARY 1954. *The Character of British Colonial Trade :* I. GREAVES. *Collective Bargaining and Decentralization in the Rubber-Tire Industry :* I. SOBEL. *Taxation and the Price Level in the Short Run :* O. H. BROWNLEE. *Expectations and Errors in Forecasting Agricultural Prices :* E. O. HEADY and D. R. KALDOR. *Capital Maintenance and the Concept of Income :* G. F. BREAK. *Business Organization in Baltimore, 1859 :* G. H. EVANS and W. C. KANWISHER.

The Review of Economics and Statistics

VOL. XXXVI, NO. 1, FEBRUARY 1954. *Size Distribution of Income since the Mid-Thirties :* S. GOLDSMITH, G. JASZI, H. KAITZ and M. LIEBENBERG. *Statistical Studies of Unincorporated Business :* L. R. KLEIN and J. MARGOLIS. *A Note on Depreciation, Replacement and Growth :* E. SCHIFF. *Structural Analysis and the Measurement of Demand for Farm Products :* K. A. FOX. *Unionism and Wage–Income Ratios : 1929–51 :* P. A. SULTAN. *A Note on the Volume of Soviet Investment :* A. NOVE. *Sterling Instability and the Postwar Sterling System :* S. I. KATZ. *Some Comments on the "Simultaneous-Equations Approach" :* J. R. MEYER and H. L. MILLER. *The Usefulness of the Factor Cost Concept in National Income Accounting :* J. W. KUHN.

Econometrica

VOL. 22, NO. 1, JANUARY 1954. *Transitivity, Utility, and Aggregation in Preference Patterns :* K. O. MAY. *A Classical Tax-Subsidy Problem :* G. DEBREU. *Exposition of a New Theory on the Measurement of Risk :* D. BERNOULLI. *Some Problems in the Theory of Dynamic Programming :* R. BELLMAN. *On the Programming of Nonlinear Production Functions :* H. NIKAIDO. *Note on the Economic Equilibrium for Nonlinear Models :* N. GEORGESCU-ROEGEN. *L'Utilisation de l'Outil Mathématique en Economique :* M. ALLAIS. *Edgeworth's Taxation Paradox, and the Nature of Demand Functions :* M. J. BAILEY. *The Teaching of Econometrics :* G. TINTNER.

Journal of the American Statistical Association

VOL. 48, NO. 264. *Statistical Problems of the Kinsey Report :* W. G. COCHRAN, F. MOSTELLER and J. W. TUKEY. *The Inventory Problem :* J. LADERMAN, S. B. LITTAUER and L. WEISS. *Census Tracts and Urban Research :* D. L. FOLEY. *On a Probability Mechanism to Attain an Economic Balance between the Resultant Error of Response and the Bias of Non-response :* W. E. DEMING. *Effect of Weighting by Card-duplication on Efficiency of Survey Results :* I. ROSHWALB. *The Mathematical Basis for the Bean Method of Graphic Multiple Correlation :* R. J. FOOTE. *Recent Advances in Finding Best Operating Conditions :* R. L. ANDERSON. *A Note on Regression when there is Extraneous Information about One of the Coefficients :* J. DURBIN. *A Hollerith Technique for the Solution of Normal Equations :* M. J. R. HEALY and G. V. DYKE. *The Use of Runs to Control the Mean in Quality Control :* H. WEILER. *Truncated Poisson Distributions :* P. R. RIDER. *Percentage Points of the Incomplete Beta Function :* R. E. CLARK.

The Journal of Economic History

VOL. XIII, NO. 4, FALL 1953. *Economic and Political Conditions of World Stability :* Q. WRIGHT. *Communications and Trade : The Atlantic in the Seventeenth Century :* B. BAILYN. *Short-Term Economic Fluctuations and the Swedish Timber Industry, 1850–1900 :* E. F. SÖDERLUND. *Land Tenure and Related Sectors of the Balkan Economy, 1600–1800 :* T. STOIANOVICH. *Economic Factors in the Decline of the Byzantine Empire :* P. CHARANIS. *The Witte System in Russia :* T. H. VON LAUE. *The Social and Psychological Setting of Veblen's Economic Theory :* D. RIESMAN. *The Background of Fabian Theory :* J. D. CLARKSON.

Industrial and Labor Relations Review

VOL. 7, NO. 2, JANUARY 1954. *Wage Policies of the WSB : A Symposium. Productivity and Wage Control :* A. M. ROSS. *Cost-of-Living Wage Policy :* B. SOFFER. *Interplant Wage Inequities :* H. G. ROSS and M. ROTHBAUM. *Stabilisation of Internal Wage Rate Structure :* E. R. LIVERNASH. *Stabilisation of Fringe Benefits :* J. C. HILL. *Health, Welfare, and Pension Plans under Wage Stabilisation :* W. J. COHEN. *Social Origins and Occupational Career Patterns :* R. BENDIX, S. M. LIPSET and F. T. MALM. *Reversion to Individualism : The Back-pay Doctrines of the NLRB :* D. J. FARBER. *Cost-of-living Adjustments in Australian Wage Determination :* K. LAFFER. *Mediation or Meddling ? :* A. WEISENFELD.

The Southern Economic Journal

VOL. XX, NO. 3, JANUARY 1954. *Patterns of Economic Development :* B. U. RATCHFORD. *Debt Management and Federal Reserve Credit Policy Since 1945 :* C. H. DONOVAN. *Consumer Expectations and the Consumption Function :* L. FISHMAN. *Congressional Alteration of the Executive Budget :* E. MANSFIELD. *Union Shop Under Taft-Hartley :* J. L. TONER.

Foreign Affairs

VOL. 32, NO. 21, JANUARY 1954. *The Voices of America :* H. M. WRISTON. *Britain and America : Common Aims, Different Opinions :* C. R. ATTLEE. *Revising the Charter :* E. A. GROSS. *Nuclear Weapons : Strategic or Tactical ? :* B. BRODIE. *Radar Defense Today—and Tomorrow :* SIR R. WATSON-WATT. *Agriculture in the Soviet Spotlight :* V. P. TIMOSHENKO. *Middle Ground Between America and Russia : An Indian View. The Meaning of Pan-Americanism :* E. PADILLA. *Making a Friend of Indonesia :* W. H. MALLORY. *Can Apartheid Succeed in South Africa ? :* G. M. CARTER. *Israel's Economic Problems :* G. PATTERSON. *The New German Press :* C. JACOBI.

Explorations in Entrepreneurial History

VOL. VI, NO. 2, DECEMBER 1953. *A Symposium on the Aristocrat in Business. European Aristocracy and Economic Development :* F. REDLICH. *Economic Functions of English Landowners in the Seventeenth and Eighteenth Centuries :* H. J. HABAKKUK. *German Aristocratic Entrepreneurship : Activities of the Holstein Nobility in the Sixteenth and Seventeenth Centuries :* H. KELLENBENZ. *Entrepreneurial Activities of Spanish and Portuguese Noblemen in Medieval Times :* R. KONETZKE. *Armando Sapori on the Economic Function of the Nobility in Italy :* H. G. AITKEN.

VOL. VI, NO. 3, FEBRUARY, 1954. *Some Relationships between Technical Progress and Social Progress :* D. RIESMAN. *Entrepreneurial Activities of the Swedish Aristocracy :* P. G. OHLIN. *Count Istvan Szechenyi (1792–1860) : His Role in the Economic Development of the Danube Basin :* M. S. NICOLSON.

Social Research

VOL. 20, NO. 4, WINTER 1953. *Executive Agreements under the Bricker Amendment :* T. J. DEYRUP. *The New Monetary Policy :* S. WEINTRAUB. *Urban Redevelopment : A New Approach to Urban Reconstruction :* P. A. PFRETZSCHNER. *Chinese Assimilation in Indonesia :* J. M. VAN DER KROEF.

Land Economics

VOL. XXX, NO. 1, FEBRUARY 1954. *Justice for the Farmer and the Rest of Us :* H. C. TAYLOR. *A Critical Evaluation of Land Reform in Italy :* G. GAETANI D'ARAGONA. *Mechanics of the Urban Economic Base : The Problem of Base Measurement :* R. B. ANDREWS. *Reliability of Deed Samples as Indicators of Land Market Activity :* R. L. TONTZ, J. KRISTENSEN and C. C. CABLE. *Economic Citizenship on the Land :* K. H. PARSONS. *Some Aspects of the Rate-of-Return Problems :* E. W. CLEMENS.

Journal of Farm Economics

VOL. XXXVI, NO. 1, FEBRUARY 1954. *The Fragmentation of the BAE :* O. V. WELLS, J. D. BLACK, *et al. Progress Calls for Readjustment :* H. E. ERDMAN. *On Letting Go of the Bear's Tail :* G. K. BRINEGAR and S. JOHNSON. *The Relationship Between the BAE Level-of-Living Indexes and the Average Incomes of Farm Operators :* V. W. RUTTAN. *The Manpower Situation in Southern Agriculture :* L. J. DUCOFF and J. R. MOTHERAL. *A Method of Showing Farmers how to Estimate Gross Income and Marginal Value Products :* L. S. DRAKE. *The Selection of Livestock Enterprises by Activity Analysis :* E. R. SWANSON and K. FOX. *Combating Uncertainty in Agricultural Production :* S. D. STANIFORTH. *British Post-war Policy Towards Farm Mechanisation :* J. W. MELLOR. *Cost Allocation in Relation to Western Water Policies :* S. V. CIRIACY-WANTRUP.

Economic Geography

VOL. 30, NO. 1, JANUARY 1954. *Changing Patterns of Cropland Use in the Middle West :* J. C. WEAVER. *Central Tendency in Areal Distributions :* J. F. HART. *Some Problems of Land Use Survey in Nigeria :* R. M. PROTHERO. *"Jimmy Grants" and "Mihaneres" : New Zealand about 1853 :* K. B. CUMBERLAND.

The Journal of Accountancy

VOL. 97, NO. 1, JANUARY 1954. *Valuation of Shares of Joint Stock Companies :* C. C. CHOKSHI. *Statistical Interpretation of Test Checks :* H. F. STETTLER. *Picking the Best Time to Audit an Account :* P. N. WEHR. *Training Staff in Use of Adding Machine :* W. BROOKE. *What Does it Take to be a Successful CPA ? :* R. E. WITSCHEY. *Auditing Military Subcontract Termination Claims :* J. F. GAITHER.

VOL. 97, NO. 2, FEBRUARY, 1954. *Criteria for Judging Materiality :* S. M. WOOLSEY. *Techniques of Financial Analysis for Management Planning. Taxation of Treasury Stock Dividends :* W. C. MOORE. *Bookkeeping System Built Around Typewriter :* J. J. TUCKER. *Practical Aspects of Inventory Verification :* J. W. THOKEY. *Taxation of Instalment Dealer Finance Reserves :* E. R. DANIELL. *Taxation of Income Resulting from Lease Cancellation :* J. PELTZ.

Revue d'Économie Politique

VOL. 64, NO. 1, JANUARY–FEBRUARY 1954. *Qu'est-ce que la convertibilité monétaire ? :* M. HEILPERIN. *Le comportement des entreprises et certains aspects de l'imprévisibilité :* J. LESOURNE. *Revenus nets des agriculteurs et mobilité de la main-d'œuvre agricole aux États-Unis :* L. GOREUX.

Revue Économique

VOL. V, NO. 1, JANUARY 1954. *Liaisons directes et liaisons inverses entre les revenus dans l'économie américaine contemporaine :* J. LECAILLON. *Productivité et rentabilité :* H. DENIS. *Le nouveau mercantilisme et le déséquilibre Europe—U.S.A. :* P. BAUCHET. *Profession—Revenu—Dépense :* R. A. CHAUFOURNIER. *La situation économique :* L. A. VINCENT.

Économie Appliquée

VOL. VI, NO. 2–3, APRIL–SEPTEMBER 1953. *Léon Walras et Carl Menger à travers leur correspondance :* E. ANTONELLI. *La théorie de la capitalisation chez Walras :* W. JAFFE. *Léon Walras et ses devanciers :* G. LEDUC. *Les différences internationales dans la formation du capital et son financement :* S. KUZNETS. *Une reconstruction de l'analyse des systèmes économiques :* T. SURANYI-UNGER. *Sur la théorie des dépenses publiques :* A. T. PEACOCK. *Planification spécifique et statistiques soviétiques :* H. CHAMBRE. *La redistribution des revenus entre groupes sociaux en 1949 :* G. ROTTIER and J. F. ALBERT.

Journal de la Société de Statistique de Paris

VOL. 94, NOS. 10–11–12, OCTOBER–NOVEMBER–DECEMBER 1953. *Remarques sur la notion de productivité :* R. ROY. *Le contrôle statistique des parités monétaires :* P. GORRA. *Chronique des statistiques bancaires et des questions monétaires :* P. CAUBOUE.

Population

VOL. 8, NO. 4, OCTOBER–DECEMBER 1953. *La population du monde et les besoins en matières premières :* F. TABAH. *L'orientation et la sélection des enfants d'age scolaire dans le département de la Seine :* A. GIRARD. *Sur le nombre des infirmes en France :* S. PICQUENARD and J. SUTTER. *Le problème démographique et racial en Afrique du Sud :* A. SAUVY. *La fécondité des mariages au Japon :* L. HENRY.

Annales de Sciences Économiques Appliquées

VOL. 11, NO. 5, DECEMBER 1953. *Aperçu de la conjoncture économique en Belgique. Le système bancaire belge :* P. BONVOISIN. *Les reviseurs d'entreprises :* C. L. GUERTECHIN. *Le problème de l'or :* H. DELANDE. *Le droit dans l'entreprise :* J. H. VLAEMMINCK.

Bulletin de l'Institut de Recherches Économiques et Sociales

VOL. XX, NO. 1, FEBRUARY 1954. *L'offre en période infra-courte :* A. LAMFALUSSY. *L'épargne des sources de chaleur et d'énergie en Belgique :* J. HEYMANS. *La production d'électricité et la consommation de charbon dans les centrales électriques de Belgique :* S. DECKERS. *Quelques aspects du développement de l'industrie de raffinage du pétrole en Belgique :* A. LAMFALUSSY.

VOL. XX, NO. 2, MARCH 1954. *La conjoncture économique de la Belgique :* M. WOITRIN.

Revue de l'Institut de Sociologie

NO. 2–3, 1953. *L'Evolution des méthodes dans le raisonnement juridique :* J. BELIN-MILLERON. *L'Origine sociale du personnel parlementaire d'un pays essentiellement agraire : la Roumanie :* M. DOGAN. *Les principaux obstacles à l'intégration économique de l'Europe :* E. S. KIRSCHEN. *L'Evolution du droit administratif : Déclin ou renaissance ? :* E. P. SEELDRAYERS. *Enquête sur le sentiment d'autorité en matière linguistique :* E. BUYSSENS. *Les " trusts " de placement :* R. LARCIER.

Institut Universitaire d'Information Sociale et Économique

NO. 6, 1953. *Electeurs et Propagande Électorale :* G. JACQUEMYNS.

Schmollers Jahrbuch

VOL. 74, NO. 1, 1954. *Die Arbeiterfrage heute :* W. ZIMMERMANN. *Die Marktform des unvollständigen Wettbewerbs und ihre wirtschaftsrechtliche Behandlung :* C. E. FISCHER. *Europäische Kartell-politik : Ein Beitrag zur Analyse der wettbewerblichen Dynamik :* K. JUNCKERSTORFF. *Die Herkunft der deutschen Wirtschaftsführer :* F. EULENBURG.

Wirtschaftsdienst (in German with English Air Mail Digest)

VOL. 34, NO. 1, JANUARY 1954. *1954—A Year of Consolidating Our Exports ? :* C. KAPFERER. *What is the Trend of Consumer Goods Sales ? Prerequisites for a Better Social Order :* H. ORTLIEB. *Can Germany's Trade Relations with the Near and Middle East be Stepped up ? :* H. GROSS. *The Cigarette Industry in Federal Germany :* H. MORGENBESSER.

VOL. 34, NO. 2, FEBRUARY 1954. *Re-unification and the German Social Structure. Is there an International Oil Cartel ? :* B. RÖPER. *How to Finance the Maintenance and Expansion of Germany's Arterial Roads :* H. SCHMIDT. *The Toy-making Industry in West Germany :* H. RAUFELDER.

VOL. 34, NO. 3, MARCH 1954. *European Policy on a New Course ? Trieste in its Economic Context :* V. PERTOT. *The Problem of Poverty in Backward Areas :* E. KÜNG. *Waste of Raw Materials as a Means of Maintaining Full Employment ? :* H. BERLITZER. *Problems of Technical Exports :* E. F. SCHMUDE.

Wirtschaft und Statistik

VOL. 6, NO. 1, JANUARY 1954. *Zum Statistischen Arbeitsprogramm 1954 :* K. SZAMEITAT. *Wahlbeteiligung und Stimmabgabe nach Geschlecht und Alter sowie die Art, der Kombination der Erst- und Zweitstimmen :* K. HORSTMANN. *Die industrielle Produktion im Jahr 1953 :* K. WERNER. *Die Gehälter der Angestellten in der Bundesrepublik :* P. DENEFFE. *Die Einkommensverteilung und ihr Zusammenhang mit der Entstehung und Verwendung des Sozialprodukts :* K. H. RAABE.

VOL. 6, NO. 2, FEBRUARY 1954. *Probleme der Gliederung und der Zuordnung auf der Verwendungsseite der Sozialproduktsberechnung :* H. BARTELS. *Die langfristige Entwicklung des Sozialprodukts im Bundesgebiet :* K. H. RAABE. *Das Handwerk im Spiegel der Arbeitsstättenzählung :* H. PFAFF. *Die Belastung des Bruttolohns durch die Lohnsteuer :* H. HEINE.

VOL. 6, NO. 3, MARCH 1954. *Zur Frage der Auskunfts- und Geheimhaltungspflicht in der amtlichen Statistik :* R. BUSCH. *Systeme der Bodennutzung in landwirtschaftlichen Betrieben :* M. RAUTENBERG and J. KRATZER.

Jahrbücher für Nationalökonomie und Statistik

VOL. 166, NO. 1, FEBRUARY 1954. *Fünfzig Jahre britischen Wirtschaftsdenkens 1821–1871 :* W. STARK. *Probability Models in Modern Physics and their Methodological Significance for Social Science :* E. ALTSCHUL and E. BISER.

Jahrbuch für Sozialwissenschaft

VOL. 3, NO. 1, 1952. *Über die Stabilität von Institutionen, besonders Verfassungen : Kulturanthropologische Gedanken zu einem rechtssoziologischen Thema :* H. SCHELSKY. *Das Problem der Marktkonformität wirtschaftspolitischer Mittel :* E. DOHRENDORF.

Zeitschrift für die Gesamte Staatswissenschaft

VOL. 110, NO. 1, 1954. *Der Mensch und die gesellschaftliche Ordnung der Gegenwart :* H. FREYER. *Gewaltanwendung und Gewaltüberwindung als Notwende im Recht : Ein soziologischer Beitrag zur Frage des Friedens :* E. FECHNER. *Eigentum und Enteignung :* K. WIEDENFELD.

Bayern in Zahlen

VOL. 7, NO. 12, DECEMBER 1953. *Konfessionzugehörigkeit der Ehegatten und Kinderzahl :* F. ZOPFY. *Die Altersstruktur der Eheschliessenden in Bayern 1952 :* W. MAIER. *Die Verwendung von Mähdreschern in der bayerischen Landwirtschaft :* J. RAAB. *Zufriedenstellende Entwicklung des bayerischen Spielwarenexports :* J. LEIPNER. *Fremdenverkehr Bayerns im Sommerhalbjahr 1953 :* J. LEIPNER. *Die Verschuldung der bayerischen Gebietskörperschaften Ende März 1953 :* H. ROLAND. *Fremdsprachlicher Unterricht in den bayerischen Schulen :* H. LOHBAUER.

VOL. 8, NO. 1, JANUARY 1954. *Die landsmannschlaftliche Herkunft der Familien in Bayern :* A. VOELCKER. *Die Hackfruchternte 1953 in Bayern :* F. ILLNER. *Die Rauhfutterernte 1953 in Bayern :* J. EICHINGER. *Die Herbstaussaat 1953 in Bayern :* J. RAAB. *Steigender bayerischer Bierexport :* J. LEIPNER. *Camping-Sommer 1953 in Bayern :* J. LEIPNER. *Die Lebenshaltung in Haushaltungen der unteren Verbraucherschicht :* H. SCHMUCKER.

VOL. 8, NO. 2, FEBRUARY 1954. *Die eheliche Fruchtbarkeit nach dem Altersunterschied der Ehepartner :* H. KETTL. *Anbau und Ernte von Zwischenfrüchten im Jahre 1953 :* J. EICHINGER. *Die Gemüseernte 1953 in Bayern :* F. HELLER. *Die Obsternte 1953 in Bayern :* F. ILLNER. *Die Produktion der bayerischen Industrie im Jahre 1953 :* G. BUCHERT. *Die Lage der bayerischen Wirtschaft um die Jahreswende 1953-4 :* H. RANZ. *Warenverkehr Bayerns mit West-Berlin im Jahre 1953 :* J. LEIPNER. *Das Pfandleihgeschäft in Bayern :* R. SCHNEIDER. *Das Geschlecht als Risikofaktor in der sozialen Krankenversicherung.* E. SCHMIDT.

Vierteljahreshefte zur Wirtschaftsforschung

NO. 1, 1954. *Zur konjunkturellen Situation :* H. MARTELL. *Die Ergebnisse der vierteljährlichen Volkswirtschaftlichen Gesamtrechnung für die Bundesrepublik : Viertes Quartal 1953 :* F. GRÜNIG and H. SCHIMMLER. *Rohstoffpolitik :* F. FRIEDENSBURG. *Berechnung eines Produktionsindex für das Westberliner Bauhauptgewerbe :* K. D. ARNDT and R. KRAUSE. *Zur Frage der Verkehrs- und Tarifpolitik :* H. OTTO.

Europa Archiv

VOL. 9, NO. 2, JANUARY 1954. *Atlantikpakt und Europäische Verteidigungsgemeinschaft auf der 12 Tagung des Nordatlantikrates in Paris vom 14 bis 16 Dezember 1953 :* H. VOLLE. *Politik des Reisens ? Eine Untersuchung über die Bedeutung von Auslandsreisen für die Schaffung eines Europabewusstseins : I—Europareisen und Europabewusstsein in der Neuzeit :* W. TREUE. *Die britischen Gewerkschaften als politische Organisationen :* H. KLEBES.

VOL. 9, NO. 3, FEBRUARY 1954. *Die Umstellung der NATO auf eine Politik der "Langen Sicht" :* H. VOLLE. *Die Grundlagen der europäischen Landwirtschaft : Eine Bestandsaufnahme :* F. BELOW.

VOL. 9, NO. 4, FEBRUARY 1954. *Oeffentliche Meinung und auswärtige Politik :* G. F. KENNAN. *Die Grundlagen der europäischen Landwirtschaft : Eine Bestandsaufnahme : II. Teil und Schluss :* F. BELOW.

VOL. 9, NO. 5, MARCH 1954. *Die Veränderungen der Bevölkerung in der sowjetischen Besatzungszone Deutschlands 1939 bis 1953. Wissenschaftspolitik in den Volksdemokratien : Die Prager Akademie der Wissenschaften als Beispiel wissenschaftlicher Gleichschaltung nach sowjetischem Muster :* H. SLAPNICKA.

VOL. 9, NO. 6, MARCH 1954. *Die Auslandhilfegesetzgebung des amerikanischen Kongresses und die europäische Integration :* H. J. STIERINGER. *Der Handel zwischen Asien und Europa : Bericht über eine Untersuchung der Vereinten Nationen :* H. R. HABICHT.

Weltwirtschaftliches Archiv

VOL. 71, NO. 2, 1953. *European Economic Integration : a Realistic Conception :* F. HARTOG. *Volkswirtschaftliche Gesamtrechnungen, National budgets und ökonometrische Gesamtmodelle :* H. KOLMS. *The Optimum Theory of Population :* E. DUNSDORFS. *Die Verantwortung der Betreibsführung für die Anwendung statistischer Methoden in der deutschen Industrie :* W. E. DEMING. *Der kameralistische Geld- und Kreditbegriff :* J. KASNACICH-SCHMID.

Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung

VOL. XXVI, NO. 12, DECEMBER 1953. *Rückblick auf 1953—Ausblick auf 1954. Die wirtschaftliche Lage auf einzelnen Gebieten. Österreichs Handelsverkehr mit Lateinamerika.*

VOL. XXVII, NO. 1, JANUARY 1954. *Die wirtschaftliche Lage in Österreich. Zur Reform der Gewerbesteuer. Erhöhte Milch- und Fleischproduktion bei verringerter Viehhaltung.*

VOL. XXVII, NO. 2, FEBRUARY 1954. *Die wirtschaftliche Lage in Österreich. Gesamtschau der österreichischen Wirtschaft im Jahre 1953.*

Schweizerische Zeitschrift für Volkswirtschaft und Statistik

VOL. 90, NO. 1, MARCH 1954. *Wirtschaftsverbände und Staat :* E. GRUNER. *Aussenpolitik und Aussenhandel :* A. ZEHNDER. *Wirtschafts- und sozialpolitische Probleme einer europäischen Integration :* W. G. HOFFMANN. *Ein schweizerisches Werk zum Problem der Konjunkturschwankungen :* H. BÖHI. *Le hasard dans la recherche scientifique et dans la recherche industrielle :* A. LINDER. *Sociologie d'aujourd'hui :* R. GIROD. *Neue Forschungsergebnisse der Soziologie der Gruppenführung :* P. HEINTZ.

Aussenwirtschaft

VOL. 8, NO. 4, DECEMBER 1953. *Betrachtungen zur Aussenwirtschaftspolitik :* H. BACHMANN, A. BOSSHARDT and F. LÜTOLF. *Langfristige Exportkredite :* E. GSELL and H. ALLENSPACH. *Ökonomische Auswirkungen der politischen Spaltung Europas. Das Postulat flexibler Wechselkurse :* H. BACHMANN.

De Economist

VOL. 101, NO. 1, JANUARY 1954. *Uit de geschiedenis van 's Rijks viottende schuld :* A. M. DE JONG. *Uitbesteding van werk en toelevering :* A. G. TER HENNEPE. *Economische en sociale kroniek :* W. J. VAN DE WOESTIJNE.

VOL. 101, NO. 2, FEBURARY 1954. *Wie voorspelt het best ? :* H. THEIL. *Het mechanisme der economische politiek :* H. A. HOUTHAKKER. *De tegenwoordige gedaante van het Rijnvaart-vraagstuk :* J. J. OYEVAAR. *Opmerkingen en aantekeningen :* M. A. GUPTA.

VOL. 101, NO. 3, MARCH 1954. *Kartels, kartelbeleid en kostprijscalculatie :* F. L. VAN MUISWINKEL. *Economisch-historische aspecten van de ontwikkeling van het veilingwezen in de afzet van Nederlandse agrarische producten :* J. H. VAN STUIJVENBERG. *Economische en sociale kroniek :* W. J. VAN DE WOESTIJNE.

Skandinaviska Banken Quarterly Review

VOL. XXXV, NO. 1, JANUARY 1954. *Convertibility as a Practical Problem :* P. JACOBSSON. *Effective Promotion of European Exports through Export Credits Guarantees :* C. M. WRIGHT. *The Welfare Policy of the Uddeholm Company :* K. ÅKERHIELM.

Giornale degli Economisti e Annali di Economia

VOL. XII, NO. 11–12, NOVEMBER–DECEMBER 1953. *Alcuni Problemi di Equilibrio Monetario :* I. GASPARINI. *Economia Induttiva e Finanza Induttiva :* L. GANGEMI. *Dazi Generali ad Valorem all'Importazione e all'Esportazione : della loro Simmetria con Riferimento anche ad altre Imposte :* G. PARRAVICINI. *Intorno al Metodo degli Intervalli di Confidenza ed alla Teoria dei Testi per Imptesi Statistiche secondo J. Neyman ed E. S. Pearson :* B. COLOMBO.

Review of the Economic Conditions in Italy (Banco di Roma)

VOL. VIII, NO. 1, JANUARY 1954. *Medium-term Export Credit Insurance and Finance :* H. E. C. BRESCIANI TURRONI. *Hydrocarbons in Italy : Natural Gas and Natural Steam in the Italian Economy :* E. MATTEI.

VOL. VIII, NO. 2, MARCH 1954. *Some Aspects of Italy's Balance of Payments :* H. E. C. BRESCIANI TURRONI. *Italy's Balance of Payments : Progress of the Italian Steel Industry :* F. PECO. M. DE VERGOTTINI. *The European Coal and Steel Pool and Italian Economy :* M. VAGLIO.

Banca Nazionale del Lavoro Quarterly Review

VOL. VI, NO. 26, JULY–SEPTEMBER 1953. *The Italian Balance of Payments Problem :* G. CARLI. *Features of the Present Italian Customs Tariff :* C. ZACCHIA. *Some Lines for the Practical Organisation of European Markets :* G. U. PAPI. *The Dollar and Gold :* P. BAFFI.

Italian Affairs

VOL. III, NO. 1, JANUARY 1954. *The Truth about Trieste. Italy at the End of the War. Italian Politics. Industry and Trade. Reconstruction of Land and Air Transport Services. The Laws of the Italian State.*

VOL. III, NO. 2, MARCH 1954. *Italy and the Free Territory of Trieste. The Slav Language Groups in Italy. Alto Adige and Italy. The New Economic Policy : Land Reform in Italy. The Southern Italy Fund. The Ina-Casa Plan.*

Critica Economica

NO. 5, OCTOBER 1953. *Nostro Paese. Considerazioni sull'emigrazione italiana :* I. BARBADORO and L. RAMPAZZO.

NO. 6, DECEMBER 1953. *Aspetti della politica finanziaria dal 1947 ad oggi :* E. PEGGIO.

NO. 1, FEBRUARY 1954. *Nostro Paese. La crisi di una politica economica :* R. MANZOCCHI. *Alcuni problemi del credito alle imprese artigiane :* G. COPPA.

L'Industria

NO. 4, 1953. *Che cos'è la probabilità ? :* R. CARNAP. *La programmazione lineare della produzione nell'impresa :* B. GIARDINA. *Analisi sequenziale della correlazione nelle variabili normali :* B. COLOMBO. *Lo sviluppo industriale delle regioni meridionali e l'attività della Cassa per il Mezzogiorno :* P. SARACENO.

Il Risparmio

VOL. I, NO. 7, NOVEMBER 1953. *Credito agrario e politica economica :* D. MENICHELLA. *Orientamenti essenziali a lunga dei saggi di interesse e di rendimento in Italia e all'estero :* G. DEMARIA. *L'origine, le vicende e l'attuale sistemazione dell'area della sterlina :* G. CASTELLINO. *Considerazioni circa la possibilità di snellire l'istruttoria legale delle pratiche di mutuo con garanzia immobiliare :* G. DI CARLO.

VOL. I, NO. 8, DECEMBER 1953. *Un saggio provvedimento finanziario :* G. DELL'AMORE. *Considerazioni sull'aspetto finanziario della politica :* E. FOSSATI. *Fiscalità, parafiscalità e risparmio :* B. GUÉMAS. *La Casse di Risparmio pubbliche della Germania occidentale dopo la riforma monetaria del 1948 :* F. UNVERZAGT.

VOL. II, NO. 1, JANUARY 1954. *Contributo alla teoria dello sviluppo delle aree depresse :* F. CHESSA. *L'azienda agricola familiare nel quadro dei mercati europei :* P. HADLÉ. *Reddito e profitto nel sistema tributario italiano :* A. GIORGETTI.

Nationalekonomisk Tidsskrift

VOL. 91, NO. 5, 1953. *The Structure of Employment Theory :* HANS BREMS. The author constructs a complicated dynamic four-sector model where production capacity, investment and stocks as well as the level of employment are endogenous. The equilibrium rate of growth is shown to be unstable. *Bilateral Monopoly in International Trade :* BJARKE FOG. A survey of the largely geometric discussion of the last decade on tariffs and welfare. The author concludes that the incompleteness of the analysis does not permit him to draw conclusions except to underline that free trade does not come about automatically ! *Some Remarks on the Monnet Plan :* J. VIBE PEDERSEN. A critical survey.

VOL. 91, NO. 6, 1953. *Old Age Pensions :* JØRGEN DICH. *Discussion of a plan put forward by the Social Democrats. Structural Changes in Danish Agriculture during the past twenty years :* P. DØSSING. *Restraint of Competition and Monopoly Control :* H. WINDING PEDERSEN.. Discussion of proposals for legislation made in a report by the Monopolies Commission.

The Annals of the Hitotsubashi Academy

VOL. IV, NO. 1, OCTOBER 1953. *The Nature of Small Industries :* T. YAMANAKA. *Taxation and Capital Accumulation :* M. KIMURA. *The Development of Managerial Accounting in Japan :* M. MATSUMOTO. *Japan's Reception of the Law of Nations :* Z. OHIRA. *The Independence of Executive Power in Relation with Judicial Power :* J. TAGAMI.

The Economic Review (in Japanese)

VOL. 5, NO. 1, JANUARY 1954. *On the Input-Output Analysis of Interindustrial Relations :* H. IEMOTO. *On a Measurement of a Leontief System :* I. YAMADA. *Problems of Economic Geography :* H. SATO. *Japan's Industrial Structure and Capital Coefficient :* M. SINOHARA, M. UMEMURA and T. NODA.

Statisztikai Szemle (Hungarian Text)

NOVEMBER 1953. *Questions of the Definition of the Gross Production of Industrial Enterprises :* N. LYUBIMOV. *Statistical Analysis of the Quality of Goods Turnover :* G. PÁRNICZKY. *On the Present System of Construction Estimates :* I. ABONYI. *Methods of Computation of Labour Productivity Index Numbers in the Cotton Textiles Industry :* V. GORELKIN. *On the Indices of Work-period Utilisation and Group Work Coefficients :* V. KARDEVÁN.

DECEMBER 1953. *The Work of Regional Administrations in 1953. The History of the Evolution of Statistics in Hungary : the Life and Work of Ladislas Németh (1770–1806) :* I. MÉSZÁROS. *From Experience in the Analysis of the Cost of Production in Building :* V. BELKIN. *The Calculation of Materials Input for Unfinished Production in the Motor Vehicle Industry :* J. HOSSÚ. *Some Problems of the Food Industry :* E. KÖVESD.

Urbanisation and Municipal Finance : J. KOVACSICS. *For the More Rapid Implementation of the Government Programme on Housing Statistics :* O. KEREKES.

Voprosy Ekonomiki

NO. 11, 1953. *A Steep Rise in the Material Prosperity of the Soviet People. The Communist Party in the Struggle for the Foundation and Development of a Socialist Economy :* I. SHIRINSKY. *On Increasing the Profitability of Agricultural Production :* L. GREKULOV. *The Organizational and Economic Strengthening of Collective Farms :* A. KARAVAEV. *Problems in the Theory of National Income in Capitalist Society :* A. PALSTEV. *On Economic Assistance to Underdeveloped Countries :* L. FITUNI. *The Post-war "Land Reform" and the Decline of Japanese Agriculture :* YA. GUZEVTY. *Economic Consequences of U.S. Militarisation :* I. GLAGOLEV.

NO. 1, 1954. *The All-victorious Power of Lenin's Ideas. V. I. Lenin on the Principle of Material Incentives under Socialism :* P. BELOV. *The Indissoluble Friendship of the Russian and Ukrainian Peoples :* D. VIRNYK. *The Role of Transport in the Expansion of Agriculture in the U.S.S.R. :* T. KHATATURov. *Successes of the Chinese Peoples' Republic in Strengthening and Developing their Finances :* B. BOLDYREV. *The Korean People in the Struggle to Restore their Economy, Peace and National Unity :* G. KIM. *Features of the Imminent Economic Crisis in the U.S.A. in Conditions of Militarization :* YA. KRONROD. *Particularities of the Problem of Markets in Capitalist Countries and the Prospects for International Trade :* G. ROGINSKI.

NO. 2, 1954. *The Decisions of the September Plenum of the Communist Party of the Soviet Union and the Tasks of Economics in the Sphere of Agriculture :* I. LAPTEV. *The Economic, Political and Cultural Reasons for the Union of the Ukraine with Russia :* D. MYSHKO. *On Material Incentives for Collective Farms and Farmers in the Development of Communal Farming :* A. BOLGOV. *The Experience of the "12 October" Collective Farm :* P. MALININA. *The Development of the Collective Sector of the Budënny Collective Farm :* M. POSMITNY. *The Function of the Financial System in the Distribution of the National Income of the U.S.S.R. :* D. ALLAKHVERDYAN. *The Productive Capacity of Industrial Enterprises and the Methodological Basis of its Computation :* M. FEDOROVICH. *Apologia of Inflation in Modern Bourgeois Economics :* E. BREGEL.

Planovoe Khozyaistvo (Russian Text)

NO. 6, 1953. *A Steep Rise in the Production of Consumer Goods. The Programme for the Expansion of Output and the Improvement of Quality of Food Products :* M. PARSHIKOV. *The Development of Production and the Improvement in the Quality of Consumer Goods :* A. KALPOVSKY. *The Upsurge of Livestock Breeding—the Most Urgent Task in Agriculture :* M. GORODSKY. *The Means to Expand Production of Industrial Crops :* A. KOVAL. *Questions of the Development of Housing and Communal Building :* I. IVANOV. *Militarisation and the Rise of Contradictions in the Capitalist Economies :* E. SHERSHNEV. *Planning the Material and Technical Supply of Industrial Enterprises :* N. FASOLYAK.

NO. 1, 1954. *Thirty Years Without Lenin—On Lenin's Road. The Prosperous Economy and Culture of the Uzbek S.S.S.R. :* G. ONISHCHENKO. *The Expansion of Accumulation in Socialist Agriculture :* E. SOLLERTINSKAYA. *The Progress of Consumer Good Production in Local and Co-operative Industry :* V. MACHIKHIN. *Increase the Production of Equipment for Light Industry :* A. DOMITEEV. *Fundamental Tasks for the Building Materials Industry :* N. VOLOSATOV and S. KAGANOV.

Vestnik Statistiki (Russian Text)

NO. 5, 1953. *The Programme for the Further Development and Powerful Upsurge of Agriculture. The State Budget of the Soviet Union :* L. SKVORTSOV. *Determine and Utilise Reserves for the Lowering of Produc-*

tion Costs in Building : K. VINOGRADOV. *Some Problems of the Definition of the Volume of Gross Engineering Output Based on Operational Accounting Data :* B. VLASOV. *Improve the Preparation of Specialist Statisticians in Technical Institutes :* A. LUTSENKO. *From the History of Russian Industrial Statistics :* L. ROZOVSKY. *The Rise in the Economy and the Prosperity of the Workers in the European Popular Democracies :* F. KONSTANTINOV.

No. 6, 1953. *The Concern of the Party and Government for the People's Welfare. Tasks of Agricultural Statistics in the Near Future :* V. MANYAKIN. *The New Tasks of Soviet Trade Statistics :* S. PARTIGUL. *Eminent Russian Statisticians of the Second Half of the XIX Century :* S. OSTROVMOV. *The Law of Averages in Statistics :* B. YASTREMSKY. *Successes of Chinese Economic Construction :* A. MARTYNOV. *The Census of Bakeries on 1 January 1954.*

Finansy i Kredit S.S.S.R. (Russian Text)

No. 11, 1953. *The Thirty-sixth Anniversary of the October Revolution. The Anxiety of the Party and Government for the People's Welfare. The Further Development of the Economy and the Establishment of the State Budget of the U.S.S.R. for 1954 :* G. DUNDUKOV and N. KISMAN. *Reduce Overhead Expenses in Capital Construction :* P. PODSHIVALENKO. *The Upsurge of Agriculture and Agricultural Credits :* S. NOSYREV. *Problems in M.T.S. Finance :* B. GINSBURG. *Reserves for Lowering Production Costs in the Coal Industry :* P. MOROZOV. *Non-cash Accounting and Control by the Rouble :* B. KRICHEVSKY. *The Budget and Social and Cultural Construction in Lithuania :* M. YUKELSON. *Finance and Credit in the Service of the Economic Upsurge of Czechoslovakia :* V. KOMISSAROV.

No. 12, 1953. *Struggle Tirelessly for the Lowering of Production Costs. Credit-finance and Accounting in Agriculture :* A. IVANOV. *Credit and Accounting Services to the Consumer Goods Industries :* I. BARKOVSKY. *Raise the Quality of Intradepartmental Financial Control :* D. ALENCHIKOV. *Conduct State Insurance Operations in an Organised Manner :* B. BARANOV. *Improve the System of Circulating Capital and Credit Finance in the Meat Industry :* G. SEREBRYANY. *An Improvement of Services to Depositors is the Most Important Task of Savings Banks :* A. LYSKOVICH. *Analysis of the Production Cost of Industrial Goods :* A. GOLOVTSOV.

No. 1, 1954. *The Analysis of Annual Accounts is an Important Instrument of Financial Control. Improve the Operations of Finance Institutions and Banks in Financing Agriculture :* A. ZVEREV. *Money and Its Functions in a Socialist Economy :* YA. KRONROD. *Current Practice in Trade Credits :* V. USHAKOV. *For an Organised Administration of the Agricultural Tax in 1954 :* D. BURMISTROV. *Methods for Improving Accounting and Operating Technique in the State Banks :* K. NAZARKIN. *Current Problems of Savings Bank Operations :* A. DUNENCHUK and A. BILENKO. *The British Budget in the Service of Capitalist Monopolies :* S. BORISOV.

No. 2, 1954. *Improve the Quality of Bank Operations and Long-term Investment. The Budget and Economic-Cultural Construction of the Uzbek S.S.R. :* N. SHCHETININ. *The Role of the State Budget in the Development of the Socialist Economy :* A. BACHURIN. *Accelerate the Putting into Operation of Basic Capital :* V. ROBOTOV. *Ways to Improve Insurance Work :* I. DROZDKOV. *Credit and Accounts in the Timber Industry :* S. VOROBEV. *Against Groundless Refusals of Acceptance :* S. ALEKSEEV.

Probleme Economice (Rumanian Text)

VOL. VI, No. 7–8 JULY–AUGUST 1953. *The Ninth Anniversary of the Liberation of Our Country :* GH. GHEORGHIU-DEJ. *A Fighting Economic Journal. The Development of Light Industry, an Important Factor for the Constant Increase of the Workers' Living Standards :* G. KÖPICH and C. SIGLER. *For Economies in the Use of Metal Necessary for the Socialist Industrialisation of Our Country :* V. GHIOCEL. *The Strengthening of*

Permanent Production Brigades in Collective Farms : V. TOPOR. *The Strengthening of Documentation and Statistics in Rumania :* I. FERENBAC. *The U.S.S.R. State Budget for 1953 :* C. NICULCEANU. *The National Income and Its Utilization in Socialist Society :* I. MALYSHEV. *The Aggravation of the Pauperisation of the Workers in Capitalist Countries :* F. LUPU. *The Capitalist Economies in 1952. The Development of Agriculture in Bulgaria on the Way to Socialism :* E. ANGHEL. *Turkey—a Demi-colony of American Imperialism :* B. SERBAN.

VOL. VI, No. 9–10, SEPTEMBER–OCTOBER 1953. *The Tasks of the Engineering Industry in the Production of Tools and Machines for the Consumer Goods Industries and Agriculture :* S. PETRESCU. *The Role of Local Industry in Increasing the Production of Consumer Goods :* N. STERN. *The Organisation and Payment of Workers in State Farms :* N. DONDERA and I. STANCIU. *The Great Programme of Development for Soviet Agriculture :* E. PRAHOVEANU. *Great China in Full Construction :* M. MIHAIL. *The Work of Regional Planning Commissions :* M. URINSON. *The Conference of Regional Planning Officers of the State Planning Commission :* N. WEINTRAUB.

Plánované Hospodářství (Czech Text)

NOS. 9–10, 1953. *Government Statement by Mr. Široky on 15 September 1953. Government Decision on the Basic Tasks of Economic Policy in the Near Future. The Fundamental Tasks of Supply Workers in Engineering :* K. POLÁČEK. *New Technology in House Building :* V. MICHAL. *The Monetary Reform and the Beginning of the Systematic Reduction of Prices in Czechoslovakia :* K. ROZSYPAL. *For a Better Utilisation of Agricultural Land :* M. PEJŠA and J. MATOUŠEK. *For an Improvement in Organisation and Planning in Collective Farms :* V. PROŠEK. *The New Organisation of State Arbitration :* J. SLEZÁK.

No. 11, 1953. *Economies and Improved Utilisation of Fuel in Czechoslovakia :* K. MATOUŠ. *Maximum Exploitation of Foundries :* F. VESELY. *Steadily Decrease Norms for the Input of Materials, Fuel and Power :* G. ZHUKOV.

No. 12, 1953. *The Definition of Productive Capacity and Its Utilization in Industry :* J. STANOK. *Collective Contracts in Factories Under the Technical-Financial Plan :* A. ZÁMECNIK. *The Production Plan of a Collective Farm :* V. CHALUPAŸ.

No. 1, 1954. *Speech of J. Uhr on the Further Development of Agriculture. Speech of J. Krasnár on Agricultural Procurement. Some Problems of Establishing the Production-Financial Plan in the State Economy :* V. JAVUREK. *The Capital Investment Plan and Its Objects :* K. SEKOMSKI. *For an Improvement in Statistical Reporting :* F. HERBST.

No. 2, 1954. *The 1954 Czechoslovak State Plan. Speech of the Chairman of the State Planning Commission, J. Půčik, to the National Assembly on 20 January 1954. Commerical Production in Agriculture under Capitalism and under Popular Democracy :* F. STOČES. *The Militarisation of Western Germany is Aggravating the Contradictions of Imperialism :* A. NUOŠKA. *The Investment Plan and its Objects :* K. SECOMSKI.

Gospodarka Planowa (Polish Text)

No. 1, 1954. *The New Tasks of Our Periodical. Regional Planning and the Economic Expansion of Underdeveloped Areas :* K. DZIEWOŃSKI. *Repair Services in the 1954 Plan :* K. SECOMSKI. *For a More Rapid Development of the Artificial Fertilizer Industry :* A. RADLIŃSKI. *Intra-factory Planning in Tobacco Mills :* J. BRYDA and H. DOMAŃSKI. *The Continual Increase of Labour Productivity under Socialist Production :* M. YAMPOLSKY. *The Socialist World Market and Long Term Planning :* M. RAKOWSKI. *Some Questions in Planning Production Cost Decreases in Industry :* Z. AUGUSTOWSKI. *On the Proper Planning of Scientific Research :* W. ŚWIEŻEWSKA.

No. 2, 1954. *Current Problems of Technical Progress :* E. SZYR. *The Maximization of Productive Capacity Use :* B. BALIŃSKI. *The New Tasks of the Agricultural Engineering Industry :* J. DRZEWIECKI. *The*

Tasks of Consumer Co-operatives in Meeting Rural Demand : J. MARECKI. *The Expansion of Production and the Purchase of Domestic Raw Materials for Consumer Goods Industries :* W. PLOŃSKI. *The 1954 Building Repairs Plan :* M. SOCHA. *The Improvement of Economic Work in Local Planning Commissions :* Y. CHADAEV. *Questions of the Development of Housing and Communal Building :* I. IVANOV. *Agriculture in the Peoples' Democracies and in Capitalist Countries :* J. WERNER. *The Economic Achievements of China :* J. SZEWIEJA. *U.S. Discrimination in Latin America :* L. GÓRNIK.

Ekonomist (Serb Text)

No. 1, 1953. *The Problem of Surplus Rural Population :* N. COBELJIĆ and K. MIHAILOVIĆ. *Two Systems of Viability in Our Economic Enterprises :* K. VASILJEVIĆ. *The 1953 Economic Plan :* B. J. COPPER. *Production in Serbia :* E. BERKOVIĆ. *The British Economy at the Crossroads :* V. MILENKOVIĆ and M. HUBENI. *Industrial and Mining Investment in Serbia in 1947–51 :* V. PEJOVSKI. *An Inquiry in Rural Wood Consumption in Serbia :* B. BABIĆ. *Economists of the XVII and XVIII Centuries:* B. SOSKIĆ. *Joan Robinson and the Economics of Imperfect Competition :* P. MIHAILOVIĆ.

No. 2, 1953. *The Structure of the Population :* M. MACURA. *Certain Questions of the Development of Our Economic System :* J. RADOKOVIĆ. *Oligarchic Tendencies on the Foreign Exchange Market :* V. PERTOT. *The Serbo-Bulgarian Customs Union of 1905 :* C. KOSTIĆ. *The Index of Industrial Production :* M. NIKOLIĆ. *Some Considerations on the Fuel Problem in Yugoslavia :* N. DRAGIĆEVIĆ. *The Development of Railways in Yugoslavia :* M. STEFANOVIĆ.

No. 3, 1953. *Boris Kidrič :* V. BEGOVIĆ. *Certain Principles of Our Economic System and the Problem of their Application :* R. UVALIĆ. *Concerning My Article on the Law of Value :* A. BAJT. *The World Market and the Increasing Importance of Economic Intercourse :* D. TODOROVIĆ. *The Nature and Future of the Common Market for Coal and Steel :* V. MILENKOVIĆ. *Methods of Calculating the Volume of Foreign Trade and the Balance of Trade :* M. PEROVIĆ. *Handicrafts in the New Economic Conditions :* S. BLAGOJEVIĆ. *Goods–Money Relationships and the Vojvodina Market in 1952 :* M. M. STEVAN. *Postwar British Agriculture :* P. MIHAILOVIĆ.

No. 4, 1953. *The Credit System Under the Draft Economic Regulations :* K. VISILJEVIĆ. *The Economic Unit and the Theory of Marginal Value :* M. SAMARDŽIJA. *Problems of Monetary Circulation and the Volume of Money :* M. VUCKOVIĆ. *The Economy and the General Plan for Urban Development :* P. IVANDEKIĆ. *Changes in Employment in Yugoslavia Between 1945 and 1952 and Prospects for the Future :* I. LAH. *A Contribution to the Discussion on Planning :* B. SABLJIĆ.

No. 5, 1953. *The Economic Functions of the Commune :* D. J. *The Judicial Aspect of the Draft Law on the Management of the Basic Funds of Economic Organisations :* A. GAMS. *Incentives to Workers through Self-management :* S. KUKOLEČA. *Survey of the Principles of the Draft Law on Commercial Activity :* S. DUROVIĆ. *Problems of Economic Development in Underdeveloped Countries :* L. MATES.

No. 6, 1953. *Peasant Purchasing Power Before and Since the War :* D. COBELIĆ. *Some Observations on the Present Day Capitalist Enterprise :* K. MITRESKI. *The Draft Industrial Plan for Yugoslavia for 1954 :* R. NIKETIĆ.

Izvestia na Vishia Finansovo-Stopanski Institut (Bulgarian Text, Russian and German Summaries)

VOL. VI, No. 4. *The Concept of Insurance :* V. GAVRISKI. *The Maximisation of Profits in U.S. Industrial Monopolies :* CH. BEYAZOV. *The Unified Budget and the Building of Socialism in Our Country :* R. ANGELOV. *The Development of Savings in Bulgaria :* M. RUSENOV.

NEW BOOKS

British

ALLEN (G. C.) and DONNITHORNE (A. G.). Western Enterprise in Far Eastern Economic Development. China and Japan. London : Allen & Unwin, 1954. 9″. Pp. 292. 20*s*.

[To be reviewed.]

ALLEN (V. L.). Power in Trade Unions. A study of their organization in Great Britain. London : Longmans, 1954. 9″. Pp. 323. 25*s*.

[To be reviewed.]

AMERY (L. S.). A Balanced Economy. London : Hutchinson, 1954. 9″. Pp. 263. 12*s*. 6*d*.

[To be reviewed.]

CARTER (C. F.), MEREDITH (G. P.) and SHACKLE (G. L. S.) (Eds.). Uncertainty and Business Decisions, a Symposium. Liverpool : Liverpool University Press, 1954. 9″. Pp. 104. 10*s*. 6*d*.

[To be reviewed.]

CHAUNDY (T. W.), BARRETT (P. R.) and BATEY (C.). The Printing of Mathematics. Aids for authors and editors and rules for compositors and readers at the University Press, Oxford. London : Oxford University Press, 1954. 9½″. Pp. v + 105. 15*s*.

[This book is intended primarily to help a printer : it publishes, among other things, the rules for the composition of mathematics at the Oxford University Press. But it includes sixteen invaluable sections of recommendations to mathematical authors, and an appendix on legible handwriting which any editor who has struggled with the customary confusions in authors' manuscripts between Greek " *v*'s " and italic Roman " *v*'s " will heartily endorse. The book begins with the necessary minimum of information about the mechanics of printing, and especially mathematical printing. It goes on to explain what can and what cannot readily be set by the usual Monotype machine and the ways in which the difficulties of printing can be increased or diminished by alternative representations of exactly the same material. Authors who are frequently concerned in the preparation of mathematical articles will find this book of considerable help to them.]

CARTER (C. F.) and ROY (A. D.). British Economic Statistics. A report. National Institute of Economic Research, Economic and Social Studies, No. XIV. London : Cambridge University Press, 1954. 9½″. Pp. 118. 21*s*.

[To be reviewed.]

DAY (A. C. L.). The Future of Sterling. London : Oxford University Press, 1954. 7½″. Pp. v + 227. 12*s*. 6*d*.

[To be reviewed.]

The Economic Future of Europe. Preliminary papers of the Second Conference of Westminster 1954 organized by the European Movement. London : André Deutsch, 1954. 9″. Pp. 188. 15*s*.

[These eight rather miscellaneous papers are all concerned more or less closely with the consequences of moving towards European economic unification. The monetary, institutional and social aspects of the question are among the topics discussed, and two long descriptive papers are also included on recent developments and prospects with regard to production and investment.]

FFORDE (J. S.). The Federal Reserve System 1945–1949. London: Oxford University Press, 1954. 8½″. Pp. vii + 351. 35*s*.

[To be reviewed.]

GRONDONA (L. ST. C.). Commonwealth Stocktaking. London: Butterworth, 1953. 10″. Pp. v + 389. 35*s*.

[To be reviewed.]

HAWTREY (R. G.). Towards the Rescue of Sterling. London: Longmans, 1954. 7½″. Pp. 159. 12*s*. 6*d*.

[To be reviewed.]

HAYNES (W. W.). Nationalization in Practice: The British Coal Industry. London: Bailey Bros. and Swinfen, 1953. 8½″. Pp. v + 413. 32*s*.

[To be reviewed.]

Industry and Science. A study of their relationship based on a survey of firms in the Greater Manchester area carried out by the Manchester Joint Research Council, 1950–1953. Manchester: Manchester University Press, 1954. 9″. Pp. 188. 12*s*. 6*d*.

[To be reviewed.]

KALECKI (M.). Theory of Economic Dynamics. An essay on cyclical and long-run changes in capitalist economy. London: Allen & Unwin, 1954. 9″. Pp. 178. 18*s*.

[To be reviewed.]

KOCHAN (L.). Russia and the Weimar Republic. Cambridge: Bowes & Bowes, 1954. 8½″. Pp. vii + 190. 25*s*.

[This scholarly and well-written monograph provides an extremely interesting analysis of the varying relations between Soviet Russia and Germany in the years from 1919 to 1934. It has a topical interest which stands out very plainly, even though the author does not choose to spell it out explicitly. The basis of the alliance represented by the 1922 Treaty of Rapallo was twofold: Germany needed a Russian alliance to strengthen her hand in attempts to secure a revision of Versailles, while the friendship or at least neutrality of Germany provided Russia with the assurance that she would not be faced with a united bloc of hostile capitalist countries. The result of the alliance which the Russians did not foresee was that German strength was helped to grow to the point where Germany instead of the Entente became the danger against which Russia was obliged to seek a counter-weight. The author casts some interesting light also on issues of domestic policy: for example, the strength of Communist hostility to the German Social Democrats is traced in large part to the Western orientation of the latter, which threatened to bring about a *rapprochement* between Germany and the victors of Versailles and so bring to an end the disunity amongst capitalist countries which the Russians felt to be essential to their security.]

MCCULLOCH (J. R.) (Ed.). Early English Tracts on Commerce. A reprint of the very rare collection of tracts prepared in 1856 for the Political Economy Club. London: Cambridge University Press, 1954. 9″. Pp. 663. 35*s*.

[McCulloch's collection of Tracts was first published in 1856 in an edition of a hundred copies for the Political Economy Club. The present edition was reprinted photographically in 1952 for the Economic History Society from a copy which had passed into the possession of Montagu Norman, Governor of the Bank of England, from his father and grandfather, a founder-member of the Club. The Economic History Society has now made the new edition generally available to teachers and students.]

MACKENZIE (SIR C.). Realms of Silver. One hundred years of banking in the east. London: Routledge & Kegan Paul, 1954. 10″. Pp. v + 338. 25*s*.

[To be reviewed.]

MATTHEWS (R. C. O.). A Study in Trade-Cycle History. Economic fluctuations in Great Britain 1833–42. London: Cambridge University Press, 1954. 9½″. Pp. xiii + 228. 25*s*.

[To be reviewed.]

NATIONAL INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH. Annual Report 1953. London: The National Institute of Economic and Social Research, 1953. 9½″. Pp. 43.

[Admirably full descriptions are given of the research currently in progress or projected, including the work done by the Institute in connection with the government's Conditional Aid Economic Research Programme.]

PARKER (R. S.) (Ed.). Economic Stability in New Zealand. Wellington: New Zealand Institute of Public Administration, 1953. 9″. Pp. 146. 13*s*. 6*d*.

[To be reviewed.]

PEACOCK (A. T.) (Ed.). Income Redistribution and Social Policy. A set of studies. London: Jonathan Cape, 1954. 9″. Pp. 296. 25*s*.

[To be reviewed.]

Proceedings of the Eighth International Conference of Agricultural Economists. London: Oxford University Press, 1954. 9″. Pp. v + 608. 42*s*.

[This impressive volume records the proceedings of the Conference held at Michigan State College in 1952. The twenty-four papers cover a wide variety of topics. Among those to which particular attention is given are the economics of population and food supply (discussed in papers by F. W. Notestein, J. D. Black and S. R. Sen), agricultural development in less advanced areas (papers by K. Brandt, J. R. Raeburn and M. Ezekiel and A. Saco) and national agricultural policies (papers by E. G. Nourse and E. M. H. Lloyd).]

RICHARDSON (J. H.). An Introduction to the Study of Industrial Relations. London: Allen & Unwin, 1954. 9″. Pp. 442. 30*s*.

[To be reviewed.]

RIX (M. S.). Stock Market Economics. A text-book on the economics of marketable securities in this country. London: Pitman, 1954. 9″. Pp. v + 284. 25*s*.

[To be reviewed.]

ROBERTSON (SIR DENNIS). Britain in the World Economy. The Page-Barbour Lectures for 1953 at the University of Virginia. London: Allen & Unwin, 1954. 8″. Pp. 92. 7*s*. 6*d*.

[To be reviewed.]

STONE (J. R. N.) assisted by ROWE (D. A.) and by CORLETT (W. J.), HURSTFIELD (R.) and POTTER (M.). The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom 1920–1938. Studies in the National Income and Expenditure of the United Kingdom, No. I. London: Cambridge University Press, 1954. 12½″. Pp. vii + 448. 105*s*.

[Reviewed by Professor R. G. D. Allen in the March issue.]

THOMAS (BRINLEY). Migration and Economic Growth. A study of Great Britain and the Atlantic economy. National Institute of Economic and Social Research, Economic and Social Studies, XII. London: Cambridge University Press, 1954. 9½". Pp. v + 362. 42*s*.

[To be reviewed.]

TUSTIN (A.). The Mechanism of Economic Systems. London: Heinemann, 1954. 9". Pp. v + 161. 25*s*.

[To be reviewed.]

TWYMAN (F.). Some New Proposals for the amelioration of the Balance of Payment Position. Published privately, copies obtainable from the author, 41 Tavistock Court, Tavistock Square, London, W.C.1. 8½". Pp. 16.

[The author criticises certain aspects of the policy of the Coalition and Labour Governments and assesses the extent to which alternative policies which he proposes would be capable of alleviating our economic problems. His three chief suggestions are the requisitioning of factories engaged in the production of non-essentials, the optional substitution of apprenticeship combined with part-time education in place of full-time education for juveniles aged fourteen to sixteen and the encouragement of industrial investment on the part of those who at present waste their money on gambling.]

Indian

DANDEKAR (V. M. and K.). Survey of Fertility and Mortality in Poona District. Gokhale Institute of Politics and Economics, Publication No. 27. Poona: Gokhale Institute of Politics and Economics, 1953. 9½". Pp. 191. 7*s*. 6*d*.

[This survey, conducted with a grant from the Rockefeller Foundation, was principally designed to throw light on differential fertility in Indian conditions. More detailed analysis than had been applied in earlier investigations in Poona and in Kohlapur revealed "some difference in fertility as between castes and between economic classes. It is at the same time clear that this difference in fertility is not very marked. It may be that we have here a situation wherein the transition to new conditions is being only slowly revealed in the total mass of statistics." The authors suggest that there are signs of the emergence of new conditions, more similar to those in western industrialised countries. An ambitious inquiry into family planning yielded most interesting results. Dr. Gadgil's view, expressed in a Foreword, is that "there exists no important element in the socio-economic framework or in the ideological make-up of the people which would make progress impossible if a movement towards family planning is launched appropriately."]

HOUGH (E. M.). The Co-operative Movement in India, before Partition and in Independent India. Third enlarged edition. Calcutta: Oxford University Press, 1954. 9". Pp. vii + 435. 25*s*.

[This is a third edition of a new well known standard authority on the subject. The first edition was reviewed by Professor Findlay Shirras in the ECONOMIC JOURNAL of June 1933; the second edition was noted in the issue of March 1951. The new edition has been prepared by Shri K. Madhava Das, of the staff of the Reserve Bank of India, who has provided a final chapter of some thirty pages in which he surveys the recent trends of the various types of co-operative activity. He sees plenty of opportunities for detailed improvement. He stresses that "the movement constitutes, either actually or potentially, the most important institutional agency for the provision of rural credit." But he emphasises also that in view of the importance attached to a planned programme of development, "it is very necessary to strike a note of caution against the dangers of hasty expansion leading to the neglect of sound banking principles in the anxiety to implement the planned programme."]

VIVEK. India Without Illusions. Bombay: New Book Co., 1953. 9". Pp. 216. Rs. 4/4.

[The pseudonym of Vivek conceals the lively personality of Mr. A. D. Gorwala, whose interesting small book, *The Rôle of the Administrator, Past, Present and Future*, was noted in this JOURNAL in June 1953. The present volume contains reprints of some of the weekly articles which he has contributed between December 1950 and June 1953 to the *Times of India*. They re-read much better than most similar articles succeed in doing. They cover a wide range of topics. First come a series on foreign affairs, with groups on Communism, on China and on relations with the various great powers. An English reader may perhaps be forgiven for finding special pleasure in what the author wrote about "this remarkable transformation of old enmity into new amity" on Coronation Day. A group deal with internal problems—Communist pressures, integrity in public office, the future of the Princes, the failure of prohibition and so on. A final group discuss economic problems—population increase, food scarcity, economic planning, taxation and the like. Throughout one is doubly impressed by the author's judgment and wisdom and by his knack of saying the right thing in the right words.]

American

BAKKEN (H. H.). Theory of Markets and Marketing. Madison, Wisconsin: Mimir Publishers, 1953. 9½". Pp. 362.

["The author's intention in this book is to present in broad outlines a general theory of the evolution of market institutions. . . . His objective is sought in what may be considered an unorthodox manner by calling into play a combination of disciplines such as economic history, law and institutional economics." Thus he prefers an institutional approach. ("The institution is a generic concept applied to the whole framework of socio-economic and legal relationships involved in a system of transactional economics.") The result seems a curious mixture which many readers will find irritatingly discursive. Modern markets and marketing are confined to organised produce markets. The sketch history in Chapter V of the development of the Chicago Grain Market seems to open the way for an economic study of organised speculation, but instead the following chapters are entitled "Legality of Futures Trading" and "The Concept of Futurity." Chapter VIII, "The Law of the Markets," is occupied by a discussion of Say's Law, and the next three chapters contain somewhat rambling disquisitions on "Perfect Market Concepts," "Just Price and Fair Value" and "Industry Pricing." This comprises Part I, "Theoretical Bases"; Part II is composed of three chapters on "Primitive and Tribal Trade," "The Era of Pagan Commerce" and "Medieval Fairs"—chapters which seem oddly unrelated to each other or to Part I. It may be that this book will be useful to students in the United States; it is doubtful whether many English readers will appreciate it.]

BECKER (J. M.). The Problem of Abuse in Unemployment Benefits. A study in limits. New York: Columbia University Press (London: Geoffrey Cumberlege), 1954. 9½". Pp. xv + 412. 52*s*.

[This work is based on a study of American experience during the reconversion period 1945–47, when the problem of abuse of unemployment benefits might be expected to have been most acute. While one of the author's chief contentions is that the information currently available is inadequate to show the extent of abuse, he concludes *with some confidence* that the comparative liberality of the system, based as it is on a "status" rather than a "subsistence" *norm*, did not during the period have any significant effect in hampering the reconversion process or in diminishing employment.]

BRANDT (K.) in collaboration with O. SCHILLER and F. AHLGRIMM. Management of Agriculture and Food in the German-Occupied and Other Areas of Fortress Europe. A study in military government. Stanford University Food Research Institute Series on Food, Agriculture, and World War II. Stanford, California: Stanford University Press (London: Geoffrey Cumberlege), 1954. 9½". Pp. ix + 707. 80*s*.

[To be reviewed.]

BRINEGAR (G. K.) and JOHNSON (S.). The Market for Fluid Skim Milk. Storrs, Connecticut: Storrs Agricultural Experiment Station, University of Connecticut, 1953. 9″. Pp. 43.

[This is based on a general survey of sales of skim milk throughout the United States and a more detailed survey of sales in Connecticut. Sales of skim milk have shown a very strong upward trend in recent years. The authors' computations indicate that the demand is very elastic (a price-elasticity of −4·0 is found), and they suggest that a reduction in prices would be beneficial to dealers and dairy farmers, as well as to consumers.]

THE BROOKINGS INSTITUTION. Major Problems of United States Foreign Policy 1954. Washington: The Brookings Institution, 1954. 9½″. Pp. v + 429. $4.

[This follows the usual lines of the Brookings Institution's annual surveys. While not on the whole distinguished for originality or analytical flair, it provides a comprehensive and convenient source of reference on the arguments currently canvassed in the United States in the various fields of foreign policy. It contains also some useful and objective historical sections, summarising the background of present-day problems.]

COCHRAN (T. C.). Railroad Leaders 1845–1890. The business mind in action. Cambridge, Mass: Harvard University Press (London: Geoffrey Cumberlege), 1953. 9½″. Pp. 564. 60*s*.

[To be reviewed.]

CONFERENCE OF NEW ENGLAND GOVERNORS. Report on the New England Textile Industry. Cambridge, Mass.: Conference of New England Governors, 1953. 10″. Pp. v + 317. $2.

[The decline of the New England textile industry is of interest to the British reader because of the unhappy similarity between New England and Lancashire, and the contrast with the newer and more progressive textile regions. The bulk of this report, prepared by a Committee appointed in 1952 at the time of the textile recess, with Professor Seymour Harris as Chairman, is taken up by a research study for which Professor Harris is solely responsible. The agreed report of the Committee was largely based on that study, which brings together a great deal of extremely interesting material on all aspects of the United States industry, though it contains little that is new to those familiar with Professor Harris's *The Economics of New England*, reviewed in the ECONOMIC JOURNAL of December 1953. The striking fact which emerges is the narrowing of the wage differential between South and North from 63 to 92·5% since the beginning of the century. This belies the conclusion that the major explanation of New England's decline is the large differential. That in spite of this narrowing of the margin New England lost ground would seem to be due to the fast-growing productive efficiency of the South. The other interesting fact which emerges is that at present it is the woollen and worsted industry of New England, rather than the cotton textile industry, that is threatened by the more efficient competition of the South. The recommendations for action are neither impressive nor progressive. While there are various suggestions for making New England more efficient, there seems to be equal emphasis on making the South a similarly high-cost producer. And to keep out foreign competition, it is recommended that tariffs on textile products be not reduced.]

DEARBORN (DEW. C.), KNEZNEK (R. M.) and ANTHONY (R. N.). Spending for Industrial Research, 1951–1952. Boston, Mass.: Division of Research, Harvard Graduate School of Business Administration, 1953. 11″. Pp. iii + 103. $2.50.

[This records the results of three separate surveys, covering respectively 4,800, 1,450 and 191 companies. It is estimated that the total cost of research carried out or financed by industrial firms in the United States in 1951 amounted to some $2,500 million. The detailed tables analyse this expenditure by industry group, size of firm, purpose of research and other categories.]

FRIEDMAN (M.). Essays in Positive Economics. Chicago: University of Chicago Press (London: Cambridge University Press), 1954. 9½″. Pp. v + 328. 43*s*. 6*d*.

[To be reviewed.]

HICKMAN (W. B.). The Volume of Corporate Bond Financing since 1900. National Bureau of Economic Research, Financial Research Program, Studies in Corporate Bond Financing, No. I. Princeton, New Jersey: Princeton University Press, 1953 (London: Geoffrey Cumberlege, 1954). 9½″. Pp. xi + 429. 60*s*.

[To be reviewed.]

HULTGREN (T.) assisted by W. I. GREENWALD. Transport and the State of Trade in Britain. National Bureau of Economic Research, Occasional Paper No. 40. New York: National Bureau of Economic Research, 1953. 9″. Pp. ix + 114. $1.50.

[This Occasional Paper in the National Bureau series is of more specialised interest than would appear from the title. It is designed as a contribution to the Burns–Mitchell analysis of trade-cycle histories. It examines the fluctuations of the carriage of goods and passengers by the railways and their capital investment and renewals in relation to the Burns–Mitchell "reference" cycles. The analysis is thorough and elaborate, but in presentation at least the authors go little below the surface of the statistics, and after a time a reader familiar with the period will ask himself whether they have taken full account of factors other than cyclical which were at work. In general, cycles in railway traffic corresponded with the cycles of business; the authors adduce evidence to suggest that the railways lost part of their share of the carriage of heavy goods other than coal to other means of transport during a contraction and regained it during an expansion; but during the twenty's and thirty's the latter slowed up the process of diversion rather than reversed it. Down to 1912 passenger travel increased annually, with the exception of three individual years, when the decline was almost negligible. After 1919 cyclical variations were more apparent, following closely the "reference" cycles. As might be expected, equipment was not appreciably changed in total over the cycle: it was used more or less intensively, and expansion tended to mean heavier truck-loads and train-loads but slower movement. Maintenance of track was more stable than traffic. Purchases of locomotives and rolling stock varied with the cycle, and roughly to the same extent; fluctuations of traffic were not translated into exaggerated fluctuations of equipment, and delays in production from time to time implied that investment was actually counter-cyclical.]

Institutions and Individuals. An annotated list of directories useful in international administration. Compiled by Katrine R. C. Greene. Chicago: Public Administration Clearing House, 1954. (Distributed outside the U.S.A. and Canada by Martinus Nijhoff, The Hague). 11″. Pp. 56. $2.80 or 10.75 guilders.

[An annotated list of over 200 directories and other works of reference is preceded by an introduction containing useful hints on how to use the list and the directories enumerated in it. It is suggested that the chief value of the list will be to public servants working outside their own countries.]

KYRK (H.). The Family in the American Economy. Chicago: University of Chicago Press (London: Cambridge University Press), 1954. 9½″. Pp. v + 407. 45*s*.

[The scope of this unusual text-book is defined as the economics of family life in the United States. The chief topics included are the structure of the family, the size, sources and adequacy of family incomes, the cost of living, social security and other supplements to current earnings, the division of labour and economic relations between members of the family, and what Wesley Mitchell called "the backward art of spending money." The author writes in a clear style, and much of what she has to say is interesting and suggestive.]

LAMBIE (J. T.) and CLEMENCE (R. V.) (Eds.). Economic Change in America. Readings in the economic history of the United States. Harrisburg, Pennsylvania: The Stackpole Company, 1954. 9″. Pp. iii + 599. $5.75.

[To be reviewed.]

MCLEAN (J. G.) and HAIGH (R. W.). The Growth of Integrated Oil Companies. Boston, Mass.: Harvard Graduate School of Business Administration, 1954. 11½″. Pp. vii + 728. $12.

[To be reviewed.]

MALENBAUM (W.). The World Wheat Economy 1885–1939. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1954. 8½″. Pp. vii + 262. 48*s*.

[To be reviewed.]

MILLIKAN (M. F.) (Ed.). Income Stabilization for a Developing Democracy. A study of the politics and economics of high employment without inflation. New Haven, Conn.: Yale University Press, 1953 (London: Geoffrey Cumberlege, 1954). 9″. Pp. v + 730. 40*s*.

[The editor of this symposium confesses in an unusually candid preface that, in his judgment, only limited success attended the strenuous efforts that were made by himself and his contributors to form the various chapters into a unified whole by means of continual oral and written consultation. It is true that the contributors—the majority of whom are connected with Yale University—retain their individual standpoints. The editor is to be congratulated, however, on his success in avoiding overlapping and in so providing a comprehensive survey of current American opinion on different aspects of the problem of income stabilisation in the light of post-war experience. The contributions are not for the most part very profound or original, but the standard of competence is high and the volume as a whole is extremely suitable for recommendation to undergraduate students.]

PHELPS (C. W.). Instalment Sales Financing: Its Services to the Dealer. Baltimore: Commercial Credit Company, 1953. 9″. Pp. 99.

[This is a sequel to the same author's earlier publication, *The Role of the Sales Finance Companies in the American Economy*, which was noted on p. 254 of the ECONOMIC JOURNAL of March 1953. The author describes the procedure by which sales finance companies provide credit to facilitate the distribution of automobiles and other consumer durables all the way from the factory to the consumer. He contrasts favourably this system of integrated finance—as practised, for example, by the Commercial Credit Company, which sponsors and publishes his monograph—with the system of direct loans to consumers, which is adopted by other types of loan company.]

PHILIPP (P. F.). Diversified Agriculture of Hawaii. An economist's view of its history, present status, and future prospects. Honolulu, Hawaii: University of Hawaii Press, 1953. 8½″. Pp. 226. $3.75.

[This is a detailed factual study of the agricultural industries of the Hawaiian islands, excluding the two staples, sugar and pineapples. In the author's opinion, the development of a more diversified agriculture is essential to strengthen the islands' economy and to surmount the problems that confront it. The chief of these problems are an adverse balance of payments, a tendency to increasing unemployment and excessive vulnerability to a depression in the United States.]

THE RUSSELL SAGE FOUNDATION. Annual Report 1952–1953. New York: Russell Sage Foundation, 1954. 9″. Pp. 59.

[The chief field of the Foundation's research, as described in this report, lies in social work, especially social medicine. Research activities are carried out directly by the Foundation.]

SMITH (A. H.). Economics for our Times. Second edition revised. New York & London: McGraw-Hill, 1953. 9″. Pp. vii + 534. 29*s*.

[This is a revised edition of an extremely elementary and mainly descriptive introduction to economics, designed for use by American high school students. It is profusely illustrated with photographs, cartoons and diagrams of varying degrees of relevance.]

SOCIAL SCIENCE RESEARCH COUNCIL. Annual Report 1952–3. New York: Social Science Research Council, 1954. 9″. Pp. 78.

[This gives particulars of the membership and activities of the thirty or so committees on different branches of the social sciences through which the Council operates. The President's report reviews more general aspects of the Council's work. "It sees its functions as those of planning, stimulating, and initiating research rather than conducting projects that can be done more appropriately by other organisations."]

SPENCER (L.) and JOHNSON (S.). Milk Distribution and Pricing in Great Britain, with special attention to the British experience with rationalization plans. Ithaca, N.Y.: Cornell University Agricultural Experiment Station, 1953. 9″. Pp. 147.

[The chief purpose of this analysis of milk distribution in Britain between 1938 and 1952 is to cast light on the analogous problems that arise in the United States. The authors have undertaken extensive field work in this country, and they present a clear and competent historical survey. Particular attention is paid to the unified system of collecting milk from farms and to the zoning system in urban delivery. The authors find that both these systems enjoyed a large measure of success, and they are inclined to regard as a mistake the withdrawal of official support from the zoning system in 1948. Both systems might, they suggest, be capable of bringing about substantial economies if applied in the United States, though considerable opposition would be likely to stand in the way of their acceptance.]

Swedish

THE CENTRAL ORGANISATION OF ACADEMICS IN SWEDEN. Academic Trade Unions in Sweden. Stockholm: Sveriges Akademikers Central-organisation, 1953. 8½″. Pp. 20.

["Academic" trade unions in Sweden are those that cater for university graduates, *i.e.*, the professions. At the beginning of the 1940s salary scales in certain of the professions were extremely low, especially in the starting grades, and the development of professional organisations since then has brought about a marked improvement. The Central Organisation of Academics, by which the present pamphlet is issued, is a federation of these organisations.]

Italian

EINAUDI (L.). Saggi Bibliografici e Storici intorno alle Dottrine Economiche. Rome: Edizioni di Storia e Letteratura, 1953. 10″. Pp. 367. Lire 4,000.

[To be reviewed.]

Polish

LANGE (O.). Zagadnienia Ekonomii Politycznej. Warsaw: Panstwowe Wydawnictwo Naukowe, 1953. 7½″. Pp. 160.

[To be reviewed.]

Japanese

SCIENCE COUNCIL OF JAPAN. The Japan Annual of Law and Politics. No. 2, 1953. Tokyo: Second Division, Science Council of Japan, 1953. 10″. Pp. 210.

[This contains nine essays by Japanese scholars, six translated into English, two into German and one into French. Of these essays, that by Isao Kikuchi on "Freedom of Association and Unfair Labour Practices" is the only one that is directly connected with economics.]

Official

BRITISH

INTERDEPARTMENTAL COMMITTEE ON SOCIAL AND ECONOMIC RESEARCH. Guides to Official Sources: III. Local Government Statistics. London: H.M. Stationery Office, 1953. 9½″. Pp. 34. 1*s*. 6*d*.

[Like its two predecessors in the series, this booklet is more than a mere list. The sources described cover both historical and current statistics, and the notes on the coverage of the material are extremely informative. A useful feature is the inclusion of warnings as to the limitations of the available figures and the errors that are liable to arise from incautious use of them, especially for purposes of historical comparison.]

MINISTRY OF FOOD. Domestic Food Consumption and Expenditure, 1951. Annual Report of the National Food Survey Committee. London: H.M. Stationery Office, 1954. 9½″. Pp. 116. 3*s*. 6*d*.

[Reviewed in this issue.]

PREST (A. R.) and STEWART (I. G.). The National Income of Nigeria 1950–51. Colonial Research Studies, No. 11. London: H.M. Stationery Office, for the Colonial Office, 1954. 9½″. Pp. iii + 124. 8*s*. 6*d*.

[To be reviewed.]

AUSTRALIAN

The Queensland Year Book 1952. Brisbane: Government Statistician's Office, 1953. 8½″. Pp. 429. 5*s*.

[This issue of the *Yearbook* contains the usual wealth of statistical and descriptive information.]

CANADIAN

COMBINES INVESTIGATION COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. Electrical Wire and Cable Products. Report of H. Carl Goldenberg, Q.C., Special Commissioner, of an investigation into an alleged combine in the manufacture, distribution and sale of Electrical Wire and Cable Products. Ottawa: Department of Justice, 1953. 11″. Pp. 246.

[Much of this report is taken up with verbatim quotations from evidence given in the course of the investigation. In his conclusions, the Special Commissioner finds that the nine companies which together account for practically the whole of the output of the industry have entered into agreements to fix prices and conditions of sale in such a way as unduly to prevent or lessen competition. The various arguments advanced in defence by the companies—that price uniformity was the result of the homogeneity of the product, or, alternatively, of price-leadership, rather than of collusion, that prices and profits were reasonable, etc.—are dismissed as either untenable or else irrelevant under the terms of the *Combines Investigation Act*.]

INTERNATIONAL

GILBERT (M.) and KRAVIS (I. B.). An International Comparison of National Products and the Purchasing Power of Currencies. A study of the United States, the United Kingdom, France, Germany and Italy. Paris: Organisation for European Economic Co-operation, 1954. 9½″. Pp. 203.

[To be reviewed.]

UNITED NATIONS. Commodity Trade and Economic Development. Submitted by a Committee appointed by the Secretary-General. New York: United Nations Department of Economic Affairs, 1953. 9″. Pp. v + 102. 5*s*.

[To be reviewed.]

UNITED NATIONS. Economic Survey of Europe in 1953, including a Study of Economic Development in Southern Europe. Prepared by the Research and Planning Division of the Economic Commission for Europe. Geneva: United Nations Department of Economic Affairs, 1954. 11″. Pp. 314. 17*s*. 6*d*.

[To be reviewed.]

UNITED NATIONS. International Migration Statistics. Organisation and Operation, Recommended Standards, Sampling. New York: Statistical Office of the United Nations, 1953. 10½″. Pp. 25. 1*s*. 9*d*.

[This contains discussion and recommendations relating to the collection and processing of migration statistics, together with information on the use of sampling for purposes of collection or tabulation.]

UNITED NATIONS. A Short International Bibliography of Public Administration. New York: United Nations Department of Public Information, 1953. 11″. Pp. 20. 2*s*.

[This bibliography seeks to cover all aspects of the study of government as usually understood, together with certain topics somewhat outside that scope, such as education and the organisation of transport and public utilities. It is therefore inevitably highly selective, and its main usefulness will be as a starting-point to readers unfamiliar with the subject.]

UNITED NATIONS. A Study of Trade between Asia and Europe. Prepared by the Secretariats of the Economic Commission for Asia and the Far East, the Economic Commission for Europe and the Food and Agriculture Organization of the United Nations. Geneva: United Nations Department of Economic Affairs, 1953. 11″. Pp. 146. 11*s*.

[This elaborate and important survey contains a detailed comparison of the structure of trade between Europe and Asia in recent years with the structure prevailing in the 1920s and 1930s, together with a discussion of future prospects. The volume of Europe's imports from Asia (excluding Japan) has fallen by about a quarter since before the war, chiefly on account of a decline in Asian production. The authors suggest that the "traditional" multilateral pattern of payments between Asia, the United Kingdom, and Continental Europe and the United States, as established in the 1920s, has now disappeared for good, and that new and different means of adjustment must be found. One promising possibility is thought to lie in a shift of European imports of raw materials from dollar sources to Asia.]

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL. Competition Between Steel and Aluminium. Geneva: United Nations Economic Commission for Europe, 1954. 11″. Pp. 155. 9*s*.

[This is the first of a projected series of studies dealing with competition between steel and other materials. Part I of the study consists of a historical survey of world production and trade in aluminium. Since the beginning of the

century, world aluminium production has increased by about 10% per annum, a rate of growth similar to that of world steel production between 1880 and 1910. About half of total aluminium consumption is at present in direct competition with steel, but only a small part of world steel consumption is affected by competition from aluminium. The study analyses in detail competition between the metals in Europe in the five industries chiefly affected, railways, motor vehicles, shipbuilding, packaging and construction, and household equipment.]

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL. The European Steel Market in 1953. Geneva: United Nations Economic Commission for Europe, 1954. 11". Pp. 100. 5s.

[1953 was the first year since the war in which there was a general tendency for the supply of steel to exceed the demand. The consequent problems affected particularly the countries comprising the European Coal and Steel Community. Steel production in these countries fell or failed to rise in 1953, whereas production in the United States, Great Britain and the Soviet Union continued to expand. Notwithstanding this, internal prices in France as well as in Britain rose slightly during the year, and the fall in prices in Germany was not great. Export prices, however, fell sharply. The authors find that both transitory and longer-term causes contributed to bringing about these developments. It would in their view be most unfortunate if current reverses led to the conclusion that the industry should adjust itself permanently to a lower level of demand. Instead, they suggest various means by which the steel industry should participate more actively in efforts to maintain and stimulate demand for steel, both in existing uses and in new ones.]

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL. Some Important Developments During 1953 in Iron and Steel Technology. Geneva: United Nations Economic Commission for Europe, 1954. 11". Pp. 35. 1s. 9d.

[This paper is based on articles that have appeared in technical journals and on a number of special communications. It is divided into three parts, relating to pig-iron production, steel-making, and rolling and finishing processes. The use of oxygen in steel-making is thought to be perhaps the most important current line of advance, but some economic significance may also attach to the recent development of efficient small-capacity blast-furnaces, suitable for use in less advanced countries.]

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION. World List of Social Science Periodicals. Paris: UNESCO, 1953. (Obtainable in U.K. from H.M. Stationery Office). 9½". Pp. 161. 9s. 6d.

[This useful new reference book contains information relating to some 700 current periodicals. The basic particulars on each journal (length and format, place and frequency of publication, names of editors, etc.) are supplemented by short but extremely informative notes on its scope. On brief inspection, the standard of accuracy appears to be very high. The only possible criticism is that the particulars given do not include prices.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION. The World Food Problem. The mission of FAO. Rome: FAO, 1953. 8½". Pp. 21.

[The author provides an outline analysis of the prospects for increasing world production in pace with the probable rise of population. He enumerates the technical and economic obstacles to the expansion of food production, and then goes on to describe the contribution made by FAO towards overcoming these obstacles.]

UNITED NATIONS TECHNICAL ASSISTANCE ADMINISTRATION. Balance of Payments of Libya. Prepared for the Government of Libya by S. KIRKOR. New York: United Nations Department of Public Information, 1953. 10½". Pp. 25. 2s.

[This is designed as a supplement to the previous United Nations publication *A General Economic Appraisal of Libya*, which was noted in the ECONOMIC JOURNAL, June 1953, p. 523. It is based on statistics available in August 1951.]

STATE LEGISLATURE, MADRAS

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THE CHANGING STRUCTURE OF THE BRITISH ECONOMY[1]

THE dynamic development of the economy of any nation derives from a two-fold process of adjustment: it derives in part from a constantly continuing adjustment to technological progress; in part from adjustment to the changes in the quantities and distribution of resources of materials and skills possessed both by the particular nation and by other nations. There emerges from these adjustments superimposed upon its own past history the structure of that particular economy at that moment of time. The structure often reflects only imperfectly the needs of the moment, for economic structures change slowly, and it is only in a period of relatively slow change that the actual structure and the ideal structure are likely to be identical. It is the changes in the structure of the United Kingdom's economy during the past two or three centuries, and particularly during the past hundred years or so, that I wish here to review very briefly. For we live in a period when large and more than usually rapid structural adjustment is both needed and taking place. I believe that the problems that confront us to-day are more easily understood if we see them in the perspective of the changes of structure that have occurred in the past.

The essential features of any nation's economic structure are made up of the pattern of employment and activity, the pattern of export and import, and the pattern of consumption. These patterns are in their turns related to and derived from the available resources, both natural and, as in the case of skills, acquired and inherited from an industrial tradition.

It is normal to think of the economic structure of any one nation as greatly influenced by the abundance of certain resources and by deficiencies of others. At the beginning of the eighteenth century it was still true to say that the pattern of the British economy derived in large measure from our ability to export the

[1] Presidential Address to Section F of the British Association, delivered at its meeting in Oxford, September 1954.

indigenous products of which we had a surplus. Of the £3·6 million or thereabouts of exports of produce and manufactures of the United Kingdom, for the year 1688, about £2 million represented woollen manufactures, and most of the rest represented exports of coal, lead, tin and other indigenous products. It was quite late in the nineteenth century that there developed the complexities of our structure, whereby we import not only the materials required for our exporting industries, but also the greater part of the food needed to maintain our population.

May I begin, then, with the structure of 1688, when Gregory King, Lancaster Herald of Arms, made the study of *The State and Condition of England* which is the starting point for all modern macro-economic investigation? England, with a population which King puts at 5,500,000, had an income which, slightly adjusted to bring it into line with current definitions, may be put at about £50 million. Retained imports, which he estimates at £2·8 million, were approximately 5½%, therefore, of national income.

Of a total of personal expenditure which amounts to about £46 million, approximately 51% was estimated to be spent on food and 25% on clothing. Of the food consumed, a very small proportion, mainly composed of tropical produce and wines, would seem to have been imported. Down to about 1730, England was an exporter rather than importer of grain. The proportion of man-power resources devoted to agriculture cannot be estimated with any certainty from King's figures.[1] The proportion of gross national product estimated by him to be derived from agriculture is about 40%, and the proportion of man-power employed in agriculture must clearly have been at least of that order of magnitude, and probably considerably greater.[2]

Thus at the beginning of the eighteenth century we have a structure that is still predominantly self-sufficient, whose imports are primarily manufactures and the produce of other climates, whose exports are based on the utilisation of plentiful indigenous resources, and whose man-power is primarily devoted to agriculture, and which provided a level of real consumption per head a little under half of that of 1925–34.

[1] If one is prepared to regard his categories of "labouring people and outservants" and "cottagers and paupers" as primarily agricultural the proportion would be as high as 75%. If, as seems likely, the first of these categories is intended to include most of the unskilled labour in the towns (artisans and handicrafts are elsewhere included), and both of them a certain amount of domestic industry, the proportion might be nearer to 65%.

[2] In 1691 Sir William Petty commented, "There is much more to be gained by Manufacture than Husbandry; and by Merchandise than Manufacture" (quoted by C. Clark, *Conditions of Economic Progress*, 2nd Edition, p. 395).

I wish that one could find an opportunity for comparisons in the middle of the eighteenth century. It is sad to have to say that the century of English economic history which is of greatest potential interest, in that it saw the largely unexplained acceleration from the slower processes of earlier centuries to the rapid cumulative progress of the past two hundred years, is also the century that is completely lacking in estimates of national income and of the other main bench-marks to which one can refer such other statistical information as we possess.[1]

The earliest date after 1688 at which we can again attempt to see the main features of our economic structure is around 1800–12. The various estimates of Beeke, Levi, Colquhoun, none of them individually wholly complete or internally consistent, nonetheless give us a sufficient basis from which to calculate rather imprecisely the essential elements of the contemporary structure. The national income of the United Kingdom was probably about £400 million at prices of 1812. Retained imports, affected by war, were fluctuating in the range at current prices of £40 million to £80 million,[2] with a mean at prices of 1812 of about £49 million. Thus the import ratio would appear to have become something of the order of 12%. That is about the figure also for 1820, and it is from about 1820 that the data begin to accumulate from which one can see the main changes in the essential features of the structure in a peace-time economy.

In the years between 1820 and 1830, then, the structure of the United Kingdom had already begun to alter in many essentials. Exports were composed now only to the extent of about 50% of indigenous products of the United Kingdom and manufactures made from them; woollen manufactures accounted for a little under

[1] I believe that it is worth trying, even now, to see whether this deficiency cannot be remedied. We have greatly developed in the past twenty-five years the arts of establishing the orders of magnitude of the national incomes of backward countries by the ingenious use of many individual clues to establish the totals of incomes, production and expenditure and to permit estimates of each of these to be employed as a cross check on the others. It is by no means clear that sufficient data do not exist to enable us to do much the same for the eighteenth and early nineteenth centuries, basing oneself in part in the latter case upon some of the rudimentary and internally inconsistent estimates made at the time. I am delighted that Miss Deane, of the Department of Applied Economics at Cambridge, is exploring these possibilities in connection with Dr. Simon Kuznets' big international project for the measurement of economic progress.

[2] As revalued from official values to current values by Professor A. H. Imlah, "Real Values in British Foreign Trade, 1798–1853," *Journal of Economic History*, November 1948, pp. 148–9.

12%, and coal for about 1%; cotton manufactures accounted for about 48% of the whole, textile manufactures of all sorts to about 67% and manufactures of all kinds to about 90%. On the other side of the account, in consequence, imports of materials were also about 60% of the whole, out of which textiles materials, mainly cotton, accounted for about 24%. Retained imports of food, drink and tobacco were equal to about £20 million at actual values, and may be compared with a production of about £120 million in agriculture; thus foreign supplies of food represented something of the order of one-seventh of total supplies. The Census of 1821 gives us some limited help in seeing how the occupied population was employed: in England and Wales, about 34% (a figure close to that of France before the last war) are reported as employed in agriculture and fishing; about 46·5% were engaged in trade, manufactures and handicraft; the remaining 19·5% were accounted for by all other forms of services and employments. Thus the economy had already moved a long way from the pattern of 1688. It had no longer in anything like the same degree as then the features that we now associate with an "underdeveloped country": the relatively large proportion of population engaged in agriculture or engaged in the trading and handicrafts associated with it; the chief imports composed of manufactures and chief exports of primary products (that feature had largely disappeared before 1750). But the structure was still a long way from that which developed later in the century.

By 1850 we are beginning to see more clearly the features of what most of us were brought up to regard as the timeless characteristics of the British economy. The import ratio had now risen to about 18%. Exports are composed to the extent of over 90% of manufactures; textiles still predominate and account for about 63% of total exports; woollens 14%, cottons 40% and the rest mainly linen. Imports are still largely composed of raw materials for the textile industries, which account for 32% of the whole. Food imports are now increasing, and are about 34% of the whole, with grain imports up to 10% as against 4% in the 1820s. Exports are to a significantly smaller extent than in earlier years based on indigenous supplies. Of total exports of British products and manufactures, between 2 and 3% are accounted for by coal; wool from our own sheep provided now about 70% of total supplies, as against 95% half a century earlier, and we are beginning to be dependent on imported supplies of other materials also which had earlier been derived from home

sources. The distribution of man-power reflects these and other changes. The proportion of occupied population engaged in agriculture has fallen to somewhere about 21%;[1] better Census classifications, introduced in 1841 and which persisted almost unchanged until 1911, enable one to see the employment of the rest of the occupied population in more detail; manufacturing in total employs just under 33% of the whole—a figure which was not exceeded until 1951—and of these over 22% are accounted for by textiles and clothing, a percentage very nearly three times as high as that of 1951.

Between 1850 and 1870 these features of high specialisation, a high import ratio, great dependence on manufactured exports, and especially on textile exports, diminishing dependence on indigenous raw materials and diminishing dependence of home food supplies all took a much more pronounced form. Britain was very rapidly adjusting her economy to a world market, made accessible by new and improved forms of transport.

But it is important to remember how immensely different that world was from the world of to-day. In 1850, so far as I can judge from some brave guessing to fill in gaps in the calculations of Mr. Colin Clark which cover the majority of the bigger countries, the real income of the world was between a fifth and a quarter of what it was in 1937. It has grown since 1850, partly as the result of unprecedented population growths, partly as the result of the great growth of productivity. But in the process of that growth it has come to be very differently distributed. Of the world income of 1937, about 29% was that of the North American countries and 4% that of Central and South America; Western Europe accounted for about 31% and Eastern Europe for about 11%; the Far East for only about 20%; all other areas, including Africa, Australasia, the Middle East, for about 5%. Of the world income of 1850, the largest share almost certainly went to the Far East, which would appear to have enjoyed something over 40% of the whole; North America had a real income comparable with that of Africa to-day, and accounted for only about 10% of world income, with Central and South America representing about another 3%; Western Europe had a slightly smaller share than now, with about 29%; Eastern Europe was rather more important, with about 14%; the Middle East had about the same

[1] There are considerable difficulties in interpreting the 1841 and 1851 Censuses in this respect, and particularly in judging from them the trend between those two years. See Charles Booth, "Occupations of the People of the United Kingdom, 1801–81," *Journal of the Royal Statistical Society*, Vol. XLIX, p. 325.

share as to-day; Australasia and Africa were almost completely negligible.

It was to the resources and requirements of that very different world that Britain was adjusting herself at the middle of the nineteenth century—a world in which the predominantly agricultural countries of new settlement were anxious to trade their primary products for manufactures; a world in which about 65% of the occupied population of the United States was still engaged in agriculture; a world in which Britain was probably responsible for over 40% of the world's total output of manufactures.

It was between 1850 and 1870 that the nineteenth-century structure reached its more complete form. By 1870 the ratio of retained imports to net national income at factor cost had risen to about 28%—a figure surpassed only for a short time in the 1880s, when it reached for a few years a level of about 33%. The pattern of imports was changing. About 35% of all imports were now food, of which grain was 9%, and about 50% raw materials; manufactures accounted for about 15%. But the main sources of food were still in our own agriculture. For the year 1867, according to estimates by James Caird,[1] home agricultural produce accounted for about 82% of total supplies of the main staple foodstuffs, and probably about three-quarters of the whole when allowance is made for imports of sugar and other tropical produce. Exports of textiles accounted for about 56% of the whole; cotton now 35%, wool 13%. But exports of metals and metal manufactures were beginning to mount; they now represented 21% of the whole. At the same time the industrial distribution of the occupied population increasingly reflected this changing emphasis. Between 1851 and 1871 the proportion engaged in manufacturing of all kinds slightly declined, if one may trust the figures, from about 33% almost to 30%; but within the total metal manufactures rose from 6% to nearly 7½%. The proportion in agriculture fell heavily—from 21½% to a little over 14%, while the proportion engaged in transport and commerce rose from just under 11% to about 13½%.

Between 1870 and 1913 the overall ratio of retained imports to net national income remained relatively steady, rising from the 28% of 1870 up to a peak of 33% in the 1880s and then falling

[1] See James Caird, "On the Agricultural Statistics of the United Kingdom," *Journal of the Royal Statistical Society*, Vol. XXXI, pp. 127–45. The estimates are concerned only with such basic foodstuffs as grain, beef and mutton, butter and cheese, potatoes, and take no account of tropical imports, fruit, tea, coffee and the like.

back to slightly lower figures in the 1890s. But in all else the change continued to be rapid. The redistribution of manpower continued. Agriculture, which had given employment to over 14% of the occupied population in 1870, was down to 8½% at the turn of the century and to about 8% by 1913. The total of manufacturing retained its surprising stability around 29–30% of the whole, but within this total the redistribution continued, away from textiles, which fell from about 18% in 1870 to about 13½% by 1913, and towards metals and engineering, which rose over the same period from about 7½% to about 10% of the total. And the trend towards transport, commerce and distribution continued; this group rose from 13½% in 1870 to about 20% in 1913.

Parallel with this redistribution, and springing from the same causes, was a change in the pattern of imports. At 1850 and again at 1870 food imports had been close to 35% of the whole; they rose to about 42% of the whole at the turn of the century, and for the first time were larger than raw-material imports; the share of the latter increased again by 1913, but it remained nearer to 40% than to the 50% of 1870 or the 60% of 1850.

It is not easy to measure precisely the degree of dependence on imported food at the culmination of the nineteenth-century development, much as one would like to do so. As regards grain of all types, we imported about 50% of our total supplies at the turn of the century[1] and 55% in 1913, as compared with about 70% in 1936–38. As regards meat, we imported about 40% in 1900, and again in 1913, rising to just under 60% in 1936–38. Overall, and including products in which we were much nearer to self-sufficiency, I would guess (and it can be no more than a guess) that home agriculture provided about 50% of our food in 1900, about 45% in 1913,[2] about 35% in 1936–38, with a return to about 50% in the last few years.

Thus by 1913 the structure based on a high specialisation in manufacture, on imported materials and on imported food had reached its fulfilment. At the 1911 Census agriculture accounted for only 8·1% of the occupied population, as compared with 21·6% seventy years earlier. Manufacturing in total gave employ-

[1] See R. F. Crawford, "Notes on the Food Supply of the United Kingdom, Belgium, France and Germany," *Journal of the Royal Statistical Society*, Vol. LXII, pp. 597–629.

[2] See estimate for 1911 by Sir Henry Rew, "The Nation's Food Supply," *Journal of the Royal Statistical Society*, Vol. LXXVI, pp. 98–105. The proportion in terms of value, provided by home production was about 52% if tea, coffee, cocoa and sugar (of which there was then no home production) are excluded.

ment to just about the same proportion of the whole. The proportion of the occupied population engaged in transport, commerce and distribution had grown by about as much as that in agriculture had declined.

It was a specialisation no longer based on indigenous resources. Coal, it is true, still accounted for 10% of our exports, and woollens for 6%. But the woollens were increasingly produced from imported wool; it had formed 50% of the available supply [1] in 1857–63; it now formed about 84%. It was a specialisation still based predominantly on textiles. And new textile industries were beginning to grow all over the world—not only in North America, but also in Japan, India, China, and later in South America. Thus the structure became insecure almost at the moment that it was completed. The British share of the world total of production of manufactures inevitably declined as new industries grew up in other countries; it is almost a tautology to say so. Whereas the British share had been probably appreciably above 40% in 1850, it was down to about 32% in 1870, about 20% at the turn of the century and about 14% in 1913.[2]

The structure of 1913 was one of very considerable immediate advantage to Britain, but it was inherently fragile. No one country could possibly hope to retain indefinitely, however great its technical leadership, the share of world manufacturing that fell to us in the middle of the nineteenth century, or the share of world trade in manufactures that went with it. The share of that trade held by Britain fell from about 40% in 1870 to about 30% at the turn of the century and 27% in 1913. It was a declining share, however, in a rapidly growing total. Thus the problem of paying for imports was never acute before 1913; normal imports had never been increased to the full capacity to pay for them, and invisible earnings left a handsome investible surplus in most years. But what I wish, nevertheless, to emphasise is that, quite apart from wars, our 1913 structure was based on an advantage which was temporary and not permanent: that the incentives to shift resources to industry and reduce primary production were already in operation in many countries on which we depended, and might have been expected in the course of time to push us back from the position of extreme specialisation that suited us so admirably for the moment.

It was, moreover—and I do not think this is generally realised

[1] See C. T. Saunders, "Consumption of Raw Materials in the United Kingdom, 1851–1950," *Journal of the Royal Statistical Society*, Vol. CXV, pp. 336–8.

[2] See *Industrialisation and Foreign Trade*, League of Nations, 1945, p. 13.

—a structure that was not based, or not in its extreme form, on a system of comparative advantages. It is not true to say that British productivity in manufacturing was higher in relation to British productivity in agriculture than that of many of the countries from which we were increasing our imports. The ratio of the value of production per head in industry to the value of production per head in agriculture has been more favourable to industry and less favourable to agriculture in the United States than in the United Kingdom certainly since 1870. The same is also true of Canada, if one may make plausible assumptions regarding Canadian productivity per head in agriculture for which contemporary estimates do not exist for the earlier years. It was only in Australasia and in South America that the comparative advantage lay throughout heavily on the side of agriculture.

The gain that we secured by specialisation derived from the terms of trade subsisting everywhere between manufactures and primary products. Over the greater part of the last eighty years there has been an advantage to any economy anywhere (with exceptions in Australasia and South America) which moved resources out of agriculture into industry and which exported manufactures and imported primary products. We in Britain could benefit through the fact that our technical lead, our financial resources and our geographical setting put us in the position to move more quickly than others.

The structure was inherently fragile in a second sense. Growing population to be nourished with food, growing industries to be nourished with materials, meant increasingly that marginal supplies must be derived from abroad. Food supplies by 1913 came, as I have said, to the extent of about 55% from abroad. At the same time we were coming to depend ever more and more on raw-material imports, not only because of increased needs but also because of exhaustion of supplies. In 1857–63 we could supply all our needs of lead, 88% of our needs of tin and 71% of our needs of copper. By 1907–13 we supplied only 11% of our lead, 21% of our tin and 1% of our copper. In 1857–63 we could depend on our own wool supplies for 58% of our needs; in 1907–13 the figure was down to 22%, and similarly for flax.[1]

The years from 1919 to 1939 saw the working out of some of these forces that already existed before 1913. But to those already existing forces was added a new and more powerful force: the emergence of the United States during the First World

[1] See C. T. Saunders, *loc. cit.*

War to a position of leadership in manufacture. Her share of world production of manufactures had first exceeded our own in the 1880s; it was about two and a half times our own by 1913, and remained about four times our own through most of the inter-war years. But the United States share in foreign trade in manufactures was by no means proportionate to her production, and remained between a quarter and a third of our own down to 1913. It increased to well above a half of our own in the years immediately following 1918, and rose to about four-fifths of our own during the later inter-war years. That dramatic growth of competition in our markets, and the subsequent and comparable growth of that of Japan, together with the loss of foreign assets during 1914–18, meant that the structure of 1913 required to be changed far more rapidly and more extensively than would otherwise have been necessary. I would in retrospect regard many of the travails of the 1930s as part of the inevitable and painful process of world adjustment and of our own adjustment to the growth of the United States and Japan.

The immediate effects were, however, obscured and their severity diminished by the favourable turn of the terms of trade in the 1930s,[1] partly, it is true, the consequence of the lower prices of primary products relatively to manufactures to be expected in depression, but chiefly to be ascribed to the great revolutions in agriculture: mechanisation, new fertilisers, better strains, better transport. This favourable turn permitted us to survive the 1930s with appreciably less structural change than would otherwise have been required.

What were the chief changes in our structure during these years? First, and largely a consequence of the change in the terms of trade, the ratio of the value of retained imports to net national income fell back from the 28% of 1913 to 20% in 1938. But with the aid of these improved terms of trade, and in the face of increasing difficulties, we retained the other main features of the 1913 structure. Man-power in agriculture continued to fall; it was down to about 5·7% of the occupied population [2] by 1931; the proportion in manufacturing remained about constant; that in commerce, finance and distribution continued to grow. But the main feature of these years was the decline of the textile industries and the growth of the metal industries. In 1851

[1] The volume of imports which would have cost 100 units of exports in 1913 could be bought by an average of 70 units during the years 1931–39.

[2] On the classification of the period 1841–1911; the classification was slightly changed in 1921.

there were 22% of the occupied population in the textile industries; by 1911 the figure was about 13½%; in 1931 it was below 11% and in 1951 under 8%. The metal industries employed 6% in 1851; they had reached nearly 10% in 1911, about 12% in 1931 and 17½% in 1951.

This change was naturally associated with the change in the character of our exports. Textiles had provided 63% in 1850 and 34% in 1913; by 1937 the figure was down to 24% and by 1951 to 19%. Metals and engineering products provided 18% in 1850; they were 27% in 1913; they were up to 35% by 1937 and to 49% by 1951.

Despite the strains of the 1930s, we continued to increase our dependence on imported food. For our raw-material supplies, with the possible exception of iron ores, we also became increasingly dependent on imports. Home supplies of wool and flax and of non-ferrous metals declined further.

This structure was, however, proving increasingly difficult to maintain. Despite exceptionally favourable terms of trade, we were failing to pay our way on current account and balancing our payments with the help of drafts on our past foreign accumulations. Thus we entered the war with a structure very imperfectly adjusted to our current circumstances. The consequences of the war and, far more than those, the consequences of a reversal of the terms of trade left us with a structure very ill-adjusted to the world in which we now live.

May I look back for a moment on the century as a whole? In 1820 and right down to the 1870s we were scarcely as yet in any full sense a nation of shopkeepers. We were a nation of linen drapers—of John Gilpins rather than of William Whiteleys. We built our nineteenth-century economic structure and we multiplied the population of 1750 six-fold on the basis of our ability to sell cotton and woollens. We created by 1913 a nation which depended for about seven-eighths of its raw material supplies, apart from coal, and for over half of its food supplies on its continued ability to sell some kind of export into a world which was becoming less dependent on its textiles. Since the 1870s we had expanded metal and engineering exports, and by 1913 they were a quarter of the total. But it is mainly in the period between the wars that we changed to being a nation dependent primarily on our ability to sell engineering goods, and in that field we have never enjoyed the sort of predominance we had for over a hundred years in textiles.

Before I go on to consider the forces that may during the

next decade require further adjustment of our structure, may I pause to contrast the structure that has emerged from our history during the past two centuries with that which has emerged from the very different history of Western Germany.[1] Western Germany has a population very similar to our own—49·0 millions, as against 50·8 for the United Kingdom. The total areas of the two countries are almost identical. The agricultural areas are not widely different: Western Germany had 8·5 million hectares of arable in 1948–52 as against 7·4 millions in the United Kingdom; the United Kingdom had 12·1 million hectares of permanent grass against Germany's 5·5 millions; Germany had 7·0 million hectares of forest as against our 1·5 millions. In normal peacetime conditions the real incomes per head have not been widely different; the United Kingdom probably had an advantage of some 15% as compared with the average of all Germany before the war, but the advantage over the more industrialised Western Germany was almost certainly less; recent calculations have shown a wider discrepancy for 1952, possibly as great as 20–25%, a discrepancy not unexpected and largely explicable in terms of the different consequences of the war.

In all else the structures of the two countries are radically different. In 1953 the import ratio for the United Kingdom was about 26%, that for Germany about 16%. It is not possible to carry back the German ratio in terms of anything like the present area. In 1937–38, when the United Kingdom ratio was about 20–22%, that for pre-war Germany as a whole, very much larger and more self-sufficient, was about 7–8%. But the discrepancy had been much less in earlier years. In 1913, when the United Kingdom ratio was 28%, that for the contemporary area of Germany was about 24%.

The lower ratio and the lower income per head taken together mean that in 1953 German retained imports were about two-fifths British imports. Western Germany supports at present an industrial production about two-thirds of that of the United Kingdom, with imports of raw materials about one-third of the United Kingdom. She succeeds in doing this partly because of a much smaller activity in the textile industries, partly because of her almost complete dependence on her own timber resources; these two sources of savings of imports accounted for two-thirds of the difference.

In food, the United Kingdom is now dependent on imports

[1] See, *inter alia*, *Economic Survey of Europe since the War*, United Nations, Geneva, 1953, pp. 97–9.

for about half her foodstuffs; Western Germany for about one-fifth. But, with the imported food, the United Kingdom real consumption per head was in 1952 some 15–20% higher than that of Germany.[1] The agricultural output of Western Germany is almost half as great again as that of the United Kingdom. She has achieved this by devoting to agriculture about 16% of her occupied male population, as against 6% for the United Kingdom.

I do not wish to hold up the Western German economy as a model that we ought to copy. Both countries have much that they might learn from each other. The higher standard of life that we have enjoyed has in the past, I am convinced, derived in considerable measure from our greater specialisation and trade. I believe that Germany will be found as the years go by to be progressively moving again towards higher imports and higher exports, and in consequence becoming more directly competitive with the United Kingdom. But I do believe that one may learn both from the history of our own past and from a comparison with Germany that economic structures are not unchangeable and permanent for all time, but capable of great variation, and from time to time requiring great variation.

In what directions can we expect our own structure to change under the stimulus of the market forces and the economic pressures of a changing world? My own view—and I claim for it no special authority—is that the structure which we created to such profit in the second half of the nineteenth century was fundamentally based on two factors. First, it was based on the possession by us of a leadership in manufacturing and a corresponding share of world trade in manufactures which have been diminishing progressively. I do not think that it is within our power, whatsoever energy and skill we may develop, to recapture anything comparable with that leadership. It was based on a concentration of discovery, of scientific knowledge and of practical expertise within a single country such as we can hardly imagine to be capable of repetition by any country. It was based on a slowness of the dispersal of knowledge and a lack of the technical background required for receptivity such as can hardly be re-created once it has disappeared. The degree of technical leadership of the United States to-day is in no sense comparable with that of the United Kingdom in the middle of the nineteenth century. And to that we must add the continuing improvements in means of transport, and particularly in land transport. I think the degree

[1] See *An International Comparison of National Production and the Purchasing Power of Currencies*, by Milton Gilbert and Irving B. Kravis, Table 12.

of difference in comparative productivity in different industries, apart from advantages of access to very advantageous raw-material supplies, is diminishing as compared with the nineteenth-century differences, and to an increasing extent the country in which man-power is four-fifths as productive as that in another in one industry is apt to be four-fifths as efficient in a very wide range of industries. Thus the opportunities for one country to secure and hold a large export trade by leadership and the advantages of specialisation seem to me to be less than they were.

Secondly, it was based on a relation between primary production and industry which in its extreme form I believe to have been temporary. There are signs that the forces which enabled us to benefit from the favourable terms of trade between manufacturing and primary production are working themselves out. The shift of resources from primary production in North America has been on such a scale that United States agriculture has fallen from a share of 65% of the occupied population in 1850 to 29% in 1920 and to 16% in 1950. In North-western Europe as a whole the proportion in agriculture has fallen from 26% in 1920 to 19% in 1950. In Asia and in South America also there has been a very marked increase in industrial activity. Thus it is not only the high levels of activity and consequent demand for primary products in recent years which, despite the continuance of the rapid upward trend of productivity in primary production, have reversed the trend of the terms of trade. The movement out of primary production and into industry consequent upon the powerful incentives of the 1930s has also, I think, contributed largely and more permanently. The ratio of the value of production per head in agriculture to the value of production per head in industry is now almost everywhere much more favourable to agriculture than it has been for a generation. The prosperity of British agriculture in the past few years has been not solely, or even predominantly, the result of subsidies and other political favours; they have shared in the general recent prosperity of all primary producers everywhere.

For these reasons I believe that we are progressively moving into a world in which the advantages of our nineteenth-century structure in its extreme form will be less than in the past. I believe that by degrees, and under the pressures of the ordinary market forces, we must expect and be prepared to adjust ourselves to an import ratio a little nearer to that of Germany than that of to-day, and to the adjustment of the pattern of activity that may go with it. I have no desire to accelerate any necessary transition

beyond the pace that changing world conditions may require; least of all have I any desire to lead the United Kingdom into uneconomic autarky.

But I am anxious lest an undue conservatism may regard the structure of fifty years ago as not only the ideal of that period but also the ideal for the present, and so resist structural change at the pace at which it may be necessary. For, as I see it, conservatism in these things may lead us to seek to preserve an unsuitable structure by taking measures to secure a balance of payments on current account of which the short-term effect is to reduce imports by reducing activity. By such measures we may well forfeit through reduced activity, and through reduced capital formation and reduced growth of productivity, considerably more than we gain at the margin by better international division of labour.

After such dramatic changes as have occurred as the result of the two wars of this century it is inevitable that our economy should require greater and more rapid change than if events had moved more smoothly and continuously. What we know least of all in the whole field of economics is the limits of practicable rates of change. We know how fast—or rather how slowly—the pattern has in fact changed over the past century. But we do not know just how fast it can be made to change by normal price incentives. These incentives will work in two ways; modifying the pattern of consumption through the change of relative prices, and modifying the pattern of production through the change of incentives. But there can be no question that large structural change requires considerable time. It requires a change in the pattern of our fixed capital, of our skills and of the geographical and industrial distribution of the working population. In some cases the required structural change can be facilitated by a change in the pattern of imports and their ratio to national income as different types of resources but relatively more or less scarce. But any large scale resort to this solution requires the expansion of exports, and that may well be the critical factor in all our problems.

In war-time, when very rapid structural change is essential, we have been accustomed both to accelerate the change and to diminish its immediate necessity by the twin operations of controlling the use of resources and rationing forms of final consumption involving resources which are temporarily scarce. My own fear is that events may continue to require us to make changes faster than a free and smoothly working economy can easily carry them through. It is for a willingness to face the

necessities and implications of change when they come, and to foresee them and to be prepared for them before they come, that I would plead.

AUSTIN ROBINSON

Sidney Sussex College,
Cambridge.

TABLE I

The Dependence of the British Economy on Imports

Year.	Population of United Kingdom,[1] millions.	Approximate ratio of retained imports to net national income at factor cost,[2] %.
1688	7·4	5½
1820	20·9	12
1850	27·4	18
1870	31·5	28
1880	34·9	33
1900	41·5	26
1913	45·8	28
1937	47·3	21
1951	50·2	32
1953	50·4	26

[1] For 1688 I have taken Gregory King's estimate, since I am using his national income and import estimates. For England (meaning, as is made clear, England and Wales) he estimates 5·5 millions; he says that, "Scotland and Ireland are . . . not ⅕ths of England in number of people." He goes on to say that, "England, Scotland and Ireland together contain . . . somewhat more than 7 millions of people." I have taken the mean between 7·0 millions and 7·7 millions. All other figures down to 1900 from the Census of the following year. Figures for isolated years since 1900 are mid-year estimates. The figures for 1937, 1951 and 1953 refer, as does the national-income estimate, to the area now defined as the United Kingdom, *i.e.*, excluding Eire; the figures for earlier years include what is now Eire.

[2] Estimates of Net National Income at Factor Cost from A. R. Prest, "National Income of the United Kingdom 1870–1946," ECONOMIC JOURNAL, March 1948, pp. 31–62, continued with help of official estimates. Earlier estimates of national income based on material from Colin Clark, *Conditions of Economic Progress*, and A. L. Bowley, *British Overseas Trade, 1700–1930*. Retained imports as revalued for earlier years by A. H. Imlah, *loc. cit.*

TABLE II

Percentage Distribution of the Occupied Population of England and Wales

	1821.	1831.	1951.
Agriculture and Fishing	34·0	28·6	5
Trade, Manufactures and Handicraft	46·5	42·2	60
Others, not employed in above	19·5	29·2	35
	100	100	100

Note: The figures for 1951 represent only a rough guess of the orders of magnitude of the similar categories to-day.

TABLE III

Percentage Distribution of the Occupied Population of England and Wales, 1841–1951

	1841.	1851.	1861.	1871.	1881.	1891.	1901.	1911.	1921.	1931.	1951.
Agriculture and Fishing	21·6	21·4	18·2	14·2	12·4	10·3	8·5	8·1	6·8	5·6	4·7
Manufacturing	28·9	32·9	32·6	30·2	29·9	29·6	29·1	29·0	31·2	30·0	34·1
of which:											
Textiles and Clothing	19·0	22·2	20·6	18·1	17·2	16·4	14·1	13·4	13·7	11·4	10·7	7·7
Metals, Machinery, etc.	5·5	6·1	7·2	7·3	7·7	7·8	9·1	9·7	9·8	12·8	11·6	17·5
Other manufacturing	4·3	4·6	4·7	4·8	5·0	5·4	5·9	6·0	6·4	7·1	7·7	8·9
Manufacture of Food, Drink and Tobacco	1·5	1·7	1·6	1·6	1·7	1·9	2·2	2·4	2·9	3·1	3·3	3·3
Mining and Quarrying	3·3	3·9	4·3	4·2	4·6	5·0	5·5	6·3	6·9	7·5	6·4	4·4
Building, Decorating, Contracting	5·4	5·0	5·3	5·7	6·3	5·7	7·1	5·8	5·3	4·4	5·6	6·2
General Labourers	5·8	4·1	3·4	4·9	5·0	4·7	2·9	1·8	1·5	—	—	—
Transport and Communications	3·0	5·4	6·2	6·6	7·6	8·4	9·7	9·5	6·9	7·0	6·8	7·7
Commerce, Finance and Distribution	4·8	5·3	6·0	6·8	7·2	7·9	9·0	10·5	13·2	13·2	15·5	13·8
Personal Service	19·2	14·6	15·6	16·6	16·1	16·3	14·6	14·1	15·1	11·8	12·8	7·5
Central and Local Government Employment	1·3	1·5	2·0	1·9	1·9	2·1	2·6	3·1	4·4	6·5	6·6	8·2
Residual	5·2	4·1	4·9	7·3	7·3	8·2	8·9	9·3	6·0	8·4	7·5	10·2

Source: 1841–1931: Census of Population, Occupation Tables; 1951: 1% Sample Tables.

Figures for years prior to 1911 should be compared with those in the *first* column for the year 1911, and those in the *second* column of the year 1911 should be used for comparison with 1921–51. This break is rendered necessary by a changed method of classification introduced in 1911. Prior to that year the classification had been a mixed industrial and occupational one. In 1911, in addition to the main tables on the old mixed classification, there appeared tables on an industrial classification. But it was not until 1921 that there appeared a complete separation of the classification into an industrial one and an occupational one. The 1921 *General Report* commented that this involved a very substantial change. For this reason no significance should be attributed to small changes between 1911 and 1921.

From 1911 onwards the industrial classification has been used. This is not only more useful from an economic standpoint, but is also to be preferred from the point of view of comparability. The 1921 General Report commented that although the classification prior to 1911 was a mixed one, yet it was largely industrial in nature, with only a few general occupational headings. This was so even after 1881 when certain occupations, such as clerks or porters, which should formerly have been classed to the separate manufacture or trade with which their work was connected, were collected together under general headings. That this change probably did not destroy the comparability of the figures before and after 1881 is apparent when the numbers in these affected occupations in 1871, 1881 and 1891 are compared.

Table III is based in the first instance on a comparative table for 1881–1921 reprinted in the 1921 General Report and originally prepared at the request of the Balfour Committee. This table has been extended forwards and backwards by adjusting the classification in other censuses to conform with that on the table. The odd general occupational groups which exist prior to 1911 are where possible allocated to their most appropriate industrial group, *i.e.*, carmen are put in transport. Where this is not possible, as in the case of clerks, they are omitted and included in the residual group.

The separation of distribution from manufacturing was not effectively carried out until 1911, though in 1901 it was nearly complete. The censuses *prior to 1901 do permit*, however, a high degree of separation. For most manufacturing groups the proportion of those engaged in wholesale and retail distribution in 1911 for which separate figures are available in earlier censuses is in the region of 90%. The principal exception is the group concerned with distributing the products of the textile and clothing industries. In this case separate figures exist in earlier censuses for only about three-quarters of those engaged in distributing these products in 1911. This incomplete separation of manufacture and distribution prior to 1901, sizeable only in the case of textiles and clothing, *affects the comparison of figures* before and after 1901. *Prior to 1901*, particularly in the case of textiles, the manufacturing figures will be a little higher than they should be and the distribution figure rather lower.

The residual in the table is composed principally of those engaged in professions (by far the most important), public utilities, entertainments and sport.

Down to 1911 the Census authorities were improving their classification in minor respects, and by degrees indefinite classes, such as general labourers, were absorbed into their appropriate classifications without substantial change of the character of activity. This will somewhat affect the comparability of such groups as building.

The preparation of this Table, in addition to much other assistance throughout the article, I owe to Mr. G. D. Garton of the Department of Applied Economics, Cambridge University.

TABLE IV

Composition of the United Kingdom Exports

Year.	Manufactured exports as percentage of total exports.	Textile exports as percentage of total exports.	Metal and engineering exports as percentage of total exports.	Coal exports as percentage of total exports.
1830	91	67	11	1
1850	93	63	18	2
1870	91	56	21	3
1890	86	43	25	7
1913	79	34	27	10
1937	78	24	35	7
1951	88	19	49	1

Note: Manufactured exports correspond to Class III: Textile exports are broadly III, I, J, K, L, and part of III, U, (1951 classification); *i.e.*, they exclude clothing. Metal and engineering exports are broadly III, C, D, E, F, G, S, and part of III, U. Coal exports are II, A. Prior to 1913 the alphabetical list has been put on a classification as close as possible to that of 1913–51.

TABLE V

Composition of United Kingdom Imports

	1820.	1850.	1870.	1900.	1913.	1929.	1933.
Food and Livestock . .	31	34	35	42	37	40·5	46
Of which: Grain . .	4	10	9	9	9	7	8
Raw Materials . . .	60	59	50	39	43	39·5	41
Of which: Textile Materials . . .	24	32	28	16	17	11	13
Finished Manufactured Goods . . .	9	7	15	19	20	20	13
Total . . .	100	100	100	100	100	100	100

Note: The analysis given above is derived from the work of Werner Schlote, *British Overseas Trade from 1700 to the 1930s* (translation by W. H. Chaloner and W. O. Henderson, Blackwell, 1952). He has attempted to distribute the recorded imports according to the Brussels international classification, and has revalued the imports for the purpose of calculating volumes and the prices of a series of base years and has then linked the separate series. While the latter process is irrelevant to my immediate problem, I have used his material, since it gives a convenient and constant set of classifications and enables me to go back to 1820. But a reader should be warned that the relative values of different products underlying this table are those that emerge from Schlote's work (*vide op. cit.*, pp. 27–30), and which Schlote calls "quantities at base year prices." Since Schlote's analysis ends at 1933, the comparison cannot be extended into the post-war period.

TABLE VI

Ratio of Productivity in Agriculture to Productivity in Industry

	1870.	1900.	1913.	1937.
United Kingdom . . .	1·07	0·93	0·80	0·60
United States . . .	0·52	0·44	0·39	0·39
Canada	0·96	0·63	0·43	0·27
Australia	—	—	1·39	1·41
New Zealand	—	—	1·38	1·09
Argentine	—	—	—	2·12
Germany	—	—	0·60	0·48
France	2·0	—	0·77	0·59
Denmark	—	—	—	0·49

Note: The above table is derived from estimates made by Mr. Colin Clark in *The Conditions of Economic Progress*. The underlying figures are calculated by him in his "international units," and are therefore at the *relative* prices of 1925–34 and not at current *relative prices*. The output of agriculture is valued at world prices, and does not reflect the special advantages or protection available to domestic agricultural producers. The ratios are—it should be emphasised—the result of comparing *average* productivity in industry with *average* productivity in agriculture; the ratios of the *marginal* productivities may be appreciably different.

INCREASING PRODUCTIVITY, INCOME-PRICE TRENDS AND THE TRADE BALANCE

Of the many factors which have been discussed in the attempt to provide a theoretical explanation of chronic balance-of-payments disequilibria in general, and a meaningful concept of "dollar shortage" in particular, those centring on the "dynamic" problems associated with the high rate of increase of American productivity have tended to find increasing favour in recent years.[1] Such explanations of chronic disequilibrium are of two sorts.[2] On the one hand, there is the argument that American money income rises less rapidly than productivity, so that American prices fall and the outside world is obliged to choose between secular deflation and secular depreciation (or between periodic deflations and periodic devaluations); on this line of argument chronic disequilibrium is a problem of monetary adjustment. On the other hand, there is the argument, elegantly formulated on a recent occasion by Professor Hicks,[3] that technical progress in the United States is strongly biased in favour of import substitutes, so that, apart from monetary complications, economic progress there imposes a real loss on the outside world;[4] on this line of argument chronic disequilibrium is basically a problem of real adjustment.

[1] The economists most notable for their early and sustained emphasis on this aspect of the dollar problem have been Thomas Balogh and John H. Williams. See Thomas Balogh, *The Dollar Crisis: Causes and Cure* (Oxford: Blackwell, 1949) and earlier articles mentioned therein; John H. Williams, *Postwar Monetary Plans* (Oxford: Blackwell, 1949) and *Economic Stability in the Modern World* (Stamp Memorial Lecture, November 1952).

[2] The high rate of increase of American productivity also plays a part in other explanations of dollar shortage, for example, that emphasising the instability of the American economy; but the latter argument seems to depend essentially on the high absolute level of American productivity rather than on its rate of change.

[3] J. R. Hicks, "An Inaugural Lecture," *Oxford Economic Papers*, N.S., Vol. 5, No. 2 (June 1953). Professor Hicks' argument is foreshadowed in Professor Haberler's contribution "Dollar Shortage?" in *Foreign Economic Policy for the United States* (Cambridge: Harvard University Press, 1948) edited by S. E. Harris, and in Honour Croome, "The Dollar Siege," *Lloyds Bank Review*, July 1950. See also Sir Dennis Robertson, *Britain in the World Economy* (London: Allen & Unwin, 1954), Ch. III.

[4] For a real loss to the outside world to result, technical progress in the United States must not merely be biased in favour of import substitutes, but sufficiently so to offset the favourable effects of progress in American export industries. Moreover, such import-biased progress could scarcely affect *all* the countries of the outside world adversely, since those which produced substitutes for American exports would enjoy a favourable movement of their terms of trade. Finally, import-biased progress might well be the result of other factors, such as delays by the outside world in making the necessary monetary adjustments, or the protectionist character of American commercial policy, rather than an independent feature of the American economy. For these reasons the hypothesis that American progress is import-biased does not impress the present writer as a satisfactory starting-point for analysis of the dollar problem.

The purpose of this article is to throw some light on the logical implications of the first of these arguments, through an investigation of the relation between rates of increase of productivity and income-price trends or policies on the one hand, and the trend of the balance of trade on the other, in a highly-simplified two-country model of international trade.[1] Part I sets out the assumptions of the model and develops the basic equation required in the analysis; Part II analyses the effects of increasing productivity on the balance of trade, on the alternative assumptions that increasing productivity is reflected in proportionately rising money incomes or in proportionately falling prices; and Part III discusses the income-price policy necessary in one country to maintain equilibrium in its trade balance, given the income-price trend in the other country. Part IV sketches briefly the extension of the analysis required to deal with dynamic problems of balance-of-payments equilibrium. While the analysis employs mathematical techniques, these are of a type now familiar in this field, and their main use is to bring the relevant variables together in a systematic way. The more important conclusions bearing on the theory of dollar shortage are summarised in non-mathematical terms in Part V.

I. The Model

The analysis which follows is conducted in terms of a world of two countries, country 1 and country 2. In order to isolate the effects of increasing productivity, it is assumed that each country

[1] The use of a two-country model can be a legitimate tool of analysis in international trade theory, *provided* that it is clearly recognised that only one of the "countries" can be actually identified, the other "country" being the rest of the world; unfortunately there has been a tendency in the literature to apply the two-country model to the relations between the United Kingdom and the United States, a use for which it is clearly not appropriate. In the argument of this article, country 2 is taken to be the United States, and country 1 the rest of the world; some of the complications which arise in a many-country system are considered briefly in the Appendix.

has a fixed supply of labour,[1] which is kept continuously employed[2] in the production of a single good.[3] The output of this good (denoted by Y) is assumed to be increasing at the continuous rate $R\left(=\frac{1}{Y}\frac{dY}{dt}\right)$ determined by technical progress and capital accumulation;[4] the price per unit of the good (denoted by p), measured in an international monetary unit common to the two countries, is assumed to change at the rate $r_p\left(=\frac{1}{p}\frac{dp}{dt}\right)$, which may be positive, negative or zero; and the level of money income per head (denoted by w) changes at the rate r_w. By definition, $r_w = r_p + R$.[5]

Each country consumes a part of its output itself, and exports the remainder (denoted by X) to the other country in exchange for imports of the other country's product. Each country's demand for the other country's exports is assumed to be a function of two variables: its own output (which is identical with its income, valued in units of domestic product) and the price of its imports relative to the price of its own product. In symbols, $X_1 = f_2(\pi, Y_2)$ and $X_2 = f_1\left(\frac{1}{\pi}, Y_1\right)$, where $\pi\left(=\frac{p_1}{p_2}\right)$ is the price of country 1's good relative to the price of country 2's good. The

[1] To abstract from the effects of population growth.

[2] To abstract from problems of variations in effective demand, *inter alia*, variations induced by the changes in the balance of trade which are the object of study. Implicit in this assumption is the difficulty that, strictly interpreted, it means that changes in the trade balance are accurately *forecast* and offset by the economic authorities, and therefore are in some sense "planned." Such difficulties are ignored in what follows.

[3] The assumption that a number of goods are produced, unless hedged about by enough other assumptions to reduce it to equivalence with a single-good case, either introduces problems of re-allocation of production at varying real cost, which make the change in productivity in part a dependent variable, *or*, on the assumption of constant relative cost of all products, introduces awkward problems of discontinuity in international adjustment. There is also the difficulty that technical progress and capital accumulation will have differential effects on the relative costs of different goods.

[4] In a single-good model capital accumulation must take the form of employing larger stocks of the good in the production process. Capital accumulation, unless "neutral" in the Harrod sense, introduces problems of change in the proportion of current output devoted to investment, and both it and technical progress may involve changes in income-distribution, which may influence the demand for imports. Such complications are ignored here; for a discussion of some of the problems in a closed economy, see Joan Robinson, "The Production Function and the Theory of Capital," *Review of Economic Studies*, Vol. XXI (2), No. 55, pp. 81–106.

[5] By definition, $w = \frac{pY}{L}$ where L is the (fixed) quantity of labour. Hence $\frac{1}{w}\frac{dw}{dt} = \frac{1}{pY}\left(p\frac{dY}{dt} + Y\frac{dp}{dt}\right) = R + r_p$.

income elasticity of a country's demand for imports is denoted in what follows by ϵ

$$\left(\epsilon_1 = \frac{Y_1}{X_2}\frac{\partial X_2}{\partial Y_1}, \epsilon_2 = \frac{Y_2}{X_1}\frac{\partial X_1}{\partial Y_2}\right)$$

and the price-elasticity of its demand for imports by η

$$\left(\eta_1 = \frac{\pi}{X_2}\frac{\partial X_2}{\partial \pi}, \eta_2 = -\frac{\pi}{X_1}\frac{\partial X_1}{\partial \pi}\right)^1$$

We may now proceed to analyse the behaviour of the balance of trade between the two countries over time. Before doing so, however, it is necessary to define more precisely the problem in which we are interested, and in particular to choose a criterion for an improvement or deterioration in country 1's trade balance with country 2. Broadly speaking, there are two alternative criteria to be considered, each of which corresponds to a distinct conception of the dollar problem. On the one hand, in conformity with the practice of the modern theory of exchange adjustment, we may measure country 1's trade balance in terms of international currency, and define an improvement in its trade balance as a decrease in the (international currency) value of its trade deficit, or an increase in the value of its trade surplus. This would involve conceiving of the dollar problem in terms of the current-account deficit of the rest of the world with the United States, measured in gold. On the other hand, we may measure country 1's trade balance as a fraction of its imports, and define an improvement in its trade balance as a decrease in the ratio of its import surplus to its imports, or an increase in the ratio of its export surplus to its imports.[2] This would imply conceiving of the dollar problem in terms of the proportion of the imports of the rest of the world from the United States not paid for by exports to the United States.

The first alternative provides a monetary criterion of improvement, and the second provides a "real" criterion of improvement. Unfortunately, except in the case in which trade is initially

[1] Although these elasticities are defined with reference to a change in the relative price of imports, they will be identical with elasticities defined with reference to a change in the absolute price of imports, the price of the home good remaining unchanged, since (on the usual assumption of homogeneous demand functions of zero degree in prices) an equi-proportional change in both prices will leave the quantity demanded unchanged. For the same reason a rise in the price of the home good will have the opposite effect on quantity demanded to that of an equi-proportional rise in the price of imports, so that η_1 can be expressed in terms of π, as in the text. This footnote was suggested by a comment from Mr. I. F. Pearce.

[2] Alternatively, the trade balance could be measured as a fraction of the country's exports.

balanced, an improvement or deterioration on one criterion may not be an improvement or deterioration on the other : a doubling of commodity prices, for example, would double the money value of a deficit or surplus but leave the " real " deficit or surplus unchanged. Nor is there any compelling economic reason for preferring one criterion to the other, since in different contexts we may be interested in either the money balance or the " real " balance, according, for example, to the assumptions made about the source of financing of the balance.

There are, however, two considerations which suggest the adoption of the second criterion in preference to the first.[1] One is that the " real " balance is the more fundamental, and that changes in its money value arising from general movements in prices are more appropriately treated as gains or losses in purchasing power on capital account.[2] The other is that adoption of the second criterion both permits a more satisfactory dynamic formulation of the problem and greatly simplifies the argument. Consequently, the second criterion is adopted here, though the first criterion is developed at various points in footnotes.

The behaviour of a country's " real " balance over time is most conveniently studied through the ratio of the value of its exports to the value of its imports. An increase in this ratio, which is referred to henceforward as " the export ratio," means an improvement in the country's real balance, and vice versa.

Country 1's export ratio is defined as $T_1 = \frac{p_1X_1}{p_2X_2} = \frac{\pi X_1}{X_2}$. Differentiating this by t, and using the symbols defined above, we obtain

$$\frac{dT_1}{dt} = \frac{1}{X_2^2}\left\{X_2\left(X_1\frac{d\pi}{dt} + \pi\frac{\partial X_1}{\partial \pi}\frac{d\pi}{dt} + \pi\frac{\partial X_1}{\partial Y_2}\frac{dY_2}{dt}\right) - \pi X_1\left(\frac{\partial X_2}{\partial \pi}\frac{d\pi}{dt} + \frac{\partial X_2}{\partial Y_1}\frac{dY_1}{dt}\right)\right\}$$

$$= \frac{\pi X_1}{X_2}(r_\pi - \eta_2 r_\pi + \epsilon_2 R_2 - \eta_1 r_\pi - \epsilon_1 R_1)$$

where $r_\pi = \frac{1}{\pi}\frac{d\pi}{dt}$. Substituting for $r_\pi (= r_{p_1} - r_{p_2})$, and defining $R_{T_1} = \frac{1}{T_1}\frac{dT_1}{dt}$, this becomes

$$R_{T_1} = (\eta_1 + \eta_2 - 1)(r_{p_2} - r_{p_1}) + \epsilon_2 R_2 - \epsilon_1 R_1 \quad . \quad (1)$$

[1] The original draft of this article argued entirely in terms of the money balance. The present version owes much to comments from Mr. R. F. Harrod, Professor Milton Friedman, Dr. M. R. Fisher and Mr. A. Asimakopulos.

[2] I am indebted for this argument to Professor Friedman.

This last expression is our basic analytical equation : [1] *it expresses* the rate of change of country 1's export ratio, as a function of the rates of change of prices and the rates of change of productivity in the two countries.[2]

As a guide to the subsequent argument, it may be noted that the right-hand side of the equation falls naturally into two parts. The first expresses the influence of the price-trends, which depends on their relative magnitudes and on whether the sum of the two elasticities of demand for imports is greater or less than unity. The second expresses the influence of the productivity trends, which depends on their relative magnitudes and on the income-elasticities of demand for imports.

II. Income and Price Stability and the Trade Balance

The equation derived in the previous part expresses the general relation between the trade balance (in the form of the export ratio) and price and productivity trends. In this section we deal with the four particular cases which are suggested by the consideration that, either as a matter of policy or as a consequence

[1] Country 1's trade balance, measured in international currency units, is $B_1 = p_1X_1 - p_2X_2$. The equation for its change over time, found by differentiation of B_1 by t, may be expressed as

$$R_{B_1} = \left(\frac{1}{p_1X_1}\frac{dB_1}{dt}\right) = b_1 r_{p_1} + \left(\frac{\eta_1}{T_1} + \eta_2 - 1\right)(r_{p_2} - r_{p_1}) + \left(\epsilon_2 R_2 - \frac{\epsilon_1 R_1}{T_1}\right) \quad (1a)$$

where $b_1 = \frac{B_1}{p_1X_1}$. It should be noted that *in contrast* to the definitions of rates of change employed in the text, the definition of R_{B_1} here is merely a convention employed to simplify the right-hand side of the equation.

The equation is most easily understood as follows. The first term on the right-hand side expresses the fact that an equi-proportional change in both prices would alter the money value of a given real deficit or surplus proportionally. The coefficient of the second term is an analogue of the Hirschmann condition for devaluation to improve the trade balance when trade is initially unbalanced (see A. O. Hirschmann, " Devaluation and the Trade Balance : A Note," *Review of Economics and Statistics*, February 1949), and reflects the fact that, with initially unbalanced trade, the criterion for a price reduction (devaluation) by country 1 to improve its (foreign) balance involves a *weighted* sum of the elasticities of international demand. The third term expresses the fact that, if trade is initially unbalanced, an equi-proportional expansion of each country's imports would alter the money balance.

When trade is initially balanced, the equation for the change in the money balance reduces to the equation given in the text for the real balance. The simplification achieved by consideration of the real rather than the money trade balance might usefully be extended to the whole theory of exchange adjustment.

[2] The equation could be cast in terms of the *rates* of change of money income per head, rather than of prices, by use of the relationship $r_w = r_p + R$; but the resulting expression is much more cumbersome, and consequently is not introduced until the argument requires it.

of the working of economic forces, increasing productivity may result in a proportionately falling price level, aggregate money income remaining constant, or in proportionately rising money income, the price level remaining constant.

(a) *Constant Price Level in Both Countries*

On the assumption that the price level remains constant in both countries and money incomes rise proportionately to increasing productivity, $r_{p_1} = r_{p_2} = 0$, and the basic equation becomes

$$R_{T_1} = \epsilon_2 R_2 - \epsilon_1 R_1 \quad . \quad . \quad . \quad . \quad . \quad (2)$$

Country 1's trade balance turns more favourable or less favourable according to whether $\epsilon_2 R_2$ is greater or less than $\epsilon_1 R_1$; it will remain unchanged if these two expressions are equal.

A number of implications of this result are of interest. If productivity is not increasing in country 1, but is increasing in country 2, country 1's trade balance is bound to improve unless the commodity it produces is an inferior good in the consumption of country 2 (*i.e.*, unless ϵ_2 is negative); conversely, if country 1's productivity is increasing but country 2's productivity is not, country 1's trade balance is bound to deteriorate unless its consumers regard country 2's product as an inferior good.[1]

It does not necessarily follow, however, that when productivity in both countries is increasing the trade balance turns in favour of the country whose productivity is increasing at the slower rate, since the effect of a country's growth on its demand for imports depends on both its rate of increase of productivity and its income elasticity of demand for imports. Thus productivity may be increasing less rapidly in country 1 than in country 2, and the trade balance may turn against country 1, because country 1's income-elasticity of demand for country 2's goods is sufficiently greater than country 2's income-elasticity of demand for country 1's goods to offset the favourable influence of country 1's lower rate of growth.[2]

[1] *Cf.* Hicks, *loc. cit.*, p. 124. Henceforward the argument neglects the possibility of one country's product being inferior in consumption in the other country, and proceeds on the assumption of positive income-elasticities of demand for imports.

[2] In this case the change in the money balance is given by

$$R_{B_1} = \epsilon_2 R_2 - \frac{1}{T_1}\epsilon_1 R_1 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (2a)$$

If initially country 1 has a deficit ($T_1 < 1$) its money trade balance may turn against it, even though its demand for imports is growing less rapidly than country 2's demand for its exports ($\epsilon_1 R_1 < \epsilon_2 R_2$).

In terms of the dollar problem, this result would imply that if productivity increased faster in the United States than it did elsewhere, and if the United States (and the outside world) followed the policy of inflating money incomes proportionately to increases in productivity, a chronic dollar shortage would still be a possibility in consequence of an income-elasticity of foreign demand for American goods sufficiently higher than the American income-elasticity of demand for imports.[1] Such a dollar problem, however, would imply that the rate of increase of productivity in the United States was too low, not too high, relative to that in the rest of the world.

(b) *Price Constant in One Country, Money Income Constant in the Other*

Since the two cases in which price is constant in one country and money income constant in the other are symmetrical, only one of them need by analysed. We shall consider the case in which price is constant in country 1, and money income constant in country 2. In this case $r_{p_1} = 0$ and $r_{p_2} = -R_2$, and the basic equation becomes [2]

$$R_{T_1} = (1 + \epsilon_2 - \eta_1 - \eta_2)R_2 - \epsilon_1 R_1 \quad . \quad . \quad (3)$$

This equation indicates that country 1's trade balance is certain to turn adverse if $(1 + \epsilon_2 - \eta_1 - \eta_2)$ is negative; that is, if the sum of the two elasticities of international demand is greater than one plus country 2's income-elasticity of demand for imports. But country 1's trade balance may improve if the sum of the two

[1] Purely as an illustration, and without any commitment to their relevance or meaningfulness, we may refer to Chang's estimates of the income-elasticities of American demand for imports, 1·27, and of world demand for American exports, 2·917 (T. C. Chang, *Cyclical Movements in the Balance of Payments*, Cambridge, 1951, p. 148). These would imply a dollar problem of the kind described above, unless the United States grew 2·3 times as fast as the rest of the world; but both the estimates and their application here are so dubious that the exercise should not be taken seriously.

[2] The corresponding equation for the behaviour of the money balance is

$$R_{B_1} = (\epsilon_2 + \frac{1}{T_1} - \frac{\eta_1}{T_1} - \eta_2)R_2 - \frac{\epsilon_1 R_1}{T_1} \quad . \quad . \quad . \quad . \quad (3a)$$

and the condition for an improvement in country 1's money balance to be possible is that $\frac{\eta_1}{T_1} + \eta_2$ should be less than $\epsilon_2 + \frac{1}{T_1}$.

From the formula it follows that if country 1's demand for imports is inelastic ($\eta_1 < 1$) increasing productivity in country 2 accompanied by falling prices is more likely to improve country 1's money balance the larger is country 1's initial deficit or the smaller is its initial surplus (the smaller is T_1); but if country 1's demand for imports is elastic ($\eta_1 > 1$) the opposite conclusion follows.

price-elasticities is less than this critical sum; and it will improve if this condition is satisfied *and* R_2 is greater than

$$\frac{\epsilon_1 R_1}{\epsilon_2 + 1 - \eta_1 - \eta_2}$$

The explanation of these results becomes very simple if we neglect the effects of increasing productivity in country 1 and consider the effects of increasing productivity in country 2, accompanied by proportionately falling prices, on country 1's trade balance. These effects are of two kinds. First, increasing productivity in country 2 increases country 2's income, and therefore its demand for imports, through the income-elasticity of demand for imports; this effect tends to improve country 1's trade balance. Second, increasing productivity in country 2 by assumption lowers the price of country 2's goods, and so affects both countries' demands for imports. This effect may work either way: if the sum of the elasticities of international demand is less than unity, the trade balance turns in favour of country 1; if the sum of the elasticities is greater than unity, it turns in favour of country 2. For increasing productivity in country 2 to turn the trade balance against country 1, the sum of the elasticities of demand must be sufficiently greater than unity to outweigh country 1's income-elasticity of demand for imports. If productivity in country 1 is also increasing, and the price level there is constant, there is an unfavourable effect on country 1's trade balance through its increasing demand for imports which must also be considered.

The assumption that the price level is constant in country 1 and income constant in country 2 yields a model analogous to that assumed in the monetary explanation of chronic dollar shortage mentioned in the introduction to this article, if we identify country 2 with the United States and country 1 with the outside world; and the results just stated have some bearing on the theoretical arguments used to demonstrate the reality of "dollar shortage." In the first place, as we have shown, it is not necessarily true that if increasing productivity in the United States resulted entirely in falling prices, and increasing productivity elsewhere resulted entirely in rising money incomes, the trade balance of the United States would turn in its favour. In the second place, a favourable movement of the American trade balance arising from productivity-induced reductions in the prices of American goods would necessarily imply that the responsiveness of world demand to changes in relative prices was sufficiently high for monetary or

exchange-rate adjustments by the outside world to remedy the situation.[1]

This analysis points to a certain inconsistency between the argument that there is a persistent tendency towards dollar shortage because the United States does not inflate incomes sufficiently to keep pace with rising productivity, and the assertion sometimes found in close association with it that the elasticities of international demand are too low for devaluation against the dollar to have a favourable effect on the trade balance of the rest of the world with the United States. The latter assertion ought logically to carry with it the view that the greater the rate of increase in productivity and the less the accompanying inflation of incomes in the United States, the less serious will be the dollar problem of the outside world. The former argument, in so far as it stresses the rapidity of American progress, assumes that the elasticities of international demand are sufficiently high for devaluation against the dollar to be a successful policy.[2]

(c) *Money Income Constant in Both Countries*

On the assumption that money income remains constant in both countries and prices fall proportionately to the rate of increase of productivity, $r_{p_1} = -R_1$ and $r_{p_2} = -R_2$, and the basic equation becomes [3]

$$R_{T_1} = (\eta_1 + \eta_2 - \epsilon_1 - 1)R_1 - (\eta_1 + \eta_2 - \epsilon_2 - 1)R_2 \quad (4)$$

If both coefficients of the rates of growth are positive—that is, if the sum of the elasticities of international demand is greater than unity plus the higher income-elasticity of demand for imports—the trade balance turns towards or against country 1 according to whether R_1 is greater or less than $\frac{\eta_1 + \eta_2 - \epsilon_2 - 1}{\eta_1 + \eta_2 - \epsilon_1 - 1} R_2$. In

[1] While this argument relates to the real balance, it applies *a fortiori* to the money balance, if the United States is assumed to have an initial export surplus ($T_1 < 1$). Devaluation or deflation by the outside world would improve the outside world's dollar balance if $\frac{\eta_1}{T_1} + \eta_2 > 1$, whereas increasing American productivity with falling prices would worsen the outside world's dollar balance only if $\frac{\eta_1}{T_1} + \eta_2 > \epsilon_1 + \frac{1}{T_1}$.

[2] A dollar shortage could emerge under the postulated circumstances, even if the sum of the elasticities of international demand were less than unity; but it would be the result of increasing productivity in the rest of the world.

[3] The corresponding equation for the behaviour of the money balance is

$$R_{B_1} = \left(\frac{\eta_1}{T_1} + \eta_2 - \frac{\epsilon_1}{T_1} - 1\right)R_1 - \left(\frac{\eta_1}{T_1} + \eta_2 - \epsilon_2 - \frac{1}{T_1}\right)R_2 \quad . \quad (4a)$$

This gives the same qualitative possibilities as below, but the conditions demarcating the cases are more complicated.

this case, if country 1's income-elasticity of demand for imports is greater than country 2's, the trade balance must turn against it unless it is growing, and reducing its price level, more rapidly than country 2. If both coefficients are negative (the sum of the elasticities is less than one plus the lower income-elasticity of demand for imports) the trade balance turns towards or against country 1 according to whether R_1 is less than or greater than $\frac{\eta_1 + \eta_2 - \epsilon_2 - 1}{\eta_1 + \eta_2 - \epsilon_1 - 1} R_2$. In this case, if country 1's income-elasticity of demand for imports is greater than country 2's, its trade balance must turn against it unless it is growing less rapidly than country 2.

Finally, if one coefficient is positive and the other negative (the sum of the elasticities lies between one plus the lower and one plus the higher income-elasticity of demand for imports) the trade balance turns in favour of the country with the lower income-elasticity of demand for imports, regardless of the rates of growth. In this case if country 1 has the higher income-elasticity of demand for import its trade balance is bound to turn against it.

The complications of this analysis result from the fact that, by assumption, each country's growth has two effects on the trade balance, one operating through income and the other through relative prices. The effect of increasing productivity in lowering the price of its output may tend either to worsen or to improve its trade balance : if it tends to improve the trade balance, it may or may not do so sufficiently to offset the adverse effect through increasing income.

This case also has some relevance to the monetary version of the increasing-productivity explanation of chronic dollar shortage commented on in previous sections. One might reasonably argue that under modern conditions the most that a restrictive fiscal and monetary policy can be expected to do is to prevent an increase in money income, since an attempt to bring about an actual deflation of incomes would produce unacceptable political and economic strains; and that the alternative of devaluation or depreciation, if it becomes the long-run trend, has seriously adverse effects in the destruction of confidence in and generation of speculation against the currency.[1]

[1] These are admittedly Anglo-centric considerations. Also it should be emphasised that they are judgments about the limitations of monetary techniques of adjustment, the first of which implies an assumption of money illusion with respect to income. A deflation of money income does not necessarily entail a reduction of real income, under the posited circumstances, since productivity is assumed to be rising in both countries. The real income adjustment required by the preservation of the balance of trade is discussed in the next part of this article.

The argument presented in this section indicates that, even on the assumption that productivity rises faster in the United States than it does elsewhere, and that the whole of the impact of rising American productivity falls on prices, it does not necessarily follow that the rest of the world would be forced up against these politico-economic limits of monetary policy. This general problem is pursued further in the next part of the argument.

III. Consistent Income–Price Trends

The analysis presented in Part II was concerned with the behaviour of the balance of trade under alternative assumptions as to the response of prices and money incomes to the increase of productivity in the two countries. In this part we shall be concerned with a different problem, the trend of price and money income required in one country to prevent a change in its balance of trade, given the trend of price and money income in the other country as a datum.[1, 2]

Since the price and income trends in each country are related by the identity $r_w = r_p + R$, the essential problem can be solved by finding the price trend in country 1 required to prevent a change in its trade balance, given the price trend in country 2. This is accomplished by setting $R_{T_1} = 0$ in the basic equation, and solving for r_{p_1} as a function of r_{p_2} : the resulting equation is [3]

$$r_{p_1} - r_{p_2} = \frac{\epsilon_2 R_2 - \epsilon_1 R_1}{\eta_1 + \eta_2 - 1} \quad . \quad . \quad . \quad . \quad (5.\text{i})$$

It is useful, however, to set out explicitly the alternative versions of the required relation between income–price trends in the two countries, which are :

$$r_{p_1} - r_{w_1} = \frac{\epsilon_2 R_2 - \epsilon_1 R_1}{\eta_2 + \eta_2 - 1} - R_2 . \quad . \quad . \quad . \quad (5.\text{ii})$$

[1] A datum, in the sense either of the outcome of economic forces, or of an objective of economic policy; the distinction is illustrated in the ensuing argument.

[2] The analysis which follows assumes that the critical factor $\eta_1 + \eta_2 - 1$, which determines the direction of the effect of a change in relative prices on the trade balance, does not change sign over the relevant range of relative-price change. This assumption seems legitimate in the present context, though it might not be valid for problems involving a very large change in the trade balance, e.g., the correction of a structural imbalance after a war; and the implication of the present section, that there is always some monetary adjustment which will preserve trade balance, should not be extended without further examination to such cases.

[3] The corresponding equation for the behaviour of the money balance is

$$r_{p_1} - r_{p_2} = \frac{b_1 r_{p_2} + \epsilon_2 R_2 - \epsilon_1 R_1/T_1}{\eta_1/T_1 + \eta_2 -} \quad . \quad . \quad . \quad . \quad (5.\text{i.a})$$

$$r_{w_1} - r_{p_1} = \frac{\epsilon_2 R_2 - \epsilon_1 R_1}{\eta_1 + \eta_2 - 1} + R_1 \quad . \quad . \quad . \quad (5.\text{iii})$$

$$r_{w_1} - r_{w_2} = \frac{\epsilon_2 R_2 - \epsilon_1 R_1}{\eta_1 + \eta_2 - 1} + R_1 - R_2 . \quad . \quad (5.\text{iv})$$

These equations can be interpreted and applied in several ways, and a full investigation of their implications is ruled out by considerations of space. The analysis which follows is confined to distinguishing various ways in which the central problem can be posed, and illustrating the ways in which the equations can be applied.[1]

In the first place, it may be of interest to determine the relative rate of change of price or money income in country 1, as compared with that in country 2, which is required to prevent a change in the trade balance. Equations (5.i) to (5.iv) have been set out in the form most convenient for answering this question: the required rate of change of the country 1 trend-variable (price or income) will be (algebraically) greater or less than the rate of change of the country 2 variable shown on the left-hand side in each, according to whether the expression on the right-hand side is positive or negative. Thus (by equation (5.i)) the preservation of an unchanged trade balance requires that price in country 1 should rise more rapidly or fall less rapidly than price in country 2[2] if $\frac{\epsilon_2 R_2 - \epsilon_1 R_1}{\eta_1 + \eta_2 - 1}$ is positive, and rise less rapidly or fall more rapidly than price in country 2[3] if this latter expression is negative.

Secondly (and with more relevance to the dollar problem), it may be of interest to determine whether the preservation of the balance of trade requires an absolute deflation (negative rate of change) of price or income in country 1, given the rate of change of price or income in country 2. This sort of question is answered by transferring the country 2 trend-variable to the right-hand side of the relevant equation, and substituting its assumed actual value; if the resulting expression is negative, then an absolute deflation (of price or money income, as the case may be) is required of country 1. For example (equation (5.iv)), an absolute deflation

[1] The analysis can be extended to determine the rate of change of the exchange rate of either country which is required to prevent a change in the balance of trade, on the assumption that the rate of change of price or money income in terms of local currency is given in both countries, by making use of the relation $r_p = r_p' - r_e$, where r_p' is the rate of change of domestic currency price and r_e is the rate of change of the country's exchange rate, defined as the number of units of local currency required to buy a unit of international currency.

[2] Or perhaps rise while price in country 2 is falling.

[3] Or perhaps fall while price in country 2 is rising.

of money income in country 1 will be required if $R_2 - R_1 + \frac{\epsilon_1 R_1 - \epsilon_2 R_2}{\eta_1 + \eta_2 - 1}$ is (algebraically) greater than the assumed rate of change of money income in country 2. This condition, it may be noted, will not necessarily be fulfilled, even if money income is actually falling in country 2 (r_{w_2} negative) and the rate of increase of productivity in country 2 is greater than in country 1, so that price is falling more rapidly relative to money income in country 2 than it is in country 1. In such circumstances, as equation (5.ii) indicates, it may not even be necessary for country 1 to deflate its price level, let alone its money income, to preserve an unchanged trade balance. On the other hand, in the opposite circumstances —a rising price-trend and a higher rate of increase of productivity in country 2 than in country 1—the preservation of the trade balance might require country 1 to deflate its money income (5.iii).

Thirdly, it may be of interest to determine the minimum rate of increase of money income or price in country 2 which is necessary to permit the trade balance to be preserved without country 1 being obliged to undertake a (secular) deflation of income or price.[1] This is simply another version of the previous type of question, and may be answered by setting the country 1 trend-variable equal to zero and solving for the country 2 trend-variable in the relevant equation. For example (equation (5.ii)), the minimum rate of increase of money income in country 2 required to enable country 1 to preserve the trade balance without a price deflation is

$$r_{w_2} = \frac{\epsilon_1 R_1 - \epsilon_2 R_2}{\eta_1 + \eta_2 - 1} + R_2$$

Since the right-hand expression can be negative, it may not be necessary for country 2 to inflate its income for country 1 to avoid a price deflation.

Finally, although the problem lies outside the scope of this article, equations (5.i) to (5.iv) can be used to throw light on the behaviour of country 1's real income over time, assuming that it follows whatever policy is required to prevent any change in its balance of trade.[2] Equation (5.i) determines the trend of country 1's commodity terms of trade: if its right-hand side is positive,

[1] The obligation here is to preserve the trade balance, not necessarily to prevent a deterioration of the balance; see the remarks below on the application to the dollar problem.

[2] In the following argument "real income" is identified with the purchasing power of money income; this means that, where trade is unbalanced, changes in the purchasing power of the associated "invisible" transfer are ignored. The terms of trade concepts employed are "net," not "gross." Strictly speaking, the argument here should be confined to the case of balanced trade.

country 1's terms of trade will move in its favour over time, and its real income will increase more rapidly than its productivity; if the right-hand side of the equation is negative, country 1's terms of trade will move against it over time, and its real income will increase less rapidly than its productivity. Equation (5.iii) determines the trend of the real value of country 1's income in terms of country 2's product—country 1's single-factoral terms of trade; if the right-hand side of the equation is positive, country 1's real income is necessarily increasing, since its money income will buy an increasing quantity of either good. If the right-hand side of the equation is negative, however, country 1's real income may be either increasing or decreasing, depending on whether or not the decreasing cost of producing its own good outweighs the increasing cost of obtaining country 2's good through exchange. The determination of the conditions under which country 1's real income falls absolutely involves an index-number problem which is beyond the scope of the present analysis.[1] Equation (5.iv) determines the movement of country 1's double-factoral terms of trade: if the right-hand side of this equation is positive, country 1's real income will rise more rapidly than country 2's. From this equation it is evident that the country with the higher rate of increase of productivity does not necessarily enjoy the higher rate of increase of real income.[2]

The application of results arrived at under the second and third heads above to the theoretical dollar-shortage problem requires a certain caution, since the equations do not distinguish between cases in which the elasticities of international demand are high enough for deflation (or devaluation) to improve the trade balance and those in which they are not, while the meaning of the solution of the equation is different in the two cases. If the sum of the elasticities is greater than unity, a value of the country 1 trend-variable higher than that indicated by the relevant equation would turn the trade balance against country 1: the solution of the equation is an upper limit, and the restriction it imposes on the country 1 trend is necessary to prevent an adverse movement in country 1's balance of trade. But if the sum of the elasticities is less than one, a value of the country 1 trend-variable higher than that indicated by the relevant equation would turn country 1's

[1] See H. G. Johnson, "Equilibrium Growth in an International Economy," *Canadian Journal of Economics and Political Science*, November 1953, pp. 495–6, for a criterion in the case of balanced trade.

[2] Real income being defined as in the last footnote but one; psychic comparisons are, of course, impossible without a value judgment precluded by the anonymity of countries 1 and 2.

trade balance in its favour: the solution of the equation is a lower limit, and the restriction it imposes on the country 1 trend is necessary to prevent an adverse movement in country 2's balance of trade.

The implication of these considerations for the theory of dollar shortage is that only on the assumption that the price-elasticities of American demand for imports and world demand for American exports are sufficiently high for devaluation against the dollar to improve the trade balance of the rest of the world with the United States can it be maintained that falling American prices resulting from rapidly increasing productivity force the rest of the world to choose between secular deflation and secular exchange depreciation. On the assumption of adverse elasticities, no price–income trend in the United States could force the latter choice, since any "dollar shortage" could be cured by sufficient inflation or appreciation against the dollar, and a deflationary trend in the United States would necessarily contribute to the cure.[1]

This explanation of dollar shortage therefore requires the assumption of sufficiently high elasticities of international demand for traditional monetary policies to be effective. But even on that assumption, the proposition that American incomes lag behind productivity and American prices tend to fall does not necessarily imply chronic dollar shortage. The analysis presented above and in Part II shows that the outside world would not necessarily have to deflate money incomes, or even prices, even if the whole increase in American productivity were absorbed in price reduction. On the other hand, however, the rest of the world might be obliged to follow policies of secular deflation of prices, and perhaps of incomes, even if money incomes in the United States grew faster than productivity, so that American prices rose.[2]

IV. Income–Price Trends and the Balance of Payments

Throughout the argument of the preceding three sections, we have been concerned with various aspects of the relationship

[1] The argument could, of course, be rescued by drawing a sharp distinction between short-run and long-run elasticities of international demand; or it could be stood on its head, and chronic dollar shortage be attributed to the failure of the United States to pursue a monetary policy sufficiently deflationary to enable the rest of the world to close its dollar gap without an intolerable rate of domestic inflation. Elements of the latter argument may be found in the literature of the post-war dollar problem, but not in a consistently developed form.

[2] Contrast Lionel Robbins, "The International Economic Problem," *Lloyds Bank Review*, January 1953, especially pp. 2–7, where this possibility is denied by implication.

between income–price trends and rates of increase of productivity on the one hand and the behaviour of the balance of trade on the other. Since balance-of-payments equilibrium or disequilibrium depends on the behaviour of the net balance of capital transactions as well as on the behaviour of the trade balance, it may be useful to indicate briefly how the analysis may be extended to consider the effects of increasing productivity and income–price trends on the overall balance of payments, exclusive of balancing items.

To do so, we introduce the symbol $C_1 = \left(\frac{G_2}{p_2X_2}\right)$ to represent the ratio of the net flow (G_2, which may be positive or negative) of autonomous payments on capital account from country 2 to country 1 measured in international currency units, to country 1's purchases of imports from country 2—" the transfer ratio "; and we define $T_1' = T_1 + C_1$ as the ratio of the value of country 1's receipts from country 2 to the value of its purchases from country 2—" the receipts ratio." If $T_1' = 1$, country 1's balance of payments is in equilibrium, and if T_1' increases over time, country 1's balance of payments is improving.

The behaviour of country 1's receipt ratio over time is given by the equation [1]

$$R_{T_1'} = \frac{T_1}{T_1 + C_1} R_{T_1} + \frac{C_1}{T_1 + C_1} R_{C_1} \quad . \quad . \quad . \quad (6)$$

where R in each case stands for the proportional rate of change over time of the subscripted variable. Unlike equation (1), this equation contains the initial values of exports, imports and capital movements, and can therefore, in general, be employed only with reference to a given initial position.

If the value of net capital transfers increases at the same rate as country 1's imports, $R_{C_1} = 0$ and $R_{T_1'} = \frac{T_1}{T_1 + C_1} R_{T_1}$; if it increases at the same rate as country 2's imports, $R_{C_1} = R_{T_1}$ and $R_{T_1'} = R_{T_1}$. In both these cases, which correspond to the assumption that one of the countries lends or gives to the other a constant fraction of its exports or imports, the receipts ratio changes in the same direction as the export ratio, and the analysis of the previous sections applies to the behaviour of country 1's balance of payments as well as its balance of trade. In other cases, the previous analysis can be extended to describe the behaviour of

[1] The corresponding equation for the behaviour of the money balance is $R_{B_1}^* = R_{B_1} + \frac{G_2}{p_1X_1} R_{G_2}$, where $B_1^* = B_1 + G_2$, $R_{B_1}^* = \frac{1}{p_1X_1}\frac{dB_1^*}{dt}$, $R_{G_2} = \frac{1}{G_2}\frac{dG_2}{dt}$ and R_{B_1} is as defined in Part I.

the balance of payments, or the relation between income–price trends required to maintain an unchanged balance of payments, by making use of equation (6).

The simplest way of doing this is to start from the alternative version of (6)

$$R_{T_1'} = \frac{T_1}{T_1 + C_1}\left(R_{T_1} + \frac{G_2}{p_1X_1} R_{C_1}\right)$$

Since we have been interested either in the direction of change, or in the conditions for no change to occur, only the bracketed term on the right-hand side is relevant. From it can be deduced, for example, that the relation between the price-trends of the two countries required to preserve an unchanged balance of payments between them is

$$r_{p_1} - r_{p_2} = \frac{\epsilon_2 R_2 - \epsilon_1 R_1 + \frac{G_2}{p_1X_1} R_{C_1}}{\eta_1 + \eta_2 - 1}$$

For certain problems the analysis can be carried further by substituting expressions in the rates of change of prices and productivity for R_{C_1}. For example, international loans or gifts might be assumed to increase at the same rate as money income in the lending country. On this assumption, $R_{C_1} = (\eta_1 - 1)(r_{p_2} - r_{p_1}) + (1 - \epsilon_1)R_1$ if country 1 is the lending country, and $R_{C_1} = \eta_1(r_{p_2} - r_{p_1}) + R_2 - \epsilon_1 R_1$ if country 2 is the lending country.[1] Alternatively, in the case of reparations payments of constant amount in international currency per unit of time,

$$R_{C_1} = \eta_1(r_{p_2} - r_{p_1}) - r_{p_2} - \epsilon_1 R_1.^{2}$$

The introduction of the variable R_{C_1} makes it possible to consider explicitly [3] another type of problem, the rate of increase of international capital movements relative to the value of trade which is necessary to maintain balance-of-payments equilibrium under various assumptions about income–price trends in the two countries. By setting $R_{T_1'} = 0$, in equation (6), we obtain the intuitively obvious result that, to maintain an unchanged balance of payments, the transfer ratio must change in the opposite direction to the export ratio if country 1 is a capital

[1] In the first case $C_1 = \frac{ap_1Y_1}{p_2X_2}$, and in the second case $C_1 = \frac{bp_2Y_2}{p_2X_2}$ where a is a negative and b a positive constant.

$\frac{1}{p_1Y_1}\frac{d(p_1Y_1)}{dt} = r_{p_1} + R_1$ and $\frac{1}{p_2X_2}\frac{d(p_2X_2)}{dt} = r_{p_2} + \epsilon_1 R_1 - \eta_1(r_{p_2} - r_{p_1})$.

[2] In this case $C_1 = \frac{\bar{G}_2}{p_2X_2}$ where $\bar{G}_2$ is the fixed rate of reparations.

[3] The argument is, of course, implicit in the analysis of Parts II and III.

importer (C_1 positive) and in the same direction as the export ratio if country 1 is a capital exporter (C_1 negative). By substituting for R_{T_1} in this equation according to the assumed income–price trends, we obtain the rate of change of the transfers ratio required to maintain an unchanged balance of payments under the assumed conditions. On the assumption that initially the balance of payments is in equilibrium ($T_1' = 1$) this rate of change of the transfers ratio will maintain equilibrium. For example, the rate of increase of the transfers ratio required to maintain equilibrium with prices constant in both countries is

$$R_{C_1} = \frac{T_1}{C_1}(\epsilon_1 R_1 - \epsilon_2 R_2) = \frac{1}{-b_1}(\epsilon_1 R_1 - \epsilon_2 R_2)$$

where b_1 is the initial ratio of country 1's export surplus to its exports.[1] In the case in which country 1 is initially running a trade deficit (b_1 negative), this equation indicates, as one would expect, that the higher is the rate of increase of productivity in country 2 relative to country 1 the lower is the rate of increase of the transfers ratio required to maintain balance-of-payments equilibrium without a change in the terms of trade between the two countries. However, even with a higher rate of growth of productivity in country 2 than in country 1, an increase in the transfers ratio might be required if country 2's income-elasticity of demand for imports were sufficiently lower than country 1's.

These conclusions are obviously relevant to another aspect of the theory of dollar shortage, the contention that the maintenance of international equilibrium requires the United States to lend abroad on an increasing scale, and that the United States has a chronic tendency not to lend abroad on a sufficient scale to cover its structural export surplus. This contention obviously demands a judgment as to the degree of monetary or real adjustment which the rest of the world can or should be expected to make, and the assumptions selected in the above illustration are only one of the possibilities; but the argument of the preceding section suggests the general conclusion that the need for increasing American foreign lending or gifts cannot be deduced from productivity and income–price trends alone.

More detailed investigation of problems of international lending lies outside the scope of this article. In any case, it would be advisable to approach them with the aid of a rather different model, both because the concept of the transfers ratio ignores problems of amortisation and interest payments and because allowance for interest payments would require a distinction between output and income which is not made in the model employed here.[1]

[1] On the assumption of initial equilibrium, $G_2 = -b_1 \cdot p_1 X_1$. The corresponding equation for the required rate of change of the (international) money value of transfers is:

$$R_{G_2} = \frac{1}{-b_1}((1 - b_1)\epsilon_1 R_1 - \epsilon_2 R_2)$$

V. Conclusion

This article has considered the relation between productivity and income–price trends on the one hand, and the balance of trade on the other, from a variety of points of view. In the process, a number of observations have been made about one theoretical explanation of dollar shortage, that which attributes dollar shortage to the effects of the rapid increase in American productivity in lowering the money prices of American goods relative to the prices of goods produced elsewhere. In concluding, it may be useful to restate the main points of our analysis which bear on this theory.

In the first place, it is necessary to recognise that increasing productivity in the United States affects the American trade balance in two ways, and not just one as this theory implies. In addition to its effect on relative prices of American and foreign goods, increasing American productivity raises American real income and therefore—unless American imports are inferior goods in American consumption—increases American demand for imports. By itself (that is, apart from its effects on relative prices) rapidly increasing American productivity is a factor working against and not towards the emergence of a dollar shortage of the kind described, and could only contribute to the creation of dollar shortage by increasing too slowly to offset the influence of increasing productivity in the rest of the world on the demand for American exports. Consequently, in so far as proponents of this theory emphasise the high rate of increase of American productivity *per se*, rather than its alleged effects on relative prices, their analysis is misleading or wrong.

Secondly, with regard to the effect of increasing American productivity on the relative prices of American and foreign goods, the assumption that relatively falling American prices turn the trade balance of the United States in its favour necessarily implies that elasticities of international demand are high enough for devaluation against the dollar to improve the trade balance of the rest

[1] Cf. H. G. Johnson, *loc. cit.*, Part I, which deals with some of the latter complications in connection with a related problem.

of the world with the United States.[1] Logically, a decrease in American prices relatively to prices in the rest of the world is equivalent to appreciation of other currencies against the dollar,[2] and if appreciation against the dollar worsens the trade balance of the outside world with the United States, depreciation against the dollar must improve it.

Nothing in the argument presented here, however, contradicts the proposition that productivity and price trends in the world economy may lead to a chronic dollar shortage of the type described. Indeed, our analysis points to a number of factors which might contribute to this result. Further, it should be emphasised that our argument has been concerned only with this one theory of dollar shortage, to the exclusion of other possible explanations. We have, for example, abstracted from problems of cyclical instability and chronic stagnation by proceeding on the assumption of the maintenance of full employment.

Finally, a general conclusion implicit in the analysis presented in the preceding sections should perhaps be stated explicitly. It has sometimes been suggested or implied that all would be well in the world economy if each country stabilised prices by allowing money incomes to expand proportionally to increases in productivity. Our analysis shows that there is no such simple rule which defines the long-run monetary policies required to maintain balance-of-payments equilibrium between growing economies under a regime of fixed exchange rates.

Appendix: The n-Country Case[3]

The foregoing argument has been conducted in terms of a two-country model, and its application is restricted to consideration of relations between one country and the rest of the world

[1] This conclusion is strengthened by the consideration that the theory assumes not merely that a relative decrease in American prices improves the American trade balance, but that it improves it by more than is required to offset the income-effect of the increase in productivity which is assumed to bring about the fall in prices.

[2] This is true of the "money" balance only on the assumption of initially balanced trade; but on the assumption of an initial American export surplus, a decrease in American prices has a less favourable effect than an increase in foreign prices on the American "money" trade balance, so that the conclusion just stated is strengthened.

[3] The argument of this Appendix owes much to a paper read by J. J. Polak and Ta-Chung Liu at the 1952 meeting of the Econometric Society on "The Stability of the Exchange Rate Mechanism in a Multi-Country System," and to the comments on it made by N. Georgescu-Roegen. The discussion is reported in *Econometrica*, Vol. 21, No. 3 (July 1953), pp. 468–70.

taken as a whole. In this appendix we shall discuss briefly the extension of the model to a world of n countries, each of which is assumed to produce a single good, the output of which is increasing at a given rate, and to consume its own and other countries' products in quantities determined by its own output (income) and the relative prices of the various goods.

On these assumptions, the export ratio of country i is

$$T_i = \frac{\sum_{j \neq i} p_i X_{ji}}{\sum_{j \neq i} p_j X_{ij}} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad \text{(i)}$$

where X_{ji} is the quantity of exports from country i to country j and p_i is the price of country i's output in international currency units; and the basic equation for the behaviour of country i's trade balance over time is

$$R_{Ti} = \sum_j \left(\frac{p_j}{T_i} \frac{\partial T_i}{\partial p_j} r_j + \frac{Y_j}{T_i} \frac{\partial T_i}{\partial Y_j} R_j \right) \quad . \quad . \quad . \quad \text{(ii)}$$

where r_j and R_j are respectively the price and productivity trends in country j.

On differentiation and re-arrangement of terms this becomes

$$R_{Ti} = \sum_{j \neq i} (x_{ji}\eta_{ji.i} + x_{ji} - m_{ij}\eta_{ij.i})r_i - \sum_{j \neq i} m_{ij}\epsilon_{ij}R_i + \sum_{k \neq i} \sum_{j \neq i} (x_{ji}\eta_{ji.k} - m_{ij}\eta_{ij.k} - m_{ik})r_k + \sum_{k \neq i} x_{ki}\epsilon_{ki}R_k \quad . \quad \text{(iii)}$$

where $\eta_{ji.k}\left(= \frac{p_k}{X_{ji}} \frac{\partial X_{ji}}{\partial p_k} \right)$ is the elasticity of j's demand for i's good with respect to a change in the price of k's good; $\epsilon_{ki}\left(= \frac{Y_k}{X_{ki}} \frac{\partial X_{ki}}{\partial Y_k} \right)$ is the income-elasticity of k's demand for i's good; and $x_{ji}\left(= \frac{p_i X_{ji}}{\sum_{j \neq i} p_i X_{ji}} \right)$ and $m_{ij}\left(= \frac{p_j X_{ij}}{\sum_{j \neq i} p_j X_{ij}} \right)$ are the proportional shares of i's exports to and imports from j in i's total exports and total imports. This equation can be re-written more simply as

$$R_{Ti} = (1 - \bar{\eta}_{w.i} - \bar{\eta}_{i.w})r_i + \sum_{k \neq i} (\bar{\eta}_{w.k} - \bar{\eta}_{i.k} - m_{ik})r_k - \bar{\epsilon}_i R_i + \sum_{k \neq i} x_{ki}\epsilon_{ki}R_k \quad . \quad \text{(iv)}$$

where $\bar{\eta}_{w.i}\left(= -\sum_{j \neq i} x_{ji}\eta_{ji.i} \right)$ is the elasticity of the rest of the world's demand for i's exports with respect to a change in i's price and $\bar{\eta}_{i.w}\left(= \sum_{j \neq i} m_{ij}\eta_{ij.i} \right)$ is the elasticity of i's demand for imports with respect to an equi-proportional change in their prices,[1] both defined with the conventional change of sign;

[1] On the assumption that a rise in i's price has the same effect on i's demand for imports as an equi-proportional fall in all other prices.

$\bar{\eta}_{w.k}(= \sum_{j \neq i} x_{ji}\eta_{ji.k})$ is the elasticity of the rest of the world's demand for i's exports, and $\bar{\eta}_{i.k}(= \sum_{j \neq i} m_{ij}\eta_{ij.k})$ is the elasticity of i's demand for imports, with respect to a change in the price of k's good; and $\bar{\epsilon}_i(= \sum_{j \neq i} m_{ij}\epsilon_{ij})$ is the income-elasticity of i's demand for imports.

Equations (iii) and (iv) express the behaviour of country i's export ratio over time, as a function of price-trends (operating through own-price and cross elasticities of demand) and productivity-trends (operating through income-elasticities of demand) in the world economy. For brevity, we shall ignore the influence of productivity trends and consider only the influence of price trends, leaving the interested reader to pursue the analysis along the lines indicated for the two-country case.

On the usual assumption that an equi-proportional change in all prices would leave quantities demanded unchanged, equal price-trends in all countries would leave each country's export ratio unaltered: consequently, on this assumption the sum of the coefficients of the price-trend terms in equations (ii)–(iv) will be zero. Making use of this relationship, and ignoring productivity changes, equation (iv) may be re-written

$$R_{Ti} = (\bar{\eta}_{i.w} + \bar{\eta}_{w.i} - 1)(r_a - r_i) + \sum_{k \neq i} (\bar{\eta}_{w.k} - \bar{\eta}_{i.k} - m_{ik})(r_k - r_a) \quad . \quad \text{(v)}$$

The term r_a can represent anything at all; but it can most usefully be employed either to represent the price trend in any one of the n countries, so that one of the price-trend terms can be eliminated,[1] or to represent any sort of average of price-trends in the various countries. For our purpose, the latter is the more interesting.

On the assumption that r_a represents the average trend of prices in the world economy, equation (v) exhibits the influence of price trends on country i's export ratio as the sum of two terms. The first is the effect on i's export ratio of the movement of country i's price level relative to the general level of world prices, which will be favourable if the sum of the elasticities of demand for its exports and its demand for imports is greater than one and its price level is falling relative to the world price level, or if the sum of the elasticities is less than one and its price level is rising relative to the world price level. The second term is the sum of

[1] For example, in a two-country world equation (v) reduces to

$$R_{T_1} = (\eta_1 + \eta_2 - 1)(r_2 - r_1)$$

(the price-trend term employed in the main argument of the article).

the effects on the export ratio of the deviations of the price-trends of other countries from the world trend: the net effect will be favourable if the goods whose prices increase relatively to the world price level are close substitutes for the product of country i in world consumption, so that a rise in their prices improves i's export ratio, and the products whose prices fall relatively to the world price ratio are remote substitutes for or complements to i's product in world consumption,[1] so that a rise in their prices would worsen i's export ratio; and vice versa.

This second term introduces complications not allowed for in the two-country model. To illustrate, assume that the sum of the elasticities of demand for country i's imports and exports is greater than unity; then, according to the two-country model, i's trade balance would necessarily improve if prices in the rest of the world rose relatively to the price of i's good. In the n-country model, however, this result need not hold if prices in the other countries, though increasing relatively to the price of i's good, are rising at different rates; and country i may have to deflate or devalue in order to preserve its trade balance, even though its price level is rising less rapidly than that of any other country. Conversely, if the sum of the elasticities is less than unity, and i's price level is rising faster than that of any other country, its trade balance may nevertheless turn adverse; but in this case deflation or devaluation would further worsen the situation.

HARRY G. JOHNSON

King's College,
Cambridge.

[1] The terms "substitute" and "complement" are employed here in the loose sense, and not in the technical sense defined by demand theory; nor is the argument intended to be rigorous.

THE 1948–49 AMERICAN RECESSION [1]

IN this paper I shall attempt to prove that the most important cause of the 1948–49 American recession was a substantial fall in fixed investment which began in the early part of 1948.

The recent controversy in the ECONOMIC JOURNAL about the causes of the recession may have been misleading.[2] Originally, Professor Hamberg listed three causes of the recession : " a decline in the ratio of total consumption to national income and a sharp decline in the rate of growth of consumption, a policy of monetary restriction carried out by the Treasury and the Federal Reserve System, and a sharp and abrupt decline in the country's merchandise export trade." [3] He concluded his argument by saying that the most important explanation of the recession is an underconsumptionist one. In their reply Messrs Bratt and Ondrechen consider Professor Hamberg exaggerated the role of consumer expenditure. They also say, " The most reasonable explanation of the decline in inventory investment is change in the price situation." [4] They allow that consumer demand may have played a part in reducing prices, but contend that there were other more important factors. These were : (1) the break in food prices which occurred in the early months of 1948; (2) declining liquid funds and restrictive monetary policies; (3) reduced exports of key manufactured products; and (4) " There were other expenditure streams which were important in reducing aggregate demand, and, consequently, in reducing inflationary pressures. Notable were the reductions which occurred in expenditure for construction and producers' durable equipment in the first half of 1949." [5] But, " a general deficiency of demand for construction at this time, however, is not indicated." [6] And, " Even though declines did occur in private expenditure for construction and

[1] In preparing this paper I have benefited considerably from helpful comments and suggestions of, as well as the interest shown by, Mr. N. Kaldor and Professor R. F. Kahn. I have also been helped by the comments of the assessor of the paper and by reading a communication upon the same subject by Mr. J. Grieve Smith of the Treasury. I alone am responsible for any errors and omissions.

[2] See D. Hamberg, " The Recession of 1948–49 in the United States," ECONOMIC JOURNAL, Vol. LXII, pp. 1–14 (March 1952), and E. C. Bratt and J. P. Ondrechen, " The 1948–49 Recession Re-examined," ECONOMIC JOURNAL, Vol. LXIII, pp. 98–103 (March 1953), with D. Hamberg, " A Rejoinder," pp. 104–110.

[3] *Loc. cit.*, p. 2.

[4] *Loc. cit.*, p. 102.

[5] *Loc. cit.*, p. 102.

[6] *Loc. cit.*, p. 103.

equipment, the fact that the decline was limited is of notable importance." [1]

This small influence allowed to fixed investment—and then only for a short period in the middle of the recession—is made even smaller in Professor Hamberg's rejoinder. After reaffirming his belief in the importance of the fall in the growth of consumption, especially of non-durables, he comments, " What decline in fixed investment outlays in the private sector of the economy did occur (during 1949, after the recession was well under way) may be assumed to have been largely of the induced variety, responding to the decline in aggregate output. But the very fact that the recession was minor and was largely confined to inventory investment, is *prima facie* evidence of the strength underlying the demand for the vast bulk of private fixed investment." [2]

In what follows I shall attempt to show that a different explanation of the recession is more plausible in the light of the statistical facts. First, while the inventories of durable goods manufacturers took little or no part in the general rise in inventories during 1948, during 1949 the fall of such inventories accounted for approximately two-thirds of the total fall. Secondly, the demand for durable goods which was related to the inventory cycle of durable goods manufacturers appears to have been mainly that of producers. Capital expenditures on non-farm plant and equipment started to fall in the second quarter of 1948, and by the last quarter of 1949 had fallen by 25%. Both inventories and purchases of durable goods fell. Thirdly, the decline in non-durable goods manufacturers' and in retailers' inventories in 1949 was negligible. Farm inventories fell. It is not argued that the cessation of inventory investment in these sectors was unimportant. On the other hand, it is suggested that the inventory cycle of durable goods manufacturers was distinct from the inventory cycle of the other sectors. Finally, it is difficult to establish a simple connection between the fall in the growth of consumption and the fall in fixed investment, because in several important manufacturing industries the fall in fixed investment occurred before the fall in the growth of consumption—which was very slight in any case—was apparent.

The main features of the course of the recession would appear to be as follows. The basic cause was the coincidence of a fall in private fixed investment with a downswing in the inventory investment cycle of non-durable goods manufacturers, retailers and farms. The lowered rate of production was further influenced

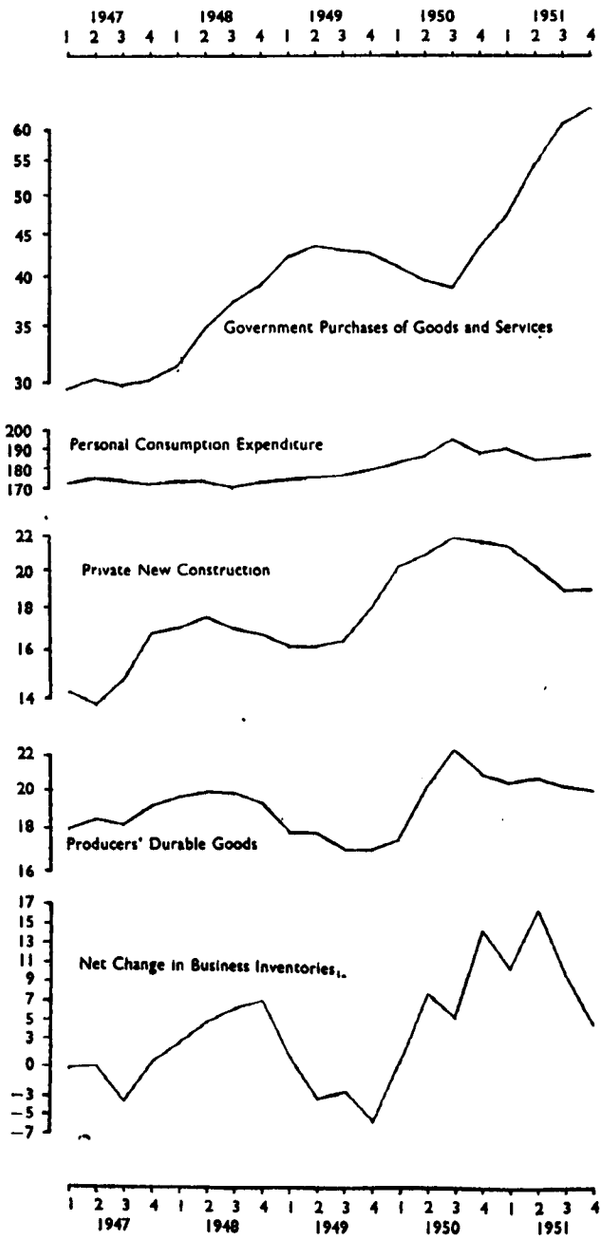
[1] *Loc. cit.*, p. 104.

[2] *Loc. cit.*, p. 109.

CHART I

Components of Gross National Product ($ billion)

Seasonally adjusted at annual rates. Deflated and on ratio scale (except net change in business inventories).



Note : Scale for net change in business inventories differs from that for other series.

by the reduction in durable goods manufacturers' inventories, the main cause of which was the fall in fixed investment, although other causes, such as normal speculation over a fall in raw-material prices may have played a part. The recession was modified by the continued rise in consumption during 1949, the continued rise in public new construction during the same year, the relative stability of private new residential construction and the high rate of Government expenditures in the first half of 1949.

Messrs Bratt and Ondrechen's discussion appears to explain the non-durable goods manufacturers', retailers' and farm inventory cycle satisfactorily. The remainder of this paper examines the other factors in the recession and attempts to assess their importance. Attention will first of all be drawn to inventory changes. This particular approach to the problems of the recession, which is dictated by the nature of previous discussions, should not obscure the final object of the inquiry—the movements of demand and production.

THE INVENTORY FLUCTUATIONS OF 1948–49

There was a quarterly increase in total business inventories which rose from the fourth quarter of 1947 (1947 IV) to 1948 IV and fell in 1949 I (see Chart I). Thereafter inventories were actually reduced in 1949 II, III and IV. In 1950 I there was no

TABLE I

Change in Book Value of Inventories

($ million)

	1948.			1949.		
Manufacturers	—	—	2,750	—	—	−2,744
Durable goods industries	—	1,459	—	—	−1,770	—
Purchased materials	503	—	—	−1,038	—	—
Goods in process	199	—	—	−668	—	—
Finished goods	757	—	—	−65	—	—
Non-durable goods industries	—	1,291	—	—	−974	—
Purchased materials	47	—	—	−701	—	—
Goods in process	35	—	—	−125	—	—
Finished goods	1,209	—	—	−148	—	—
Retailers	—	—	1,818	—	—	−620
Durable goods	—	1,246	—	—	−294	—
Non-durable goods	—	572	—	—	−326	—
Wholesalers	—	—	369	—	—	−69
Durable goods	—	469	—	—	−32	—
Non-durable goods	—	−100	—	—	−37	—

Source: Business Statistics, 1953 Supplement, *Survey of Current Business*, p. 16; *Survey of Current Business*, March 1952, p. 7.

change, while in 1950 II inventories increased substantially. What sectors of business were affected? A break-up of inventory book value changes by sectors is shown in Tables I and II.

TABLE II

Percentage Change in Book Value of Inventories

	1948.			1949.		
Manufacturers	—	—	9·47	—	—	−8·63
Durable goods industries	—	10·23	—	—	−11·26	—
Purchased materials	9·57	—	—	−18·03	—	—
Goods in process	3·89	—	—	−12·56	—	—
Finished goods	19·45	—	—	−1·40	—	—
Non-durable goods industries	—	8·75	—	—	−6·07	—
Purchased materials	0·64	—	—	−9·47	—	—
Goods in process	1·65	—	—	−5·80	—	—
Finished goods	22·85	—	—	−2·28	—	—
Retailers	—	—	13·60	—	—	−4·08
Durable goods	—	23·33	—	—	−4·46	—
Non-durable goods	—	7·12	—	—	−3·79	—
Wholesalers	—	—	4·85	—	—	−0·86
Durable goods	—	15·16	—	—	−0·90	—
Non-durable goods	—	−2·21	—	—	−0·84	—

It is obvious that the largest inventory book value increases during 1948 were those of durable goods. In both manufacturing and retailing the difference between durables and non-durables is striking. Retailers' durable inventories increased by 23·3%, while retailers' non-durable inventories increased by 7·1%. The significance of the 1948 figures is, however, best seen in comparison with those of 1949. Manufacturers' inventories fell in value by almost five times as much as those of retailers, while those of durable goods manufacturers fell by almost twice as much as those of non-durable goods manufacturers. The percentage fall in durable goods is also almost twice as great as non-durables in manufacturing. But the difference between manufacturers and retailers is the most striking. It means that the reduction in manufacturers' inventories accounted for approximately 75% of the total fall in non-farm inventories during 1949, and the durable goods manufacturers for 50% alone.

However, changes in the book values need to be adjusted for stock appreciation or depreciation to obtain volume changes—net changes—which were the changes referred to in the introduction to this paper. Changes in volume are shown in Tables III and IV.

Comparison of these tables shows that whereas the inventories of all sectors increased during 1948, in 1949 almost the whole of the non-farm inventory fall occurred in the manufacturing sector.

TABLE III

Change in Volume of Inventories, 1948 (*Net Change*)

($ million)

	Change in book value.	Inventory valuation adjustment.	Change in volume.
Manufacturers	2,746	−1,532	1,214
Retailers	2,337	−587	1,750
Wholesalers	725	58	783
All other non-farm	355	−385	−30
TOTAL, NON-FARM	6,163	−2,446	3,717
Farm			1,312
TOTAL			5,029

Source: National Income, 1951 Supplement, *Survey of Current Business*, Table 33, p. 200.

In Tables V and VI the change in the volume of manufacturers' inventories is analysed.[1]

These calculations show a striking contrast between durables and non-durables. Whereas during 1948 durable goods inventories show a slight fall compared with a large rise for non-durables during 1949 when non-durables inventories were approximately constant, durables were reduced considerably. In fact, almost the whole of the net change in manufacturers' inventories was located within the durable goods industries.

[1] The totals of the inventory valuation adjustment are those given in Table III and IV. The sources give different totals for change in book value by sector although for manufacturing the differences are slight, *i.e.*,

	1948.
Table III	2,746
Table V	2,755 (based on seasonally adjusted data)
Table I	2,750
	1949.
Table IV	−2,704
Table VI	−2,762 (based on seasonally adjusted data)
Table I	−2,744

Consequently, the total manufacturing change in volume obtained in Tables and VI differs slightly from that in Tables III and IV. In Tables V and VI t change in book value and the 1949 inventory valuation adjustment figures a all those recently revised by the Department of Commerce. The 1948 invento valuation adjustment figures have not recently been revised, although they a given by the Department as their official series.

TABLE IV

Change in Volume of Inventories, 1949 (Net Change)

($ million)

	Change in book value.	Inventory valuation adjustment.	Change in volume.
Manufacturers	−2,704	1,228	−1,476
Retailers	−762	725	−37
Wholesalers	−418	540	122
All other non-farm	−438	220	−218
TOTAL, NON-FARM	−4,322	2,715	−1,609
Farm			−873
TOTAL			−2,482

Source: *Survey of Current Business*, July 1953, Table 33, p. 24.

TABLE V

Change in the Volume of Manufacturing Inventories, 1948 (Net Change)

($ million)

	Change in book value.	Inventory valuation adjustment.	Change in volume.
Durable goods industries	1,398	−1,545	−147
Primary metals, Fabricated metal products	566	−467	99
Electrical machinery	23	−252	−229
Non-electrical machinery	389	−427	−38
Motor vehicles	228	−210	18
Other transportation equipment	−61	−121	−182
Furniture and fixtures	12	−26	−14
Lumber	154	−9	145
Stone, clay, glass	87	−33	54
Non-durable goods industries	1,165	150	1,315
Food	−82	306	224
Tobacco	166	−64	102
Textile mills	198	−52	146
Apparel	73	1	74
Leather	0	46	46
Paper	91	−13	78
Chemicals	77	58	135
Petroleum	569	−132	437
Rubber	73	0	73
Not allocated	192	−137	55
TOTAL	2,755	−1,532	1,223

Source: (1) Changes in Book Value: 1953 Supplement, *Survey of Current Business*, pp. 19, 20, 21.
(2) Inventory Valuation Adjustment: 1951 Supplement, *Survey of Current Business*, Table 22, pp. 176-7.

TABLE VI

Change in the Volume of Manufacturing Inventories, 1949 (Net Change)

($ million)

	Change in book value.	Inventory valuation adjustment.	Change in volume.
Durable goods industries	−1,665	199	−1,466
Primary metals, Fabricated metal products	−410	164	−246
Electrical machinery	−284	−34	−318
Non-electrical machinery	−442	−63	−505
Motor vehicles	−287	72	−215
Other transport equipment	−103	−15	−118
Furniture	−29	35	6
Lumber	−73	40	−33
Stone, clay, glass	−37	0	−37
Non-durable goods industries	−926	974	48
Food	−98	177	79
Tobacco	3	−8	−5
Textile mills	−209	124	−85
Apparel	−143	74	−69
Leather	−29	17	−12
Paper	−120	99	−21
Chemicals	−185	339	154
Petroleum	−69	112	43
Rubber	−76	40	−36
Not allocated	−171	55	−116
TOTAL	−2,762	1,228	−1,534

Source: (1) Changes in Book Value: 1953 Supplement, *Survey of Current Business*, pp. 19, 20, 21.
(2) Inventory Valuation Adjustment: *Survey of Current Business*, July 1953, p. 19.

The experience of individual industries is interesting. The sequence of accumulation and decumulation of inventories in the clothing industries will be noted below, where the fall in exports during 1948 is mentioned. The fact that inventories in the motor vehicle industry showed little change during 1948 will be considered below when the state of consumers' demand for durables is discussed. But what appears to be the most impressive feature of the analysis shown in the tables is the substantial fall in the metals and machinery industries—a fall which had actually commenced, for machinery at least, during 1948.

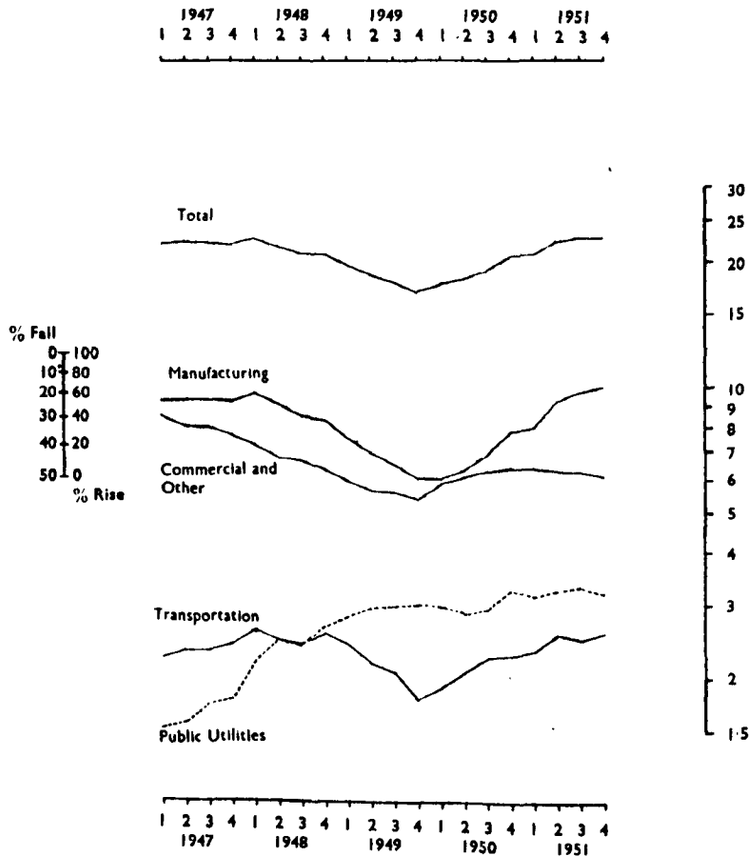
The tables presented above illustrate the cessation of inventory investment by retailers, non-durable goods manufacturers and farms during 1949. Attention was drawn to these features of the recession at the time, and has been drawn since. Here we shall

inquire into the changes in demand for durable goods—the products whose manufacturers made the largest inventory reductions during 1949.

CHART II

Business Expenditures on New Plant and Equipment ($ billion)

Seasonally adjusted at annual rates. Deflated and on ratio scale. (Excluding farm expenditure and outlays charged to current account.)



THE DEMAND FOR DURABLE GOODS

What explanation can be offered to explain the features of the inventory cycle discussed above? How did demand behave? The most striking feature about demand—and the most striking feature in the whole economy at the time—is that between 1948 I and 1949 IV total private, non-farm capital expenditures on new plant and equipment fell in real terms by 25% (see Chart II).

Total private new construction fell between 1948 II and 1949 III by 7%. Total expenditures on producers' durable equipment—including farm expenditures and outlays charged to current account—fell by over 14% between 1948 II and 1949 IV (see Chart I). These percentages and the data in the charts are based on deflated, seasonally adjusted, quarterly figures at annual rates.[1] The break-up of total capital expenditures is interesting (see Chart II). In manufacturing as a whole, capital expenditures declined by 38%. For the second largest group, "Commercial and other," [2] the decline was in progress as early as 1947 I, and altogether this sector's expenditures fell by almost 36%. For total transportation, a relatively minor group although it includes railroads, expenditures between 1948 I and 1949 IV fell by 32%. The expenditure of public utilities, also a small group, rose over the period.

These figures appear to be significant for various reasons. First, the fall in purchases of plant and equipment is substantial, not negligible. This fall is more obvious in the quarterly figures

[1] Capital expenditures on new plant and equipment includes both new construction and producers' durable goods. To it, to obtain total private fixed investment, need to be added private residential new construction, farm equipment and construction, and business outlays charged to current account. (For the relative magnitudes of these items see Table VII in the text.) The deflator used for capital expenditures on new plant and equipment was constructed from combining the Department of Labour wholesale price index of machinery and motive products with the Department of Commerce Composite Construction Cost Index, with weights of 61·2 and 38·8%, respectively. These were the relative proportions of the totals in constant 1939 $ of new construction and producers durable goods from 1947–49. (See 1951 National Income Supplement, *Survey of Current Business*, Table A, p. 146.) Ordinary three-monthly averages were taken for each quarter. Each index is on base 1947–49 = 100.

The deflators used in Chart I are as follows:

Producers' durable equipment: Department of Labour Wholesale Price Index of Machinery and Motive Products.

Private new construction: Department of Commerce Composite Construction Cost Index.

Personal Consumption expenditure: Department of Labour Consumer Price Index.

Government Purchases of goods and services: Department of Labour Consumer Price Index. (This is the least satisfactory of the deflations carried out.)

Sources of Charts I and II:

Gross national product components: 1953 Supplement, *Survey of Current Business*, p. 7; 1951 National Income Supplement, *Survey of Current Business*, Table 43, p. 207.

Capital expenditures on plant and equipment: *Survey of Current Business*, August 1952, Table 2, p. 21.

[2] "Commercial and other" includes commerce, construction and communications.

presented than in yearly totals. It is suggested that quarterly figures are most relevant because they do in fact show considerable quarterly changes, and because it is reasonable to suppose that the effects of such quarterly changes upon production and inventories—especially goods in process and stocks of raw materials—will be felt within periods shorter than a year. Secondly, the rise in public new construction—although it was substantial in 1949—was not great enough to offset the fall in private fixed investment. Unfortunately official quarterly seasonally adjusted figures of the subdivisions of total new construction are not available in the

TABLE VII

Gross Fixed Investment

(Constant 1947 $ billion)

	1947.	1948.	1949.
Private fixed investment	32·0	34·1	31·0
Residential new construction (non-farm)	6·3	7·8	7·6
Farm producers' durable equipment	1·5	1·9	2·0
Farm new construction	1·4	1·4	1·4
Business producers' durable equipment	15·1	14·2	11·4
Business new construction	5·5	6·1	6·0
Other new construction (includes religious, entertainment, educational)	0·6	0·9	1·1
Outlays charged to current account	1·6	1·8	1·5
Public new construction	3·4	4·4	5·9

Sources:

New construction: 1953 Statistical Supplement, *Survey of Current Business*, p. 32.

Farm producers' durable equipment: *Survey of Current Business*, August 1953, Table 1, p. 18 (in constant 1947 $).

Business producers' durable equipment: *Survey of Current Business*, August 1952, Table 1, p. 20 (Capital Expenditures on Plant and Equipment less Industrial, Commercial and Public Utility New Construction).

Outlays charged to Current Account: *Survey of Current Business*, November 1953, Table 4, p. 17.

Deflators:

Producers' durable equipment: Department of Commerce Implicit Price Deflator for Producers' Durable Equipment, *Survey of Current Business*, November 1953, Table 7, p. 19. 1948 = 108·0, 1949 = 112·1.

New construction: Department of Commerce Implicit Price Deflator for Private New Construction, *Survey of Current Business*, July 1953, Table B, p. 27. Converted to 1947 base. 1948 = 110·2, 1949 = 108·4.

As is explained in the sources, the procedures used in estimating the various items in the table differ.

sources used. Nevertheless, the yearly totals, although they are as explained above not quite appropriate for the purpose, support the statement. These yearly totals are compared in Table VII. Thirdly, it seems that if price indexes measuring the changes in the costs of plant and equipment, different from the one actually

used, are employed as deflators, the conclusions are unaltered, although the magnitudes may alter. The peaks and troughs appear to be invariant to minor changes in the composition of the index. Fourthly, the fact that certain types of construction remained constant or actually rose during 1948–49—as did public new construction—does not lessen the importance of the fall in private fixed investment. In a short period of six months to a

TABLE VIII

Producers' Durable Equipment: New Orders and Shipments

Monthly Average

	Current prices.			1947 prices.[1]		
	1947.	1948.	1949.	1947.	1948.	1949.
Machine tools:						
Index of value of new orders	74·3	77·2	69·1	74·3	71·7	61·3
Index of value of shipments	86·2	81·3	70·2	86·2	75·5	62·2
1945–47 = 100						
Foundry equipment:						
Index of value of new orders	460·4	344·2	168·4	460·4	313·8	143·3
1937–39 = 100						
Industrial Furnaces:						
Value of new orders (electric), $ thousand	650	486	440	650	468	421
Value of new orders (fuel fired), $ thousand	1,275	883	533	1,275	805	454
Electric motors and generators:						
Value of new orders index 1936 = 100	388	304	239	388	293	229
Cast-iron boilers:						
Shipments by weight	27,177	21,942	17,191	—	—	—
Oil burners:						
Number of shipments	93,946	34,972	49,493	—	—	—

[1] The price deflators are those used by the Department of Commerce in estimating constant 1947 dollar G.N.P. See *Survey of Current Business*, November 1953. For machine tools I used their metal-working machinery deflator, with, for 1947 = 100, 1948 = 107·7 and 1949 = 112·8. For the electrical items I used the electrical machinery deflator, 1948 = 103·8 and 1949 = 104·5, and for the other the General Industrial Machinery deflator, 1948 = 109·7 and 1949 = 117·5.

Sources: Statistical Supplement, *Survey of Current Business*, 1953, pp. 164, 166, 167.

year the different types of resources used in different types of fixed investment cannot easily be transferred. As far as demand was concerned there was nothing to offset the fall in purchase of a wide range of types of machinery. (The important exception was automobiles. This is discussed below.) Table VIII shows the

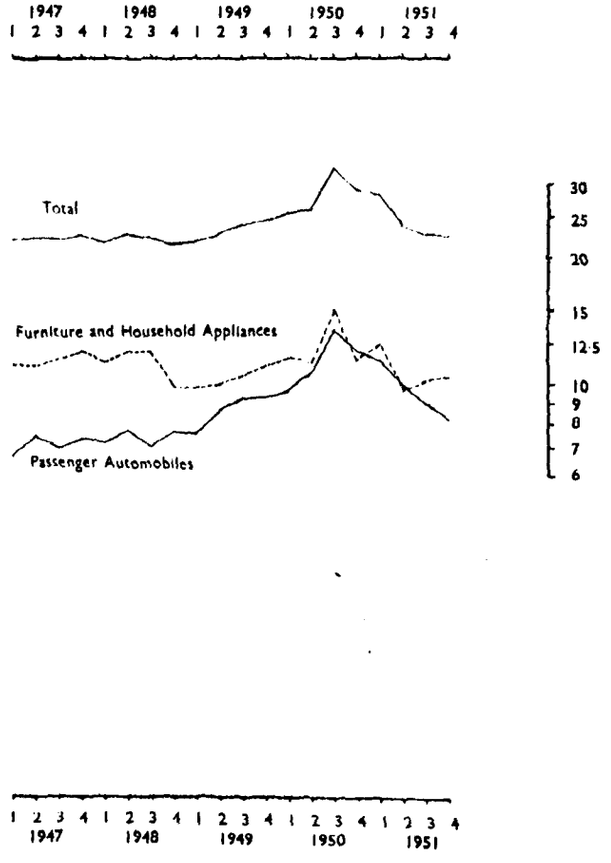
fall in demand during 1948–49 for several important types of producers' durable equipment.

In the six categories included in Table VIII the reduced demand is apparent from the constant 1947 price figures. At current prices, only new orders for machine tools increased in

CHART III

Personal Consumption Expenditures on Durable Goods ($ billion)

Seasonally adjusted at annual rates. Deflated and on ratio scale.



1948, but as the deflating index is a very suitable one in this case, this increase can be disregarded.

From the different varieties of evidence presented, there appears to be no doubt that private fixed investment fell substantially in 1948, and fell even more in 1949.

We now consider the demand for consumers' durable goods. The changes in consumers' expenditures in 1948 and 1949 were different from the changes in producers' expenditures. This fact is illustrated in Table IX.

TABLE IX

Personal Consumption Expenditures (*Constant* 1939 *dollars*)

($ billion)

	Total.	Durables.	Non-durables.	Services.
1946	95·7	10·4	50·2	35·2
1947	98·3	12·3	49·5	36·4
1948	100·3	12·6	49·7	38·0
1949	103·2	12·9	50·7	39·6
1950	108·9	15·5	51·7	41·7
1951	108·5	13·4	52·4	42·6
1952	111·4	12·9	54·5	44·0

Source: *Survey of Current Business*, February 1954, Table 1, p. 5.

Total consumption—in terms of constant 1939 dollars—of consumers' durables increased in 1948 and again in 1949 by approximately 3% in both years. This growth had fallen from an increase in 1947 over the 1946 figure of approximately 20%. Examination of the deflated quarterly figures [1] (see Chart III) shows the following pattern: consumers' purchases of durables fell slightly in 1948 I from the 1947 IV peak, rose to a new peak in 1948 II, almost stayed at the peak in 1948 III, dropped slightly in 1948 IV and 1949 I, and then commenced a steady rise in 1949 II.

A comparison of the yearly totals of the two most important groups of consumer durables, automobiles and parts and household equipment, shows that expenditures in money terms increased for both groups in 1948, while in deflated values they increased by more than 1% for automobiles and declined by less than 2% for household equipment (see Table X).

The quarterly figures—see Chart III—show that automobile sales increased irregularly over the whole period. Household equipment sales increased during 1947, dropped in 1948 I, reached

[1] Total durable expenditures are deflated by means of the Consumer Price Index. As this is unsatisfactory, alternative figures for the two main groups, automobiles and parts and household goods, are given. The deflators are the Department of Labour Wholesale Prices Indexes of Motor Vehicles and Furniture and other Household Durables. Source of Chart III: Total Durables, as for Gross National Product Components. Automobiles and Household, for 1949–51, 1953 Supplement, *Survey of Current Business*, p. 43; for 1947–48, 1949 Supplement, *Survey of Current Business*, p. 41. (Furniture and household equipment plus other durable goods subtracted from G.N.P. durable goods to obtain automobiles and parts.)

a high " plateau " in the second and third quarters of that year and fell considerably in 1948 IV and 1949 I. They started to increase again in 1949 II, and continued to increase during the remainder of the year. Thus while the rate of increase in automobile sales accelerated during 1949, household equipment sales,

TABLE X

Personal Expenditures on Durable Consumption Goods

($ billion)

	Money value.		Deflated.	
	Automobiles.	Household.	Automobiles.	Household.
1947	6·6	10·8	7·2	11·3
1948	7·5	11·4	7·4	11·2
1949	9·4	10·7	8·7	10·4
1950	12·3	13·0	11·5	12·3

Source: 1953 Supplement, *Survey of Current Business*, p. 43.

which had been at a high and fairly constant rate from 1947 IV to 1948 III, fell for a short period. The rise in the latter part of 1949 did not take sales quite back to their " plateau " level.

Before some conclusions are drawn about the effect of these expenditures, we shall consider the statistics of production. These are shown in Table XI.

TABLE XI

Indexes of Output of Major Consumer Durable Goods

(1947–49 = 100)

(Goods Included Comprise 63% of Consumption Expenditure on Durable Goods for 1947–49 Average Expenditures)

	1947.	1948.	1949.	1950.	% weight.
Total	91	99	110	153	100·00
Passenger automobiles	85	93	122	160	52·25
Household goods	97	106	96	146	47·75
Carpets	92	114	94	111	4·23
Furniture	103	105	92	117	17·64
Major appliances [1]	96	114	90	136	17·08
Radio and television	92	91	118	239	8·80

[1] Including (with % weight in parentheses) refrigerators (6·64), cooking-stoves (4·11), washing machines (3·61), vacuum cleaners (1·26), freezers (1·07).

Source: *Federal Reserve Bulletin*, October 1951, p. 1236.

Total output of consumer durables increased by over 10% in 1949 over 1948. The increase was due to the huge increase in passenger automobiles, while the output of household goods fell.

We have seen that the deflated value of consumer expenditures on automobiles increased by over 17% in 1949—see Table X—and although changes in the volume of retailers' inventories are not available, there appears to be sufficient evidence to conclude that in the passenger automobile trade divergent rates of growth between output and consumption reduced the volume of inventories during 1949. For household goods it seems the divergence between these rates of growth had the same effect—output fell by approximately 9%, while consumption fell by 6%—and in all probability the volume of inventories fell slightly. This evidence is admittedly slight, but it seems safe to infer first, that a planned reduction in automobile inventories did not occur, and secondly, that any reduction in retailers' inventories of household goods was at least partly caused by the rise in consumption which commenced in 1949 I and which continued throughout the year, *i.e.*, this inventory reduction may have been also partly unplanned.

The question, how did demand for durable goods behave, has been answered within the limits of the statistical sources used in this paper. Total purchases of all consumer durables during 1947–48 were on the whole constant, and increased during 1949. The cyclical fall in demand for durables was centred almost exclusively in the fall in private fixed investment, particularly in the manufacturing industries. It is considered unlikely that the switching of resources to public construction or even armaments could have prevented the depressing influences upon inventories and production. We have seen that this fall began early in 1948. It appears reasonable to infer that the small reduction in the volume of durable goods manufacturers' inventories during 1948, and the much larger reduction during 1949, represents a fall in stocks of purchased materials and goods in process—and even in stocks of finished goods for standard lines of machinery and equipment—induced by the falling rates of new orders and sales.

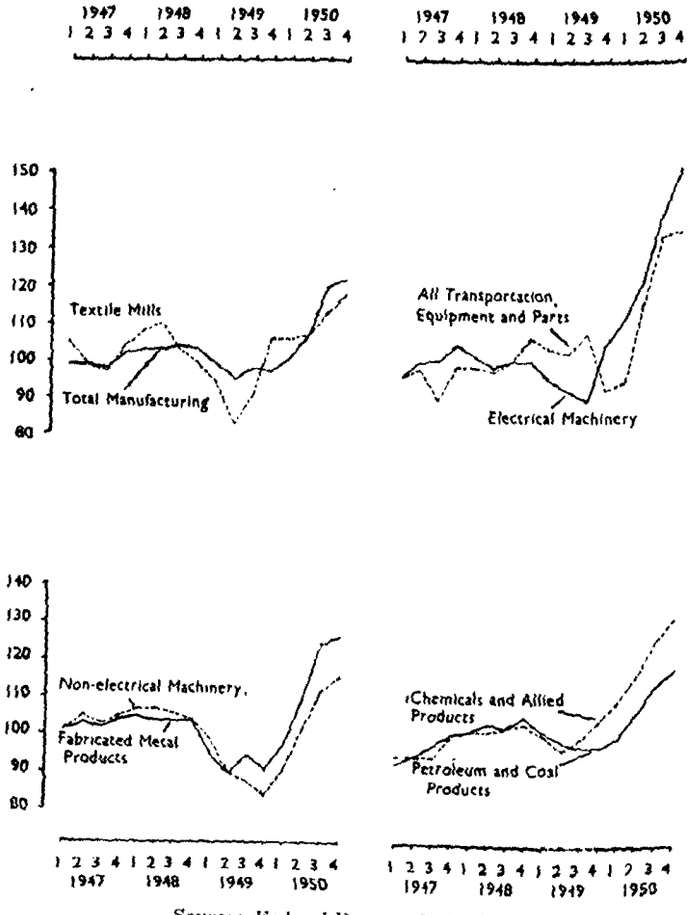
Separate figures for the output of producers' durable goods are not available. However, the Federal Reserve Board's indexes of production support the above conclusions (see Chart IV). Outputs of non-electrical machinery started to fall in 1948 III; of fabricated metal products in 1948 II; of electrical machinery in 1948 I. The index for total manufacturing did not fall until 1948 IV. Also, while total manufacturing started to rise again in 1949 III, the outputs of both electrical and non-electrical machinery did not rise again until 1950 I. It has been desirable in this paper to approach the problems discussed from the point

of view of inventories, because the orthodox view has determined the label "an inventory recession." This approach should not obscure the crucial nature of the fall in demand for and output of fixed investment goods. The reduction in stocks of purchased materials and work in progress was the necessary consequence of the fall in demand.

CHART IV

Selected Indexes of Manufacturing Production

Seasonally adjusted. Quarterly averages. 1947–49 = 100.



Source: Federal Reserve Bulletin.

At this point it is useful to compare the fall *in fixed investment* with the fall in inventory investment. The figures used in Chart I measure the fall in 1949 from 1948 in real expenditures on producers' durable goods alone at approximately $2·3 billion. Tables V and VI show that the fall in the volume of investment in non-durable goods manufacturers' inventories in 1949 from 1948 was approximately $1·4 billion. These figures indicate to some extent the relative impact of the falls in different types of investment upon production. Quantitatively the fall in demand for producers' durables was almost twice as important as the fall in non-durable inventory investment—even assuming that all of the latter fall represents an identical fall in production.

OTHER TYPES OF DEMAND

Before this paper is concluded with a more speculative discussion of some wider aspects of the recession, I shall deal briefly with two factors mentioned by Professor Hamberg and Messrs Bratt and Ondrechen. First of all, non-durable goods. As Table VIII shows, personal consumption expenditures on non-durables increased during 1948 by less than ½%. But in 1949 they increased again by 2%. Chart I shows that a marked rise in total personal consumption expenditures began as early as 1948 III and continued during 1949. Now, retailers' non-durable inventories fell in book value in 1949 by $0·326 billion, which was a fall of 3·8% The Consumers' Retail Price Index fell during 1949 by between 1 and 2%, so the inventory fall was not entirely due to marking down. On the other hand, consumption expenditures on non-durables rose in 1949 over 1948 by $1·7 billion. Hence it appears that for non-durable retailers as a whole, part of the inventory reduction may have been caused by an unexpectedly large increase in sales. Retailers' purchases and non-durable manufacturing production had fallen in late 1948—possibly because of the reduced growth in consumption during early 1948 as Professor Hamberg states, and of the break in food prices during 1948 which Messrs Bratt and Ondrechen mention—but these reductions were of short duration, for production was increasing again by the middle of 1949. But the evidence suggests that it did not increase quickly enough, and stocks had to bear part of the increase in demand. This argument has been presented to show that there are grounds for believing that what reduction in retailers' stocks did take place may have been caused by a rise in consumption—hardly an under-consumptionist explanation of the inventory reduction—rather an example of expectations proved incorrect.

Secondly, Messrs Bratt and Ondrechen offered, and Professor

Hamberg accepted, the importance of a fall in exports during 1948. I shall confine myself to the statistics in Table XII.

TABLE XII

Exports of United States Merchandise (Monthly Average)

($ million)

	Quantity Index 1936–38 = 100.	Agricultural products.	Non-agricultural products.
1947	275	330·0	933·4
1948	214	289·4	754·9
1949	219	298·1	696·5

	Automobiles and parts.	Chemicals and products.	Coal and products.	Iron and steel and products.	Machinery.	Petroleum.	Textiles.
1947	91·9	70·8	52·8	68·7	196·1	53·5	118·1
1948	74·9	65·6	41·0	54·1	192·2	54·8	70·3
1949	60·9	64·5	25·7	61·0	201·4	46·8	54·7

Source: 1953 Statistical Supplement, *Survey of Current Business*, pp. 104, 107–108.

It appears that the quantity of exports declined substantially in 1948 and rose slightly in 1949. The major fall was in non-agricultural products. The particular types of products which fell (in value) are interesting: the important ones were textiles, automobiles and parts, coal and iron and steel milled products. The fall in textiles, of about $48 million, helps to explain the rise in inventories shown in Table V, and the fall in production shown in Chart IV. The really interesting figure, though, is that for machinery. Machinery exports represented almost 20% of non-agricultural exports, and their fall was negligible. Machinery prices rose in 1948, but even that does not alter this conclusion. The very product for which demand was falling at home was on the whole still selling well overseas.

In passing, some aspects of the effect of the recession upon American demand for imports may be noted. Reference again to Table I shows that approximately 30% of the book value reduction in non-farm inventories in 1949 is accounted for by a reduction in the stocks of purchased materials held by durable goods manufacturers. Another 20% was due to reductions in similar stocks held by non-durable goods manufacturers. The percentage falls from end 1948 to end 1949 were 18·0 and 9·5%, respectively. From what we now know about the demand for

durable goods, it seems safe to assume that actual purchases of raw materials by manufacturers fell substantially also. Hence it is possible that the main impact on imports—and hence upon the balance of payments of the Sterling Area—came from this quarter. If this is true, then the reduction in the demand for consumers' imports was less important in the international repercussions of the recession than the reduced demand for raw-material imports (and the reduced demand for non-durable raw materials was less important than the reduced demand for durable raw materials, especially metals). Consequently, it may be that the 1948–49 recession offers little aid in predicting the effects of the behaviour of the American economy upon other economies in the future, unless there is a substantial fall in fixed investment in America which can give rise to a large fall in imports of durable-goods raw materials.

GOVERNMENT EXPENDITURES

The most important source of expenditures not yet considered were those of Government. In Chart I total Government purchases—including public new construction already discussed—are seen to have increased by something over 30% during 1947–48. After the second quarter of 1949 they declined and did not increase again until the last quarter of 1950. (As stated above, the deflator used is not entirely satisfactory. However, the turning points stand out clearly.) The two constituent groups are Federal National Security expenditures and other purchases of goods and services.[1] "Other purchases" grew steadily from 1947 IV to the end of 1949, the annual seasonally adjusted rate in current values rising from $17·0 billion to $25·5 billion. National Security expenditures—foreign aid and military—increased from an annual rate in current values of $11·6 billion in 1947 III to $20·5 billion in 1949 II, after which they fell back to $17·0 billion in 1950 I. Total 1949 Government purchases in current values were approximately $7·0 billion greater than 1948. When new construction, wages and salaries and net purchases from abroad are subtracted, the remainder of approximately $1·8 billion is the increase in Government purchases of goods from business.[2] The unknown proportion of this which represents armaments and producers' durable goods cannot have been very large, and it

[1] See *Survey of Current Business*, April 1952, p. 24.

[2] For Government Expenditures in 1948 see 1951 National Income Supplement, *Survey of Current Business*, Table 9, p. 155; in 1949 see *Survey of Current Business*, July 1953, Table 9, p. 15.

appears unlikely that it could substantially offset the reduction in private fixed investment. Also, National Security expenditures, the group including armaments, fell considerably—by more than 15% in current values—in the latter half of 1949, and may have caused further reductions in the rate of production in certain industries.

The conclusions drawn from this brief discussion of Government expenditures are: (i) the yearly rise in new construction and armaments would probably not offset in terms of values the decline in private fixed investment; (ii) it is unlikely National Security spending contributed to the revival of business in late 1949; (iii) the increasing rate of total Government expenditures during 1948 and early 1949 would have given a floor to the decline in production generally. Apart from National Security expenditures in late 1949, Government spending obviously played an important part in the early stages of the recession in private business by keeping certain types of demand at high levels. The anti-cyclical character of Government spending over 1948–49 had a large part in the changing of a slump into a recession.

Conclusions

If the interpretation of the recession outlined above is accepted, then the most interesting feature is the cycle in fixed investment. As this will be the subject of a later study, my remarks will be brief. Reference to Charts I and II shows that the 14% fall in total purchases of producers' durable goods which commenced in 1948 III reached its bottom in the last half of 1949. By the end of the second quarter of 1950 total expenditures had revived so much that they were above the early 1948 level. This large swing occurred within two years. The amplitude of the swing in total private new construction was smaller and the period was shorter. New construction started to rise in 1949 III. As Chart II shows, non-farm capital expenditures started to rise in 1950 I, but did not reach the early 1948 level again until 1951. Manufacturing capital expenditures did not begin to rise until 1950 II.

Aggregate data for calendar years and large sectors of the economy at first sight suggest a connection between falling rates of increase in total manufacturing production or personal consumption expenditures on one hand, and the fall in fixed investment on the other. This connection—the familiar accelerator mechanism—when allowance is made for a degree of flexibility in production periods and decision lags and for the proportion of investment loosely called replacement investment to which the accelerator mechanism need not necessarily apply, is needed from one theoretical point of view to link the cycle in fixed investment with the cycle in changes in the inventories of non-durable goods manufacturers and farms with a common cause. (Although, as suggested in various sections of this paper, the inventory cycle was most likely the result of several divergent and unconnected influences.) Now, it is difficult to establish the existence of an accelerator mechanism at work during 1947–48, on any detailed analysis. As Chart II shows, total manufacturing production rose in 1947 IV and continued to rise, although at a slower rate, during the first three quarters of 1948. As we have seen, personal consumption as a whole tended to level off in early 1948, and these changes in rates of growth might seem at first sight to support the hypothesis of an accelerator—or rather decelerator—at work.[1] But several objections can be made to this hypothesis.

First, investment in the important group of service industries —commerce, communication and construction—fell substantially also, and had been falling since the beginning of 1947. Secondly, the difference in the rate of manufacturing production and personal consumption is possibly significant: production did not start to fall until 1948 IV, by which time personal consumption was starting to rise again; and while, in early 1948, consumption was roughly constant, production was rising. It would be reasonable to infer, then, that manufacturers did not respond to the levelling off in consumption until late 1948, and it is thus unlikely that this levelling off in consumption in early 1948 directly affected their capital expenditures of mid-1948, which were probably planned in early 1948 or even 1947. This argument is not conclusive, but it shows at least that the effect of falling rates of increase in consumption must be pushed back into 1947 and early 1948 if they are to be relevant, and here the difficulties increase, for consumption had a high rate of growth during 1947. Thirdly, a preliminary examination of the figures for individual manu-

[1] The only published results of the estimation of parameters of a model involving an accelerator relation, using G.N.P. deflated quarterly data from 1947–50, of which I am aware are those of G. H. Fisher, "A Simple Econometric Model for the United States," *Review of Economics and Statistics*, Vol. XXXIV, pp. 46–8.

While these results are very interesting and I would not criticise them from the point of view of the methods of statistical inference, I think it worth while to point out that such results do not establish the existence—or the non-existence-of causal accelerator mechanisms. The criticisms I make concerning lags and the variety of patterns in the disaggregated statistics apply to such econometric results.

facturing industries shows that in many important industries capital expenditures were declining as early as the last half of 1947. Such industries were fabricated metal products; non-electrical machinery; motor vehicles; electrical machinery; stone, clay and glass products; chemicals and allied products; petroleum; and rubber. And in three of these, motor vehicles, petroleum and chemicals, production rose at a roughly constant rate from the end of 1946 until at least the end of 1948. A simple accelerator notion is difficult to maintain.

It can be suggested that there are other explanations of the fall in expenditures on plant and equipment. The most obvious is that post-war replacement had been completed during 1947. Another is that the ratio of prices of plant and equipment to a general price level rose during 1948 and early 1949, and that during 1948 the price of investible funds rose.[1] However, it is doubtful if price and cost considerations were so important, because there was no noticeable fall in undistributed profits until late 1948.

The rise in fixed investment after its fall has some connections with the rise in consumption during 1949 and early 1950. It is doubtful if Government purchases for rearmament or for foreign aid were effective as early as late 1949. Two divergent trends in late 1949 were the fall in undistributed profits and a fall in the price ratio mentioned. These remarks concerning the fixed investment cycle are inconclusive. The existence and importance of the cycle appear to be proved, but a complete explanation is still needed.

Finally, the absence of any noticeable multiplier effect upon consumption needs be mentioned. Consumption rose quite steadily during 1949. The fact that Government purchases of goods and services did not fall to any great extent until the end of

[1] The ratio of an index of the prices of fixed capital to the general wholesale price index suggests that prices of fixed capital are more flexible than the general price level, *i.e.*, they rose farther in 1948 and fell farther in 1949 than did the general price level. This pattern seems to have continued after 1949 also. In some manufacturing industries the change in fixed investment lags three to six months after a change in this ratio, and for private fixed investment in plant and equipment as a whole the lag can be discerned. While the long-term level of investment may be uninfluenced by these changes—in fact, the long-run causal relationship may be the other way round—during short periods, such as are involved in quarterly revisions of investment decisions, the timing of investment already planned may depend considerably upon the relative prices of the fixed assets. If business decisions do consider this factor, then as the prices of plant and machinery appear to be elastic with respect to sales, a cobweb mechanism may play a part in the timing and hence in the short-period rate of fixed investment expenditures.

1949 may have helped. But the slight fall in the cost of living in 1949 may also have been important.

The previous discussion of the recession in the ECONOMIC JOURNAL brought to light several important influences affecting the fall in production in late 1948 and in 1949. The evidence of this paper also points to a wide variety of influences, as opposed to a single dominant cause. The factors most likely to have had an effect in reducing the rate of production were the fall in fixed investment and the cessation of inventory investment by farms and non-durable goods manufacturers and retailers. In late 1948 and early 1949 these depressing influences were modified by the expansive influences of Government expenditure. When the latter expenditures declined in late 1949 their place was taken by an increasing rate of personal consumption expenditures which were associated with, and probably caused, renewed inventory investment and later in early 1950 renewed private fixed investment. I accept the view that a reduced rate of growth in consumption—both domestically and in the export trade, where sales actually fell in many lines—in 1948 caused unplanned inventory accumulation, which induced a fall in production of certain non-durables and consumer durables. On the other hand, I doubt whether the fall in private fixed investment was caused by a similar simple accelerator mechanism, although apart from suggesting that post-war replacement of fixed assets was ending—at different rates and times—I have no simple obvious explanation to offer.

It may be useful if this rather empirical outline of the recession is interpreted within the framework of a more general trade-cycle model. The rates of expenditures of the various sectors of the economy were controlled or caused by two groups of influences: the multiplier–accelerator mechanisms on one hand, and "the others"—autonomous in terms of the model—on the other. The proportions of the expenditures which were influenced by multiplier–accelerator mechanisms during the post-war period were probably very small. In terms of the physical analogy of a dynamical coupled system the couplings were weak. Hence the time series measuring various rates of expenditure might show divergent courses with largely non-coincident fluctuations, differing considerably from the time series produced by a model in which the autonomous expenditures were relatively small. Under these circumstances the beginning, the course and the end of a fall in production would be very largely stochastic occurrences. In other words, a cycle in the rate of production was the result of

several largely fortuitous coincidental movements between expenditures not very strongly linked by multiplier–accelerator mechanisms. Since 1945 both the change in farm and non-durable goods inventories, on one hand, and fixed investment, on the other, show marked cyclical movements, not always coincidental. (The same can be said about most other time series during the period.) A coincidence, fortuitous in terms of the model, was responsible for the signs of depression which appeared in late 1948.

If the model contained other forms of coupling, *i.e.*, if other causal relations were introduced, such as price and interest elasticities, then the fortuitous character of the coincidence could in principle disappear. For example, it could be argued that the disappearance of the inflationary gap during 1948 was largely responsible for the end of upward price movements and the following tendency for prices to fall. This, in turn, could have entailed the cessation of inventory accumulation. As far as the disappearance of the inflationary gap itself is concerned, the most important direct cause may have been the decline in fixed investment. The multiplier effects of this decline would reduce consumption, while this influence would be offset by the autonomous increase in Government expenditures. The net effect upon consumption was not a rise or fall, but a levelling off. The part of the increase in Government expenditures representing public new construction, and also private residential new construction, may not necessarily have been entirely autonomous in terms of the model, but may have been induced by the fall in construction costs in the early part of 1949. It has been suggested that a cobweb mechanism may have underlain the cycle in fixed investment. Consequently, such a model would attach considerable importance to the influence of price changes upon business decisions regarding expenditures on fixed and inventory investment. On this orthodox note I end this sample speculation.

CONRAD A. BLYTH

King's College,
Cambridge.

LINEAR EXPENDITURE SYSTEMS AND DEMAND ANALYSIS: AN APPLICATION TO THE PATTERN OF BRITISH DEMAND [1]

I. INTRODUCTION

THE object of this paper is fivefold. The first objective is to derive a practical system of demand equations which possess properties usually considered desirable from the standpoint of elementary economic theory. The second is to consider the statistical problems involved in applying the system of equations. The third is to analyse the pattern of demand for consumers' goods in terms of this system on the basis of annual data relating to the United Kingdom over the years 1920–38. The fourth is to compare the results of this system, and systems like it, with the actual state of demand in 1900. Finally, the fifth is to compare the post-war structure of demand with what might be expected from the inter-war relationships under free-market conditions.

The information on which this study is based is derived from the investigation of certain groups of consumers' expenditure, quantities bought and prices paid given in [1] and preliminary estimates for the remaining categories of consumers' goods and services which, in final form, will in due course appear in [2]. The essential feature of this investigation is that it is concerned not simply with the demand for individual commodities or groups of commodities considered in isolation but with the demand for all commodities bought by consumers classified into a number of groups.

It is convenient at this point to indicate the nature of the notation used in the following sections. Greek letters in the lower case denote scalars. Column vectors are denoted by Roman letters in the lower case and unrestricted matrices are denoted by Roman capitals. Diagonal matrices are represented by the symbol for a column vector surmounted by a circumflex accent. Letters (usually Roman) of the lower case with suffixes are used to denote the elements of vectors or matrices.

[1] I should like to acknowledge here the help I have received from a number of friends in the preparation of this paper. In particular my thanks are due to Messrs. S. J. Prais (now at the University of Chicago), J. A. C. Brown and J. Aitchison of the Department of Applied Economics and to Mr. D. A. Rowe who is working with me at the National Institute of Economic and Social Research on the estimates appearing in [1] and [2]. The calculations were undertaken by Miss Potter and Miss Ayling at the National Institute.

II. A System of Demand Relationships

Let p and q denote respectively a price and a quantity vector and let $\mu \equiv p'q$ denote total expenditure. Consider the system of relationships

$$\hat{p}q = \hat{p}\bar{q} + b(\mu - p'\bar{q}) \quad . \quad . \quad . \quad . \quad . \quad (1)$$

In (1), $\bar{q}$ may be identified with a vector of quantities to which consumers are in some sense committed and b denotes a vector of constants which sum to unity. Then, on the hypothesis (1), the expenditure on the ith commodity (or group) is equal to a certain basic consumption, $\bar{q}_i$, valued at current prices plus a certain proportion, b_i, of supernumerary income, measured here by total expenditure, μ, less total committed expenditure, $p'\bar{q}$.

From a common-sense point of view (1) may seem a reasonable first approximation to a law of demand. For, on the assumption that $\mu > p'\bar{q}$, it entails that consumers first use up a certain amount of their income (here total expenditure) in acquiring the consumption vector $\bar{q}$ at current prices, whatever these may be, and then distribute their remaining income over the set of available commodities in certain fixed proportions given by the elements of b.

If $\bar{q}$ is the null vector, then (1) reduces to

$$\hat{p}q = b\mu \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (2)$$

The vector $\hat{p}q$ has as elements the expenditures on individual commodities or groups. Equation (2) states that each of these expenditures is proportional to μ.

The system (1) underlies the Klein–Rubin constant utility index of the cost of living [3], and its properties have been examined by Samuelson [4]. It may be written in the form

$$q = \hat{p}^{-1}\{b\mu + (bi' - I)\hat{c}p\} \quad . \quad . \quad . \quad . \quad . \quad (3)$$

where i is the unit vector, I is the unit matrix and $c = -\bar{q}$. This expression when premultiplied by $\hat{p}$ reduces to (2) if c is the null vector.

If (3) is premultiplied by $\hat{p}$ it yields a system in which expenditures on individual commodities are expressed as linear functions of total expenditure and prices. Such a system is here termed a linear expenditure system. The system (3) is a restricted form, since in it the coefficients of the price ratios depend only on $2m - 1$ independent parameters instead of the $m^2 - 1$, where m is the number of commodities, which would be involved in the general case. However, it is the most general linear expenditure system which is compatible with three conditions

frequently imposed on demand systems in theoretical work. These conditions may be stated as follows.

(i) *Additivity.* This implies that the sum of the expenditures as given by the system is identically equal to total expenditure, or that

$$p'q \equiv \mu \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (4)$$

(ii) *Homogeneity.* This implies that for each commodity the sum of the total expenditure (or income) elasticity and all the price elasticities is identically zero, or that

$$\hat{q}^{-1}(a\mu + Ap) \equiv 0 \quad . \quad . \quad . \quad . \quad . \quad . \quad (5)$$

where a is the vector of quantity derivatives with respect to income, A is the matrix of quantity derivatives with respect to price and 0 is the null vector.

(iii) *Symmetry of the substitution matrix.* This is the Slutsky condition, namely that

$$S \equiv S' \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

where

$$S = \hat{q}^{-1}(ai' + A\hat{q}^{-1})\mu \quad . \quad . \quad . \quad . \quad (7)$$

In order to see with what added restrictions (3) may be regarded as the most general system of its kind which satisfies (i), (ii) and (iii), let it be rewritten in the more general form

$$\hat{p}q = b\mu + Bp \quad . \quad . \quad . \quad . \quad . \quad . \quad (8)$$

The additional restrictions needed if (i) is to be satisfied by this system are obtained by premultiplying (8) by i'. This will yield on the left-hand side $p'q$ the sum of the expenditures, and on the right-hand side μ, as required, if and only if

$$i'b = 1 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (9)$$

and

$$i'B = 0' \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (10)$$

In other words the b_i must sum to unity, and the elements in the columns of B must in each case sum to zero.

Condition (ii) also gives no difficulty, since for (8)

$$a = \hat{p}^{-1}b \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (11)$$

and

$$A = \hat{p}^{-1}[B - \hat{p}^{-1}(\hat{b}\mu + Bp)] \quad . \quad . \quad . \quad . \quad (12)$$

where $\widehat{Bp}$ denotes a diagonal matrix constructed from the vector Bp. If these values are substituted into the left-hand side of (5) there results

$$\hat{q}^{-1}\{\hat{p}^{-1}b\mu + \hat{p}^{-1}[B - \hat{p}^{-1}(\hat{b}\mu + \widehat{Bp})]p\} \equiv 0 \quad . \quad . \quad (13)$$

Thus condition (ii) places no further restrictions on b and B. It will now be shown that condition (iii) restricts the form of B. From (7), (11) and (12) it follows that

$$\begin{aligned} S &= \hat{q}^{-1}\hat{p}^{-1}\{bi' + [B - \hat{p}^{-1}(\hat{b}\mu + \widehat{Bp})]\hat{q}^{-1}\}\mu \\ &= \hat{q}^{-1}\hat{p}^{-1}\{bi' + [B - \hat{q}]\hat{q}^{-1}\}\mu \quad . \quad . \quad . \quad . \quad . \quad (14) \end{aligned}$$

From this expression the nature of the restriction on B if (iii) is to be satisfied can be seen. For in (14) the last term on the right-hand side is the product of diagonal matrices, and so symmetric, whereas the first two terms are not. If these terms are pre- and post-multiplied first by $\hat{q}$ and then by $\hat{p}$ and if the scalar μ is neglected, there results

$$bi'\hat{p}\hat{q} + B\hat{p}$$

which may be written as

$$bq'\hat{p} + B\hat{p}$$

A substitution for q from (8) into this expression yields

$$b(b'\mu + p'B')\hat{p}^{-1}\hat{p} + B\hat{p}$$

which, since the first term is symmetric, can be reduced, for present purposes, to

$$bp'B' + B\hat{p}$$

or

$$bi'\hat{p}B' + B\hat{p}$$

If this expression is to equal its transpose then

$$B\hat{p}(ib' - I) = (bi' - I)\hat{p}B' \quad . \quad . \quad . \quad . \quad (15)$$

whence

$$B = (bi' - I)\hat{c} \quad . \quad . \quad . \quad . \quad . \quad (16)$$

as in (3), where c is a vector of constants. Equation (16) gives the most general form of B which is independent of p. It would be possible to replace c in (16) by $\hat{p}D$, where D is a symmetric matrix but this would make B depend on p.

It will be seen that (8) with B restricted as in (16) cannot, for practical purposes, describe a system which contains inferior or complementary groups of commodities. For the ijth element of S, s_{ij} say, may from (14) be written

$$\begin{aligned} s_{ij} &= \frac{\mu}{p_iq_i}\left\{b_i + \frac{(b_i - \delta_{ij})c_j}{q_j} - \delta_{ij}\right\} \\ &= \frac{\mu}{p_iq_i}(b_i - \delta_{ij})(1 + c_j/q_j) \\ &= \frac{(b_i - \delta_{ij})b_j\mu}{p_iq_ip\,q_j}(\mu + p'c) \quad . \quad . \quad . \quad . \quad . \quad (17) \end{aligned}$$

where δ_{ij} is Kronecker's delta. For practical purposes it may be assumed that supernumerary income, $(\mu + p'c)$, is positive. If s_{ii} is to be negative, as in theory it must be, then $0 < b_i < 1$. This rules out inferior goods. If such goods are ruled out, then b_ib_j is necessarily positive, whence all off-diagonal elements of S must be positive. This rules out complementary goods.

As already indicated, if c is the null vector, the system reduces to (2). In this case the various elasticities are of a peculiarly simple form. Let a^* and A^* denote respectively the vector of quantity elasticities with respect to total expenditure and the matrix of quantity elasticities with respect to prices. Then if $B = 0$

$$\begin{aligned} a^* &= \hat{q}^{-1}a\mu \\ &= \hat{q}^{-1}\hat{p}^{-1}b\mu \\ &= i \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (18) \end{aligned}$$

and

$$\begin{aligned} A^* &= \hat{q}^{-1}A\hat{p} \\ &= -\hat{q}^{-1}\hat{p}^{-1}\hat{b}\hat{p}\mu \\ &= -\hat{q}^{-1}\hat{p}^{-2}\hat{b}\mu \\ &= -I \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (19) \end{aligned}$$

since from (2)

$$\hat{b} = \mu^{-1}\hat{p}\hat{q} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (20)$$

Finally, in this case it can also be seen that

$$S = ii' - \hat{b}^{-1} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (21)$$

III. The Estimation of the Parameters in (8)

In the applications of the following section attention is concentrated on (8) with B as given in (16). A naïve model, corresponding to (2), is given if c is the null vector and a more sophisticated model, corresponding to (1) is given if c is any other vector of constants. These models are termed simple systems. The naïve and more sophisticated descriptions can be applied to individual commodities, and their combination also yields a system, though not one which satisfies either (i) or (iii), which is here termed a mixed system.

If c is assumed equal to the null vector so that B in (8) is the null matrix, the vector b can readily be estimated by taking the least squares regression of p_iq_i on μ (without correction for means) in each of the m equations. But the estimation of the parameters in (8) if c is not the null vector cannot be performed by taking the equations one at a time since each element of c enters into each

equation. It seems in fact to be most convenient to adopt the following iterative procedure.

A provisional estimate of b, say b^*, may be obtained as above and, with this available, (8) with B as given in (16) may be written for period t ($t = 1, \ldots, n$) in the form

$$y_t = X_t c + u_t \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (22)$$

where

$$y_t \equiv (\hat{p}q_t - b^*\mu_t) \quad . \quad . \quad . \quad . \quad . \quad . \quad (23)$$

$$X_t \equiv (b^*i' - I)\hat{p}_t \quad . \quad . \quad . \quad . \quad . \quad . \quad (24)$$

and u_t denotes a vector of disturbances. Since the elements of y_t are dimensionally similar, being in fact all adjusted expenditures, it does not seem unreasonable to estimate the elements of c by minimising the unweighted sum of squares of the disturbances in all equations over all time periods. Thus let

$$y \equiv \{y_1, \ldots, y_n\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (25)$$

$$X \equiv \{X_1, \ldots, X_n\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (26)$$

and

$$u \equiv \{u_1, \ldots, u_n\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (27)$$

so that the whole set of mn equations for m commodities over n time periods can be written in the form

$$y = Xc + u \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (28)$$

Then the least squares estimate c^* of c is given by

$$c^* = (X'X)^{-1}X'y \quad . \quad . \quad . \quad . \quad . \quad . \quad (29)$$

With this estimate of c it is now possible to form the equations

$$w_t = Z_t b + v_t \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (30)$$

where

$$w_t \equiv \hat{p}_t(q_t + c^*) \quad . \quad . \quad . \quad . \quad . \quad . \quad (31)$$

$$Z_t \equiv (\mu_t + c^{*\prime}p_t)I \quad . \quad . \quad . \quad . \quad . \quad . \quad (32)$$

and v_t denotes a vector of disturbances, and then to form new estimates of b, b^{**} say, from the equation

$$w = Zb + v \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (33)$$

where

$$w \equiv \{w_1, \ldots, w_n\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (34)$$

$$Z \equiv \{Z_1, \ldots, Z_n\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (35)$$

and

$$v \equiv \{v_1, \ldots, v_n\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (36)$$

These new estimates take the form

$$b^{**} = (Z'Z)^{-1}Z'w \quad . \quad . \quad . \quad . \quad . \quad . \quad (37)$$

where

$$Z'Z = \sum_t Z_t^2 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (38)$$

Thus in estimating b, as opposed to c, the commodity groups are treated one at a time. Given these new estimates of b, it is now possible to re-estimate c and to continue the process until stable estimates of b and c are eventually reached.

The estimation of the parameters in a mixed system provides no additional difficulty. Provided a criterion can be established for deciding which commodities are to be described by the naïve model and which form a subset with price interactions as in the more sophisticated model, then the procedure is as follows. First, the b_t for those commodities which are to be described by the naïve model are calculated. Second, the actual expenditure on this subset is subtracted from μ to yield say μ^* and (8) with B as given in (16) is fitted to the remaining commodities with μ^* in place of μ and without reference to the prices of the first subset of commodities described by the naïve model.

It can be seen that the above method is not affected if year-to-year changes in the variables are used in place of their levels. It can readily be adapted to the case in which all the variables are divided through by μ. The effect of such transformations of variables is not examined in this paper.

IV. An Application of Linear Expenditure Systems, Simple and Mixed

In this section the results are given of analyses of a system of six commodity groups among which the total of consumers' expenditure per equivalent adult has been divided. The methods used were described in the last section and the data to which they were applied relate to the United Kingdom over the years 1920 to 1938. The groups chosen were as follows:

(1) meat, fish, dairy products and fats;

(2) fruit and vegetables;

(3) drink and tobacco;

(4) household running expenses such as rent, fuel and light, non-durable household goods and domestic service;

(5) durable goods of all kinds such as clothing, household durables and vehicles together with transport and communication services;

(6) all other consumers' goods and services.

The first step was to apply simple systems to these commodity groups with results shown in the following table.

TABLE I

Alternative Simple Systems for Six Commodity Groups

	Naïve model (—).			More sophisticated model * (1, 2, 3, 4, 5, 6).		
	b_i	c_i	r_i	b_i	c_i	r_i
1	0·18	—	0·88	0·12	−14	0·97
2	0·05	—	0·88	0·04	− 3	0·97
3	0·11	—	0·95	0·06	−10	0·57
4	0·19	—	0·23	0·23	−11	0·81
5	0·23	—	0·95	0·30	−12	0·97
6	0·24	—	0·98	0·25	−15	0·97

* The vector of mean prices for the period is $p = \{0{\cdot}97, 1{\cdot}04, 1{\cdot}02, 1{\cdot}02, 1{\cdot}05, 1{\cdot}02\}$. Accordingly, the values of committed expenditure, £ per equivalent adult, at mean prices are $-\hat{p}c = \{14, 3, 10, 11, 13, 15\}$. The mean values of total expenditure are $\hat{p}q = \{18, 5, 12, 20, 24, 25\}$.

In this table the figures in the columns headed r are the sample correlations between the actual and the calculated expenditures. It can be seen that on the whole the more sophisticated model which involves twelve parameters provides somewhat higher correlations in almost all cases than the naïve model, which involves only six parameters. For one commodity group in each set, the correlation using one model is markedly superior to that obtained from the other. Thus for group 3, drink and tobacco, the naïve model yields a correlation of 0·95, while the more sophisticated model yields a correlation of only 0·57. There are two main reasons for this effect. In the first place the value of b_3 in the naïve model is much larger than the corresponding value in the more sophisticated model. In the second place, in the latter the value of $-p'c$ is rather large, with the result that supernumerary income, $(\mu + p'c)$, is very different from total expenditure, μ. In fact, supernumerary income moves very like total expenditure at constant prices and not like total expenditure at current prices.

If the two sets of correlations are compared it can be seen that the more sophisticated model provides clearly the better description of actual expenditures for commodity groups 1, 2 and 4 and clearly the worse one for group 3. For groups 5 and 6 the correlations are high on either model and there is not much to choose between them.

It is these facts that suggest the possible advantage of a mixed system employing the naïve model for certain groups and the more

sophisticated model for the remainder. Such a combination of the systems is not compatible with a symmetric substitution matrix, but represents a possible type of behaviour which can readily be expressed in words. Thus suppose groups 3, 5 and 6 are described by means of the naïve model while groups 1, 2 and 4 are described by means of the more sophisticated model. Under this scheme, consumers lay out certain fixed proportions of their total expenditure on groups 3, 5 and 6, while for the remaining groups they purchase a certain fixed quantity at current prices and then spread the balance of their expenditure over these remaining groups in certain fixed proportions.

In the following tables the results obtained from three such mixed systems are given. The first, referred to as (1, 2, 4), involves the description of groups 1, 2 and 4 by the more sophisticated model and 3, 5 and 6 by the naïve model. The second, referred to as (1, 2, 4, 5), involves the description of groups 1, 2, 4 and 5 by the more sophisticated model and 3 and 6 by the naïve model. Finally, (1, 2, 4, 5, 6) has only 3 described by the naïve model.

TABLE II

Alternative Mixed Schemes for Six Commodity Groups

	(1, 2, 4).			(1, 2, 4, 5).			(1, 2, 4, 5, 6).		
	b_i	c_i	r_i	b_i	c_i	r_i	b_i	c_i	r_i
1	0·14	−14	0·99	0·13	−17	0·98	0·13	−16	0·97
2	0·05	− 3	0·96	0·05	−4	0·95	0·05	− 4	0·94
3	0·11	—	0·95	0·11	—	0·95	0·11	—	0·95
4	0·22	−12	0·94	0·17	−17	0·93	0·19	−15	0·97
5	0·23	—	0·95	0·30	−19	0·99	0·30	−16	0·98
6	0·24	—	0·98	0·24	—	0·98	0·22	−19	0·97

The figures in the b-columns call for some explanation. For purposes of comparison with one another and with the corresponding columns of Table I they have been made to sum to unity. If there were no errors in the cases described by the naïve model this would be quite straightforward, since μ^* would be exactly proportional to μ. The existence of such errors is ignored and the original b_i based on the more sophisticated model, which themselves sum to unity, are multiplied in the above table by unity minus the sum of the b_i based on the naïve model.

In Table II there are no really bad descriptions as judged by the correlations. On the whole the three-set model involving only nine parameters is as good as the other two.

V. A Test of the System: Consumption in 1900

From (3) it follows that if p is held constant and μ is allowed to vary, then

$$q = h + g\mu \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (39)$$

where

$$h = \hat{p}^{-1}(bi' - I)\hat{c}p \quad . \quad . \quad . \quad . \quad . \quad (40)$$

and

$$g = \hat{p}^{-1}b. \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (41)$$

This means that the partial relationships between individual quantities and total expenditure are linear. In the naïve model c is the null vector, and so accordingly is h.

In a similar way it can be seen that if μ and all the elements of p except the price of the commodity under consideration are held constant and if this price is allowed to vary, then

$$q_i = \theta_i + \gamma_i/p_i \quad . \quad . \quad . \quad . \quad . \quad . \quad (42)$$

where

$$\theta_i = (b_i - 1)c_i \quad . \quad . \quad . \quad . \quad . \quad . \quad (43)$$

and

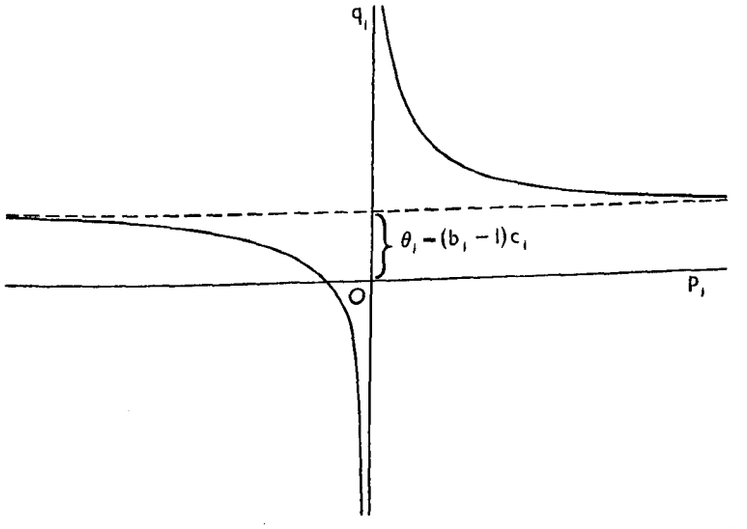
$$\gamma_i = b_i(\mu + \sum_{j \neq i} c_j p_j) \quad . \quad . \quad . \quad . \quad . \quad (44)$$

This means that the ordinary price–quantity demand curves, which show the partial relationships between quantity demanded and the price of the commodity under consideration when total expenditure and the other prices are held constant, have the form of hyperbolæ. In the naïve model c is the null vector so that $\theta_i = 0$, $\gamma_i = b_i\mu$ and the relationships reduce to rectangular hyperbolæ.

The form of the demand curve just described in the ordinary case in which $\theta_i > 0$ and $\gamma_i > 0$ is illustrated in the diagram on p. 521.

Under free-market conditions in which consumers are able to adjust their purchases as they wish subject to the budget constraint, it is to be expected that observed price–quantity points will lie close to the demand curve as shown in the top right-hand portion of the diagram, since the possibility that price or quantity might be negative can be excluded. What is meant by "close" must depend on a consideration of the magnitude of the disturbances in the relationship; it is not to be expected that the particular simple formulations used here, or indeed any other practically attainable formulations will, in all circumstances, exactly reproduce what is observed. Apart from this sort of consideration, however, it can be seen that the system is incapable of representing a situation in which the actual quantity demanded, q_i, is less than θ_i for in such a case the relevant portion of the demand curve is to be found in the bottom left-hand portion of the

diagram in which prices are always, and quantities are sometimes, negative. But θ_i is simply a certain proportion, $(1 - b_i)$, of the fixed quantity, $-c_i$, assumed to be demanded in the system.



A similar difficulty can arise in a different way. It is to be expected that, for the values of μ and p which occur in the period over which b and c are determined, the γ_i will in all cases be found to be positive; indeed, if this is not the case the whole system is hardly capable of an economic interpretation. However, given c, it is always possible that in some other period μ will be so small that the γ_i are negative. This means that the demand curves will lie in the north west and south east quadrants of the diagram. Evidently in such a situation any attempt at projection is likely to give extremely capricious results.

These considerations point to an important limitation of the system, namely that it is not likely to provide a good description of actual behaviour where the elements of q become small compared with the corresponding elements of $-c$. But unless the elements of $-c$ can be interpreted as some sort of Malthusian minima, it is clear that in different circumstances, say when they were collectively poorer, consumers might in fact no longer feel themselves committed to these basic quantities. If in such a case the question is asked "at what price would the average inter-war consumer have been persuaded freely to buy the actual quantity bought," the more sophisticated system may provide the nonsensical answer "at a negative price" for the reasons that have just been given.

been spent on other items, since the projections yield a total expenditure equal to the actual expenditure in 1952.

The kind of information which can be sought from the projections is thus quite different from a prediction. Rather they show hypothetical distributions of expenditures and quantities or prices based on pre-war experience and post-war values of either μ and p or μ and q. If any desired quantities within the relevant range could be obtained at 1952 prices then inter-war consumers would alter the 1952 quantities in the ratio of calculated to actual expenditure. If, on the other hand, quantities were fixed at the 1952 levels, then inter-war consumers would have expected to pay prices equal to the projected levels. In practice, supplies are available at something between these extremes, and it is impossible to say what consumption patterns would emerge under free markets without definite assumptions about supply conditions.

In practice, of course, the position is somewhat more complicated. It may be the case that changes in tastes have occurred or that changes in the distribution of income have affected demand in a way which cannot be reflected in the demand systems adopted in this paper. War-time shortages clearly led to an abnormal demand for consumers' durable goods immediately after the war, though it may be doubted if much of this influence persisted to 1952. Allowances for such factors as these, which are not taken into account in the present analyses, would have to be made in a realistic appraisal of possible changes, and could in part, at least, be made on the lines suggested in the preceding section. The analyses given here provide only a framework in which some but not all market influences are taken into account.

The following table shows for the demand systems considered

TABLE IV

Percentage Excess of Projected over Actual Expenditure in 1952 *Given* 1952 *Values of* μ *and* p

	(—).	(1, 2, 4).	(1, 2, 4, 5).	(1, 2, 4, 5, 6).	(1, 2, 3, 4, 5, 6).
1	16	19	16	14	8
2	−15	− 4	− 7	− 8	−17
3	−28	−28	−28	−28	1
4	41	34	15	19	20
5	4	4	17	15	5
6	−13	−13	−13	−11	−16

in the preceding section the percentage excess of projected expenditure in 1952 over the actual expenditure in that year given the values of μ and p in 1952.

If supplies were infinitely elastic at 1952 prices, then all adjustment to free-market conditions would fall on the quantities, and these would move up or down, on the assumptions made, by the percentage shown in the above table.

The figures in the rows of Table IV apart from group (3) are consistent as regards sign, but otherwise show considerable variability. As has been seen in the preceding section, a mixed system appears in the absence of the complications suggested in (46) to be preferable to a simple system in describing the observations.

As was expected, inter-war consumers, faced with elastic supplies under the 1952 income and price situation, would certainly want to purchase more of groups (1) and (4), that is meat and fats and the various goods and services, such as fuel and accommodation, involved in running their homes. In order to do this they would have been prepared to cut down fairly drastically on drink and tobacco (except on the more sophisticated model), and in a more moderate way on the miscellaneous group (6). The adjustments they would have wished to make to their purchases of fruit and vegetables and of durable goods and transportation services appear to be moderate.

This picture represents an extreme in which all adjustments fall on quantities. If, however, supplies were perfectly inelastic at 1952 prices, then the whole of the adjustment would fall on prices. The adjustments which might be expected of the inter-war consumer are shown in the following table based on (48). This can also be presented as a system of expenditure adjustments given 1952 prices and total expenditure, as can be seen by premultiplying both sides of (48) by $\hat{q}$.

TABLE V

Percentage Excess of Projected over Actual Expenditures in 1952 *Given* 1952 *Values of* μ *and* q

	(—).	(1, 2, 4).	(1, 2, 4, 5).	(1, 2, 4, 5, 6).	(1, 2, 3, 4, 5, 6).
1	16	31	52	54	27
2	−15	−31	−46	−33	−38
3	−28	−28	−28	−28	3
4	41	32	5	31	35
5	4	4	9	20	6
6	−13	−13	−13	−39	−31

These figures show, on the various hypotheses, the price changes that would have been required to balance, for the inter-war consumer, 1952 quantities and 1952 total expenditure under free-market conditions. For the naïve model these figures are the

same as the corresponding quantity adjustments in Table IV, but for other models the figures are, in general, different.

These results do not, of course, make it possible to calculate the price and quantity levels which would have been attained if inter-war consumers had been faced with 1952 total expenditures under free-market conditions. To do this it would be necessary to estimate responses on the side of supply, and this is outside the scope of this paper.

VII. Conclusions

A number of conclusions emerge from this paper; some theoretical, others practical, in character.

(1) It is possible, by means of the simple expenditure system, to establish a system of demand relationships which satisfy a number of theoretical conditions. This possibility has been noticed in the literature.

(2) The simple expenditure system may take a special and a general form. The special form, in which the expenditure on any commodity is a fixed proportion of total expenditure, is equivalent to the treatment of households in a closed Leontief model.

(3) The general form, which permits each price to be introduced into each demand equation, may be expected to give better results than the special form. Unlike the latter, however, it cannot describe situations in which the quantities demanded are below certain levels.

(4) This limitation of the general form can in principle be overcome if a theory of the limiting quantities can be developed. A method involving the introduction of irreversibilities which depend on the past history of consumption is suggested but not applied.

(5) In the absence of the complication suggested under (4), it appears that mixed systems in which some commodities are described by the special form and the remainder are described by the general form limited to them yield better descriptions of actual behaviour than either simple system.

(6) A projection for 1900 yields encouraging results. In the two cases where the discrepancy between actual and calculated consumption is at all large there are good reasons for supposing that changes in tastes and habits were important. This points to the significance of the considerations advanced under (4).

(7) In these systems the ratio of parameters to be determined to the number of observations available is independent of the number of commodity groups among which total expenditure is

divided. The method of estimation proposed here is an iterative procedure, and more work is in hand on the convergence properties of the method and on the statistical characteristics of the estimates. It is, however, unaffected by certain obvious transformations of the variables.

(8) The commodity groups chosen in the example given are very broad and far from satisfactory. Further analyses will be undertaken with smaller groups, and in this the possibilities of analysing the sub-groups of main groups will be exploited.

(9) The procedure illustrated here provides a basis and framework which is useful in thinking about possible adjustments to freer market conditions. More cannot be claimed, since use is made of the concept of the inter-war consumer, and no examination is made of the prevailing conditions of supply.

VII. A List of Works Cited

[1] *The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom, 1920–1938.* Vol. I by Richard Stone assisted by D. A. Rowe and by W. J. Corlett, Renee Hurstfield and Muriel Potter (Cambridge, at the University Press, 1954).

[2] *The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom, 1920–1938.* Vol. II by Richard Stone and D. A. Rowe. (In preparation.)

[3] "A Constant-Utility Index of the Cost of Living," by L. R. Klein and H. Rubin in *The Review of Economic Studies*, Vol. XV, (2), no. 38, 1947–48, pp. 84–7.

[4] "Some Implications of 'Linearity,'" by P. A. Samuelson in *The Review of Economic Studies*, Vol. XV, (2), no. 38, 1947–48, pp. 88–90.

[5] *Consumers' Expenditure in the United Kingdom, 1900–1919*, by A. R. Prest assisted by A. A. Adams (Cambridge, at the University Press, 1954).

[6] *National Income and Expenditure 1946–1952* (London, H.M.S.O., August 1953).

[7] *National Income and Expenditure of the United Kingdom 1946–1950* (London, H.M.S.O., April 1951).

Richard Stone

Department of Applied Economics,
Cambridge.

CLASSIC AND CURRENT NOTIONS OF "MEASURABLE UTILITY"

I

IT is ten years since von Neumann and Morgenstern, in their famous aside to the economic profession, announced they had succeeded in synthesising "measurable utility." That feat split their audience along old party lines. It appeared that a mathematician had performed some elegant sleight-of-hand and produced, instead of a rabbit, a dead horse.

The most common reaction was dismay. To "literary" economists who had freshly amputated their intuitive feelings of cardinal utility at the bidding of some *other* mathematicians, it seemed wanton of von Neumann and Morgenstern so soon to sprinkle salt in their wounds with the statement: [1] "It can be shown that under the conditions on which the indifference curve analysis is based very little extra effort is needed to reach a numerical utility." To others, who had said all along that surgery was unnecessary, the verdict was no surprise but still welcome, coming as it did from an unexpected (non-Cambridge) source. But before long both these groups had joined in expressing doubts that von Neumann and Morgenstern had succeeded in doing what (these readers believed) they had set out to do. The spokesman for the "cardinalists," interpreting their cause as his own, was forced to conclude that they "seem to me to have done as much harm as good to the cause to which they have lent their distinguished aid." [2]

However, it is now clear that the impression that von Neumann and Morgenstern were leading a reactionary movement was erroneous. Their cause, if it can be so dignified, is a new one, not that to which Professor Robertson alluded. The operations that define their concepts are essentially new, and their results are neither intended nor suited to fill the main functions of the older, more familiar brands of "cardinal utility." It is unfortunate that old terms have been retained, for their associations arouse both hopes and antagonisms that have no real roots in the new context.

In the latest writings the theory has been formulated un-

[1] Von Neumann and Morgenstern, *The Theory of Games* (Princeton, 1944), p. 17.
[2] Professor D. H. Robertson, *Utility and all That* (London, 1952), p. 28.

ambiguously, so that the subject presents little difficulty to one approaching it now for the first time. This article is directed, instead, at readers who came early to the controversy, and who followed the theory in its various stages closely enough to become thoroughly confused.

By concentrating their discussion on the general concept of "measurability," von Neumann and Morgenstern unfortunately obscured the unique features of their particular construction. Later expositions have tended to follow them in this,[1] or to stress the empirical content of the von Neumann–Morgenstern results.[2] Very little attention has been given to the major source of misunderstandings: ambiguity concerning the differences in derivation and application between the new notion of "measurable utility" and the concept of the same name implied in the writings, say, of Marshall and Jevons. This article will attempt to distinguish clearly between the two concepts, chiefly by examining the different operations by which they are defined and tested.[3]

This procedure may provide some valuable exercise in the use of the operational approach, which in economic literature has been honored chiefly in footnotes. This approach regards the basic definition of a technical concept in scientific usage as: "What is measured by" a particular set of operations. Two different sets of operations are presumed to measure two different "things," although under certain conditions (discussed later) it is justifiable to treat the two concepts as identical. A scientific proposition is operationally meaningful if definite conceivable results of given operations are defined which would *refute* the statement; if it does not *restrict* the class of results which are to be expected, it cannot be useful for scientific purposes. The meaningfulness of concepts and propositions is a necessary,

[1] This is the only shortcoming of the otherwise excellent article by Alchian, "The Meaning of Utility Measurement," *American Economic Review*, March 1953, p. 26. The present paper may serve as a complement to Alchian's.

[2] Friedman and Savage, "The Utility Analysis of Choices Involving Risk," *Journal of Political Economy*, August 1948, p. 279. Mosteller and Nogee, "An Experimental Measurement of Utility," *Journal of Political Economy*, October 1951, p. 371. I have also benefited from reading as yet unpublished papers by Professors Bishop, Marschak and Allais.

[3] This paper was originally written as the first chapter in a thesis, entitled "Theories of Rational Choice Under Uncertainty: The Contributions of von Neumann and Morgenstern," submitted for undergraduate honors at Harvard University, April 1952. The thesis was written under the valuable guidance of Professor John Chipman. I am also greatly indebted to Professors Paul Samuelson, Robert Bishop, Oskar Morgenstern and Frederick Mosteller for the opportunity to discuss problems and to read unpublished writings on the subject, and to Mr. Nicholas Kaldor for his comments.

though not a sufficient, condition for their scientific usefulness.[1] This point of view will prove useful in the concluding section in clarifying the *difference* in meaning of two concepts bearing the same name.

The next section will describe the similarities between the old and new approaches to a " cardinal utility " and will present, in advance, some of the conclusions to be drawn as to their points of contrast. The next two parts examine the operational bases of the two theories, and the final section will analyse in detail the peculiarities of the von Neumann–Morgenstern construction.

II

Suppose that a man who prefers A to B, B to C and A to C must choose between having B for certain or having a " lottery ticket " offering A with probability p or C with probability $1 - p$.[2] Without asking him outright, is it possible to predict his choice? If so, what sort of data are necessary?

Economists of the school of Jevons, Menger, Walras and Marshall, on the one hand, and on the other those following von Neumann and Morgenstern would answer " Yes " to the first question. But their predictions would be based on quite different types of data.

For von Neumann and Morgenstern, it would be necessary to observe the man's behavior in other risk-situations, involving different outcomes or the same outcomes with different probabilities. The older economists, of whom we will take Marshall as typical, would ask no knowledge of his other risk-behavior. They assumed it possible, by observation or interrogation, to discover a man's intensities of liking for sure outcomes; on the basis of this knowledge alone, they were ready either to predict or to prescribe his choice between prospects.

This divergence is concealed by the fact that both schools would summarise the results of their investigations in the same symbolic shorthand, arriving at expressions that are formally

[1] These concepts and the general point of view were first formulated explicitly by Percy W. Bridgman, in *The Logic of Modern Physics* (New York, 1927), who declared them to be implicit in the thinking of modern physicists. The terms, and the emphasis on restrictiveness and refutability of propositions, have become familiar to economists largely through Samuelson's *Foundations of Economic Analysis* (Cambridge, 1948), but the other main propositions are less well known.

[2] A " lottery ticket " of this sort, offering a set of alternative outcomes with stated probabilities summing to unity, will hereafter be known as a *prospect*. If one outcome is offered with unit probability, *i.e.*, with no uncertainty, it will be known as a *sure outcome*.

identical. Under both procedures the results of experiment would be expressed by assigning a triplet of numbers, U_a, U_b and U_c, to the three outcomes, with the property: $U_a > U_b > U_c$. This triplet is a utility index for the three outcomes, since their order of magnitude reflects the order of preference. Next, both Marshall and von Neumann–Morgenstern would form the expression:

$$1 \,.\, U_b \gtreqless p \,.\, U_a + (1 - p)U_c \qquad (1)$$

where p and $1 - p$ are the respective probabilities of A and C. Each side of this relationship is a sum of the utility numbers corresponding to the outcomes of a given prospect multiplied by their respective probability numbers. Since the probabilities sum to unity, the result is a weighted arithmetic mean of the utilities, variously known as the mathematical expectation of utility, the expected utility, the moral expectation, moral expectancy, actuarial value of utility and the first moment of the utility–probability distribution.[1]

In each case the prediction (or advice) would have the man choose the prospect with the highest mathematical expectation of utility. Or, if the two sides of the relationship (1) were equal, he should be indifferent between the two prospects. A man whose behavior conformed to this rule could be said to be " maximising the mathematical expectation of utility."

With this much similarity between the two approaches, it is natural that they should commonly be confused. Yet the most misleading point of similarity remains: the fact that in both cases " utility " is said to be " measurable." The necessity of this assumption is seen more clearly if the left-hand side of expression (1) is rewritten $p \,.\, U_b + (1 - p)U_b$ and terms collected to form the relationship:

$$p(U_a - U_b) - (1 - p)\,(U_b - U_c) \gtreqless 0 \qquad (2)$$

This is merely relationship (1) in a different form. The rule would now have the man accept the prospective offering A or C if the left-hand side of (2) were positive, reject it if the left-hand side were negative, or be indifferent between it and the sure outcome B if the left-hand side were equal to zero. The important point here is that relationship (2) shows clearly that the rules rely on comparing *differences* in utility.

[1] Of these, " mathematical expectation of utility " and its shorter form, " moral expectation," will be used below. Both must be carefully distinguished from the " mathematical expectation of *money*," which is a weighted sum of the money outcomes, rather than of their utility numbers.

If only preferences were known, the triplet of utility numbers could be replaced by another with the same ordinal relationships. In general, such a monotonic transformation would not preserve equality, or given inequalities, among differences between utility numbers. The rule of maximising expected utility would lead to prediction or advice which would depend on the particular index used, and if preferences were the only guide, the choice of index would be arbitrary. The rule would be meaningless, therefore useless.

In order for the rule to give definite results, it would be necessary to find some " natural " [1] operation that would give meaning to differences in utility numbers, hence to the numerical operations implied by the rule. The new index, summarising the results of the additional operation as well as preferences, would belong to a more restricted set of indices than the set of all ordinal utility indices. Any two indices in which corresponding differences as well as absolute utilities satisfied the same inequalities would be related by a linear, and not merely any monotonic, transformation.[2] It is, then, necessary to find some aspect of behavior that can be described only by a set of numbers determined up to a linear transformation : a set, moreover, which is one of those expressing preferences. So much is necessary in order for the rule of maximising expected utility to be meaningful. Its usefulness, if any, must depend on the particular aspect of behavior which serves this purpose, if one can be found.

To say that both the Marshallian and the von Neumann–Morgenstern theories require a " measurable utility " is precisely to say that they require a utility index determined up to a linear transformation. At this point the similarity ends. In general, the order of magnitude of the differences between corresponding numbers would be different for the two indices; therefore, predictions based on the rule of maximising moral expectation

[1] Von Neumann and Morgenstern use this term to signify an operation other than numerical or logical manipulation of a mathematical model. A mathematical model is useful if the results of a " natural " operation can be correlated with numbers in such a way that numerical operations can symbolise and substitute for the " natural " operation.

[2] For an excellent exposition of the concepts of linear and monotonic transformations, the reader is referred to the article by Alchian, *op. cit.* Briefly, two indices are related by a linear transformation if for every point x on one index, the corresponding point y on the other index satisfies a relationship of the form : $y = ax + b$, where a and b are constants. The two indices differ only with respect to scale and origin.

If the difference between two numbers in one index is greater than, less than or equal to the difference between two other numbers, the corresponding differences in the other index will have the same ordinal relationship.

would differ for the two approaches. Moreover, it might be possible to find a measurable index by one method and not the other. Even if both should " exist," they would be in general monotonic, and not linear, transformations of each other.

III

Such theorists as Jevons, Menger, Walras and Marshall conceived of the crucial natural operation in the measurement of utility as taking place within the mind of a subject; it was a process of weighing introspectively the amounts of " satisfaction " associated with different outcomes.

Such an operation appeared more of an objective basis for theory to them than it would to modern economists. In their view, in the realm of reasonable men one man's introspection was as good as another's, and the theorist's own internal calculations were likely to correspond roughly to those of his subject; to this extent the results of the subject's operation were " observable." However, if challenged to produce less-subjective evidence, it would undoubtedly have occurred to Jevons that the most natural way to obtain the results of the man's introspective measurements would be to ask for them.

The first rough outline of the subject's pattern of " satisfaction " would emerge from an " indifference-map " experiment, in which he is asked to rank the events, A, B and C in order of preference. If he can compare the events and if his preferences are transitive (" consistent "), *e.g.*, if he prefers A to B, B to C and A to C, the results of this experiment are summarised by any triplet of numbers satisfying : $U_a > U_b > U_c$. This triplet is a " non-measurable " utility index, determined up to a monotonic transformation.

In what we will call a " Jevonsian " [1] experiment the man would next be asked to rank his preferences of A to B and his preference of B to C. If he finds that he can state, for example, that his preference of A to B exceeds his preference of B to C, we could summarise this information by any triplet of numbers satisfying the two inequalities : (*a*) $U_a > U_b > U_c$, and (*b*) $U_a - U_b > U_b - U_c$.

Finally, if A and B were sums of money, we could ask the man to vary the sum of money represented by B until he could tell us

[1] This name is suggested by J. C. Weldon, who points out that it implies no more than that Jevons assumed that preferences could be directly compared. " A Note on Measures of Utility," *Canadian Journal of Economics and Political Science*, May 1950, p. 230.

that he found his preference of A to B' equal to his preference of B' to C. If he finds such a B', then the results of this last operation would be expressed by any triplet of numbers satisfying the relationships : (*a*) $U_a > U_b > U_c$, and (*b*) $U_a - U_b = U_b - U_c$. Any two triplets obeying these relationships must be related by a linear transformation; they represent utility indices differing only by scale and origin.

The Jevonsian index for the individual, if one can be found, is thus " measurable "; which in this case means nothing more or less than that the subject was able to give consistent answers to these particular questions. It might be objected that in fact subjects will be unable to answer the questions, or will answer them inconsistently. This is an empirical matter. If the events were the possession of (*a*) one million dollars, (*b*) two dollars, and (*c*) one dollar, it seems likely that most people would answer the question (and, moreover, would state specifically that their preference of A to B exceeded their preference of B to C).[1] For such people, the notion of a cardinal utility index would not be " meaningless "; if it had no other meaning, it might at least imply that their answers to this sort of question could be predicted. Inconsistency is to be expected, particularly with respect to utility differences that are almost equal. But inconsistency also appears (in lesser degree) in the " indifference-map " experiment; in each case the most important information gained concerns choices which the subject finds easy to make.[2]

The more damaging attack has been on the usefulness of the method, though here again the case is not conclusive. If the only " consistency " discovered were consistency of answers with other answers, the results would be trivial. But Marshall and his predecessors regarded such answers as revealing the subject's internal measurements of satisfaction.[3] Since they believed the man based his decisions to act on the results of this introspective operation, they hoped to use the results of a Jevonsian experiment to predict his decisions.

As the ordinalists have demonstrated, decisions in the marketplace under conditions of certainty can be predicted on the basis

[1] At least, they would probably do so if asked point-blank and not given time for doubts as to whether the question " meant " anything (induced, perhaps, by the writings of Samuelson). This could be made part of the conditions of the experiment.

[2] The above discussion follows Weldon, *op. cit.*

[3] Such information might by itself be of interest in welfare economics; it might, though it need not, influence the evaluations on which a social-welfare function must be based.

of the " indifference-map " experiment alone. But this is not true of behavior under uncertainty or risk. With a Jevonsian utility index, on the other hand, it is possible to frame meaningful hypotheses placing definite restrictions on observable behavior in risk-situations.

The particular rule which Marshall and Jevons proposed (rather more for normative purposes than descriptive) was that the " rational " man would maximise the mathematical expectation of utility. In terms of the expression (1) cited earlier :

$$(1) \qquad U_b \gtreqless p \,.\, U_a + (1 - p)U_c$$

the rational man should (would) choose the prospect if the right-hand side were greater, the sure outcome B if the left-hand side were greater. If U_b, the utility that can be had for certain if the prospect is rejected, is regarded as the opportunity cost of the prospect, then the expression (2) :

$$(2) \qquad p(U_a - U_b) - (1 - p)\,(U_b - U_c) \gtreqless 0$$

represents the mathematical expectation of *gain* (measured in utility) associated with the prospect. The first term is the amount of utility that the man stands to win by accepting the gamble (in excess of the utility cost of the gamble) multiplied by the probability of winning, and the second term is the amount of utility he stands to lose multiplied by the probability of losing. The man should take any gambles whose expectation of gain is positive, reject all whose expectation of gain is negative, be indifferent to those whose expectation of gain is zero.

One point about this procedure must be emphasised, for it is in sharp contrast to that of von Neumann and Morgenstern. The utility index, and its measurability, on which the Marshallian predictions were based was not derived from any risk-behavior, and did not depend on any sort of consistency in that behavior. The rule of maximising expected utility on the basis of a Jevonsian index led to prediction, or prescription, of a man's choices among prospects without any previous observation of his behavior in the face of risk.

Actually, in the main field of consumer behavior characterised by risk—gambling—Marshall was not sanguine about the usefulness of the rule as a descriptive hypothesis. He took it as a universal empirical law that answers in the Jevonsian experiment would reveal diminishing marginal utility. In other words, if A, B and C are three sums of money such that $A > B > C$, and if $A - B = B - C$, then he assumed that corresponding utility

numbers would satisfy the inequality: $U_a - U_b < U_b - U_c$. A " fair " gamble is defined as one in which the mathematical expectation of *money* gain is zero, expressed by:

$$p(A - B) - (1 - p)(B - C) = 0 \qquad (3)$$

where p is the probability of winning A, $1 - p$ the probability of winning C and B is the cost of the gamble (in the above case, p must equal $\frac{1}{2}$). But, granted decreasing marginal utility, the corresponding expectation of *utility* gain is negative, so the rational man would never accept a fair gamble, or, *a fortiori*, an unfair gamble.

As Marshall was well aware, people did accept fair and even unfair gambles; but this behavior disputed their rationality, not (the curvature of) their utility index. The latter was established once and for all by tests that did not involve risk. Because of the existence of " pleasures of gambling " [1] (which Marshall measured by the acceptance of unfair bets), Marshall would have rejected the observation of risk-behavior as an alternative operation for measuring people's intensities of liking for outcomes.

The particular Marshallian rule governing risk-behavior is not implied by his concept of utility or by the methods of measuring it. An early form of the rule is stated by Jevons: [2]

> " If the probability is only one in ten that I shall have a certain day of pleasure, I ought to anticipate the pleasure with one-tenth of the force which would belong to it if certain. In selecting a course of action which depends on uncertain events, as, in fact, does everything in life, I should multiply the quantity of feeling attaching to every future event by the fraction denoting its probability."

The reliance of this approach on measurability (of " quantity of feeling ") is obvious; but it is equally obvious that the measurability of " pleasure," and even the general principle that likings for prospects should be based on likings for outcomes and their probabilities, does not imply this particular rule of decision-making. On the basis of a given Jevonsian index, Marshall or Jevons could just have easily proposed that the rational man base

[1] Unfair gambling could be " rationalised " if introspective tests revealed that the happiness derived from gambling outweighed the " expected loss of satisfaction " implied by the odds. However, Marshall wished to retain the normative connotation of " rationality " at the expense of predictive value. In his view, the pleasures of gambling " are likely to engender a restless, feverish character, unsuited for steady work. . . . " (*Principles of Economics* (London, 1925), Mathematical Appendix, Note IX, p. 843.) Granted that marginal utility was decreasing, and that pleasures of gambling could be ignored because " impure," then unfair gambling was unequivocally irrational, an " economic blunder."

[2] W. Stanley Jevons, *The Theory of Political Economy* (London, 1911), p. 36.

his preference on the mode, the median, the range, variance or other properties of the distribution of utilities. These rules would have been just as meaningful, and possibly more useful (especially if they took into account measures of " risk " as well as " central tendency "). In fact, it was the feeling that the emphasis on mathematical expectation was arbitrary and unrealistic which led to the decline of the concept even before doubts arose that a measurable utility could be discovered to make it meaningful.

IV

What von Neumann and Morgenstern asserted, in their famous digression,[1] was the possibility that the notion of maximising the mathematical expectation of utility might (*a*) be made meaningful, and (*b*) describe a wider range of risk-behavior than in its old usage, *if " utility " were measured (defined) in a special way.* Since they were concerned only with risk-behavior, the operation they proposed was the observation of choices in risk-situations. If a person's preferences among *prospects*—described merely in ordinal terms—should satisfy certain, apparently weak, axiomatic restrictions, then von Neumann has proved that it would be possible to find a set of numbers which could express these preferences in a particularly convenient way.

This set of numbers would be *a* utility index, because it would be one among all the sets of numbers (related by monotonic transformations) expressing the person's preferences (*not* " intensities of preference " or " quantities of feeling ") among sure outcomes. The novelty would be that this same set of numbers, applying explicitly only to sure outcomes, could also summarise the person's preferences among prospects. In a complete description of the individual's entire preference-structure, it would be unnecessary to list prospects separately or to record explicitly his preferences among prospects; these preferences would be known, through observation, but they could be expressed implicitly by the numbers attached to sure outcomes.

Clearly, the class of indices which could express with such economy preferences both among sure outcomes and among prospects must be smaller than the class of all ordinal utility indices (in most of which it would be necessary to list prospects individually). In fact, it turns out that all indices with this property,

[1] The theory which follows occupies only a few pages in the introduction to their book, and plays no role in the theory of games. The latter theory requires a commodity which is not only measurable but intercomparable and freely transferable, so pay-offs are expressed in money, not in von Neumann–Morgenstern " utility."

if any exist, will be related by linear transformations. Yet the index is not " measurable " in the sense that it is correlated with any significant economic quantity such as quantity of feeling or satisfaction, or intensity, such as intensity of liking or preference. It is derived from *choices*, and describes only *preferences*. It would be " cardinal " (" measurable ") only to the extent that the numerical operation of forming mathematical expectations on the basis of these numbers would be related to observable behavior, so as to be empirically meaningful.

Von Neumann and Morgenstern might simply have proposed the empirical hypothesis that an index of the desired sort could be found for certain individuals. However, this proposition, which we will call the Hypothesis on Moral Expectations, has little inherent plausibility. The major feat of von Neumann and Morgenstern is to show that the Hypothesis on Moral Expectations is *logically equivalent* to the hypothesis that the behavior of given individuals satisfies certain axiomatic restrictions. Since these axioms appear, at first glance, highly " reasonable," the second hypothesis seems far more intuitively appealing than the equivalent Hypothesis on Moral Expectations. It is thus more likely to be accepted on the basis of casual observation and introspection, although the two hypotheses would both be contradicted by exactly the same observations.

Most expositions follow von Neumann and Morgenstern in focusing all attention on the second hypothesis, *i.e.*, on the empirical relevance of the axioms. Once this is accepted, the Hypothesis on Moral Expectations " goes along free " in the form of the Theorem on Moral Expectations, which states conditionally that *if* an individual's behavior conforms to the axioms, a von Neumann–Morgenstern index can be computed for him (this proposition rests on logic rather than observation, and it has been established by several different proofs). Empirical test of the proposition is thus displaced to the axioms which imply it. The logical relationship of the axioms to the Hypothesis is usually left obscure, for the demonstration is too difficult for most readers.[1]

[1] Von Neumann and Morgenstern did not present a proof deriving the Theorem from the axioms until the second edition of *The Theory of Games* (1947); they describe it, with terrific understatement, as " rather lengthy and may be somewhat tiring for the mathematically untrained reader " (p. 617). A different, slightly easier proof, is given by Marschak in " Rational Behaviour, Uncertain Prospects, and Measurable Utility," *Econometrica*, April 1950. A genuinely simple proof has finally been presented by Samuelson, in " Utility, Preference, and Probability," abstract of paper given before the conference on *Les Fondements et Applications de la Theorie du Risque en Econometrie*, 1952.

Therefore the reader must generally take it on faith that behavior violating a particular axiom conflicts with the possibility of finding a von Neumann–Morgenstern index. Instead, we will follow the straighter, though less persuasive, route of describing how the Hypothesis on Moral Expectations would be tested directly.

We can state the Hypothesis in the following form. For a given individual (it is asserted that) a set of numbers *exists* (*i.e.*, can be found) with the two properties: (1) it is one of the sets expressing the individual's actual preferences among sure outcomes (*i.e.*, it is one of his ordinal utility indices); (2) numbers are assigned to sure outcomes in such a way that, if " moral expectations " of *prospects* were computed on the basis of these numbers, one prospect would have a higher moral expectation than another if, and only if, the person actually preferred the former to the latter, and two prospects would have the same moral expectation if and only if the person were indifferent between them.

If, from the set of all utility indices (related by monotonic transformations) one index can be found such that " moral expectations " computed on the basis of this particular set of " utilities " arrange prospects according to an individual's actual preferences among them, then any other index related to the first by a linear (not merely by any monotonic) transformation will also have this property. Thus, if one such index exists, an infinite set will exist: though still a tiny subset of all indices expressing ordinal preferences among outcomes. The Theorem on Moral Expectations states that such a set does exist, if and when the axioms apply. The Hypothesis states that the index actually does exist for given persons.

Having found such an index, we could submit it to a monotonic increasing transformation—*e.g.*, we could take the square or the log of each number—and the resulting set of numbers would be a perfectly valid utility index of outcomes. But it would not serve any more as a utility index of prospects as well; it would no longer be true that moral expectancies would correspond to the individual's actual preferences among prospects.

Our approach will consist of trying to find an index (hypothetically) with the two properties specified, noting in the process the type of behavior which would make this impossible. The " operational content " of the theory should be most obvious from this point of view, since it is intimately related to the body of behavior " ruled out " by the Hypothesis. The greater the amount and

importance of this behavior, the more powerful does the Hypothesis appear, though the less immediately plausible.

The basic operation in deriving a von Neumann–Morgenstern utility index is the observation of an individual's behavior in the very simplest situation involving risk: a choice between a sure outcome and a prospect involving two possible outcomes with given probabilities. The essential restriction the Hypothesis puts on behavior is that, by observing a person's choices in situations of this simple type, it must be possible to predict his choices among sets of prospects each offering a multitude of prizes with complex odds (some of the prizes possibly being other prospects). In the discussion below, the notation $(A, p; B)$ signifies a prospect offering outcome A with probability p or B with probability $1 - p$.

To fix the origin and unit of the utility index we seek, we assign arbitrary numbers to two outcomes (order of magnitude in order of preference); this guarantees that the index, if we can find one, will be unique. For example, let us assign to the money-sums \$1,000 and \$0 the utility numbers 10 and 0: *i.e.*, $U_{1000} = 10$, $U_0 = 0$. Now we consider a third sum, say, \$500, which the individual ranks between the first two; the problem is to find a utility number U_{500} that satisfies the Hypothesis on Moral Expectations, consistent with his preferences and with the two numbers already assigned arbitrarily. The crucial datum in the procedure is the probability $\dot{p}$ at which the person is indifferent between having \$500 with certainty or a prospect (\$1,000, $\dot{p}$; \$0).[1] Suppose that this $\dot{p}$ is $\frac{8}{10}$; *i.e.*, he tells us, or we observe, that he is indifferent between \$500 and (\$1,000, $\frac{8}{10}$; \$0). The Hypothesis on Moral Expectations then implies that it is possible to find a number U_{500} with the two properties:

(4.1) $0 < U_{500} < 10$ (since he prefers \$1,000 to \$500 and \$500 to \$0)

(4.2) $1 \cdot U_{500} = \frac{8}{10} \cdot 10 + \frac{2}{10} \cdot 0$

Obviously, such a number *can* be found: $U_{500} = 8$. So the Hypothesis has passed the first test.

Even in this first application, the Hypothesis was not tautologous. It was conceivable that the individual would prefer the certainty of \$500 to any prospect (\$1,000, p; \$0) for *any* p whatever: perhaps from extreme conservative principles or moral scruples against gambling. The Hypothesis would then imply that it was possible to find a number U_{500} satisfying both the following two relationships:

(5.1) $0 < U_{500} < 10$

and

(5.2) $U_{500} > p \cdot 10 + (1 - p) \cdot 0$, for *all* p, $0 < p < 1$.

But no such number exists; for any given U_{500} satisfying (5.1), there would exist a p, such that (5.2) would not hold. Therefore the Hypothesis would be contradicted.

Similarly, the Hypothesis would be contradicted if the individual should prefer any prospect (\$1,000, p; \$0) to the certainty of \$500; say, from an obsession with gambling.

It might seem that such behavior might well occur, thus rejecting the Hypothesis on the basis of one observation. But proponents of the Hypothesis could point out that it is unusual to have such "absolute" likes or dislikes: to feel so strongly either for or against gambling as to ignore entirely the relative stakes and odds.[1] They might suggest that such behavior, though it may exist, is statistically unimportant, so that it is reasonable to hypothesise that there will be *some* $\dot{p}$ at which the subject will be indifferent. A man with a marked taste for security might pick $\dot{p} = 9{,}999/10{,}000$; a born gambler might indicate $\dot{p} = 1/1{,}000$. In either case it would be possible to find a number U_{500} consistent with these preferences.

Thus, the Hypothesis puts very weak limitations in this initial application to the man's preferences among risky alternatives. The drastic test is to investigate whether or not his *other* choices will be "consistent" with this first choice. Let us return to our original result, $U_{500} = 8$. On the basis of our single observation (fixing $\dot{p}$ at $\frac{8}{10}$) we must be able to predict the individual's choice among any set of prospects involving the three outcomes, \$1,000, \$500 or \$0, with any probabilities. Given any set of prospects, we simply compute the moral expectations of each on the basis of the utility numbers (two of which, in this case, were fixed arbitrarily and the third derived from a single observed choice), and pick the prospect with the highest moral expectancy. No rationale for this procedure has been given here. It is not suggested that the individual makes his choice by a similar calculation. We are merely examining the implications

[1] The axioms require that he be indifferent at one and only one p. Tests have already shown that this perfect consistency is never encountered, but "indifference" might be defined stochastically (*e.g.*, if an individual rejected a prospect with given odds as often as he accepted it, he might be said to be "indifferent" to it).

[1] As John Chipman has put it, this is the "every man has his price" axiom.

of the hypothesis that it is possible to describe his behavior "as though" he did.

Thus, we compute the moral expectation of the prospect ($1,000, ½; $0) as: ½ . 10 + ½ . 0 = 5. If, when confronted with the choice between this prospect and the certainty of $500 ($U_{500} = 8$), our subject does not definitely prefer the latter, then it is not true that moral expectations computed on the basis of our utility numbers arrange prospects according to the individual's actual preference; our triplet does not have properties of a von Neumann–Morgenstern index. More than that, if this triplet is not one of those whose existence is implied by the Moral Expectations Hypothesis, *then no such triplet can be found*, and the hypothesis is thereby invalidated. For, once two numbers had been arbitrarily chosen, the third one was uniquely determined by our initial observation;[1] any other value for U_{500} would be inconsistent (in terms of our hypothesis) with that particular choice.

If, on the contrary, no serious[2] inconsistency appears, we can proceed to find utility numbers for other sums of money. If we observed that the subject was indifferent between $200 and ($500, ¼; $0), we would define $U_{200} = 2$. Our set of utility numbers corresponding to $0, $200, $500 and $1,000 is now 0, 2, 8, 10. If these are the unique set implied by the Hypothesis, then the individual should be indifferent between a 50–50 chance of $0 or $1,000, and a 50–50 chance of $200 or $500, since: ½ . 0 + ½ . 10 = ½ . 2 + ½ . 8. If, in fact, he prefers one to another, then the existence theorem is contradicted; the axioms on which it may be based do not apply to this individual.

More complicated tests can be devised. One of the "prizes" in a prospect might be another prospect, say, a "lottery ticket" offering a ⅘ chance of $1,000 and a ⅕ chance of $0; if the other prize is $200, the two prizes being offered at equal odds, this would appear in our notation: ($200, ½; ($1,000, ⅘; $0)). This "complex" prospect might be compared to the "simple" prospect: ($500, ⅝; $0). The person "should" be indifferent between them, since:

$$\tfrac{1}{2} \cdot 2 + \tfrac{1}{2}(\tfrac{4}{5} \cdot 10 + \tfrac{1}{5} \cdot 0) = \tfrac{5}{8} \cdot 8 + \tfrac{3}{8} \cdot 0$$

A new test would be to confront the subject with a choice between the above complex prospect and the simple prospect with

[1] Since indices satisfying the Hypothesis are determined "up to two arbitrary constants," the specification of two values determines the index uniquely.

[2] In a real experiment we would have to decide in statistical terms what to regard as a "reasonable" approximation to consistency with the Theorem.

three prizes: ($1,000, ⅘; $200, ½; $0, 1/10). Suppose that U_{200} is yet to be computed, and that the individual is found to prefer the complex "lottery ticket" to the above simple one. Then the Hypothesis would imply that a number U_{200} can be found satisfying both:

(6.1) $0 < U_{200} < 10$, and

(6.2) $\tfrac{4}{5} \cdot 10 + \tfrac{1}{10} \cdot 0 + \tfrac{1}{2} \cdot U_{200} < \tfrac{1}{2}(\tfrac{4}{5} \cdot 10 + \tfrac{1}{5} \cdot 0) + \tfrac{1}{2} \cdot U_{200}$

Since (6.2) implies $U_{200} < U_{200}$, it is clearly impossible to find a number with the desired properties.

Von Neumann and Morgenstern's controversial Axiom 3 : $C : b$[1] rules out this type of behavior by assuming that a person will be indifferent between two prospects which are derivable from each other according to the rules of probabilities. By application of these rules, any complex prospect offering other prospects as prizes may be reduced to a simple prospect, and the axioms requires the individual to be indifferent between this derived prospect and the original one. This implies that the individual is indifferent to the number of steps taken to determine the outcome. On the contrary, a sensible person might easily prefer a lottery which held several intermediate drawings to determine who was still "in" for the final drawing; in other words, he might be willing to pay for the possibility of winning intermediate drawings and "staying in," even though the chances of winning the pot were not improved thereby. A longer time-period of suspense would usually also be involved, but it need not be. The crucial factor is "pleasure of winning," which may be aroused by intermediate wins even if one subsequently fails to receive the prize. Many, perhaps most, slot-machine players know the odds are very unfavorable, and are not really motivated by hopes of winning the jackpot. They feel that they have had their money's worth if it takes them a long while to lose a modest sum, meanwhile enjoying a number of intermediate wins—which go back into the machine to pay for the pleasure of the next win. Von Neumann and Morgenstern single out axiom 3 : $C : b$, which excludes this type of behavior, as the "really critical" axiom[2]—"that one which gets closest to excluding a 'utility of gambling.'"[3]

The final major test of the Hypothesis would be to give the subject a choice between two such prospects as ($500, p; $1,000) and ($200, p; $1,000), where p is the same in each and where $500

[1] Von Neumann and Morgenstern, *op. cit.*, p. 26. [2] *Ibid.*, p. 632. [3] *Ibid.*, p. 28.

is preferred to \$200. For any p he must prefer the first to the second. If, for example, he was indifferent between them at some $p = P$, the Hypothesis would imply that there was a U_{500} such that:

(7.1) $2 < U_{500} < 10$, and

(7.2) $P \,.\, U_{500} + (1 - P)10 = P \,.\, 2 + (1 - P)10.$

Together these imply that $U_{500} > 2$ and $U_{500} = 2$, which can be true of no number (we are assuming in this example that U_{500} has not already been determined by some other experiment).

It is the "Strong Independence Axiom" ruling out this sort of preference which Samuelson has emphasised, presenting it as the "crucial" axiom.[1] It seems rather hard to justify this emphasis, since the axiom seems indubitably the most plausible of the lot. After all, all of the axioms are necessary to the final result, and this particular one is almost impregnable (even people who did not follow it in practice would probably admit, on reflection, that they should) whereas others (such as $3 : C : b$) are contradicted by much everyday experience. One might almost suspect Samuelson, who counts himself a "fellow traveller"[2] of the von Neumann–Morgenstern theory, of using the axiom (his invention) as a man-trap, luring critics past the really vulnerable points to waste their strength on the "Independence Assumption."[3]

In all this it has been emphasised that the Hypothesis on Moral Expectations sets a double condition for an acceptable index, the first part being that it must be one of the individual's ordinal utility index. Some critics seem to have overlooked this; for example, I. M. D. Little:[4]

> "Suppose that . . . we had given C, A, B, the utility numbers $10\frac{4}{5}$, 10, 9, because the consumer was 'indifferent' between (A certain) and (C with probability $\frac{5}{9}$ or B with probability $\frac{4}{9}$). It follows that . . . if the consumer is given the choice between B and A, A must be taken. In fact B might well be taken."

[1] Samuelson, "Utility, Preference, and Probability," *op. cit.* Also, "Probability, Utility, and the Independence Axiom," *Econometrica*, October 952, p. 672.

[2] Samuelson, "Probability, Utility, and the Independence Axiom," *op. cit.*, p. 677.

[3] Dr. Alan S. Manne's article, "The Strong Independence Assumption—Gasoline Blends and Probability Mixtures," *Econometrica*, October 1952, p. 665, gives an interesting example of a physical situation in which superposition does not apply, which may be more relevant to linear programming than to the present subject. Although it raises a doubt, I do not think his criticism is really damaging in this context. The argument in the same issue by H. Wold, "Ordinal Preferences or Cardinal Utility?" is definitely invalid.

[4] I. M. D. Little, *A Critique of Welfare Economics* (Oxford, 1950), p. 30.

If, as the last sentence suggests, the consumer preferred B to A (and C to both), we would start the experiment with this information. If we should then observe that he was indifferent between A and (C, $\frac{5}{9}$; B), then we would not be able to assign any utility number at all to A, for it would be impossible to find one satisfying the two conditions: $U_a < U_b < U_b$ and $U_c = \frac{4}{9} \,.\, B + \frac{5}{9} \,.\, C$. This behavior contradicts the Hypothesis, but the conflict would show up in the impossibility of finding a von Neumann–Morgenstern index, not in the index, once having been "certified," turning out to be inconsistent with ordinal preferences. This is a small point, but criticism which may be quite pertinent loses force if framed in a way that suggests the critic has not understood the conditions of the experiment.

Another type of criticism that goes wide of the mark uses examples involving only "utils," with no mention of the sums they represent or the particular observations on which they were based. Baumol, for example, cites two lottery tickets with prizes expressed in utils (*i.e.*, utility units, rather than money).[1] He computes their moral expectations, but asks, "Yet who is to say" that it is "pathological" for the subject to prefer the one with the lower expectation. To this a defender can retort: (*a*) Baumol gives no indication that the utility numbers were correctly derived; (*b*) it would not, of course, be "pathological" in any case; but (*c*) if it happened that the utility numbers were actually derived, for example, from the person's previous choice between the very two prospects cited, then it would be "inconsistency" of a sort usually defined as non-rational for him to switch his choice on this occasion. The crux of the matter is that it is impossible to decide on intuitive grounds whether it is "plausible" to choose the prospect with the higher moral expectation if only utils are cited and if the person's past choices are not known, since an appraisal of "plausibility" must be based on the money sums involved and on the person's pattern of behavior in risk-situations.

We have described above the main types of behavior that conflict with the Hypothesis on Moral Expectations. It is possible to give long lists of factors in risk-situations which would lead to these types of behavior.[2] Among those which have not

[1] William Baumol, "The Neumann–Morgenstern Utility Index—An Ordinalist View," *Journal of Political Economy*, February 1951, p. 65.

[2] Maurice Allais, in "Notes théoriques sur l'Incertitude de l'Avenir et la Risque" (as yet unpublished), and Professor Robert Bishop, in a paper that has not been published as yet, outline these considerations in detail.

been mentioned earlier are: feelings of skill, or, in general, the feeling that the "real" odds are more favorable than the stated odds (*e.g.*, belief in personal luck, or in "winning streaks"); inability to compute compound probabilities, and thus to derive simple prospects from complex ones; influence of the other elements in the risk-situation besides the money prizes and the probabilities—*e.g.*, the atmosphere of the gaming-room. The Theorem could possibly be framed so as to allow for these considerations, but in any practical application they would undoubtedly have some effect.

Whether or not these factors would lead to *serious* inconsistency is open to question; it seems very likely that they would in the field of gambling, but Samuelson suggests that they may be less important in business and statistical problems.[1]

The only laboratory test of the Hypothesis has been performed by Professor Frederick Mosteller, who derived utility curves for a group of subjects on the basis of their choice among simple gambles, and used these data to predict their choices among other and more complicated gambles.[2] The experiment side-stepped pitfalls which could not be avoided in practical application by abstracting from the major sources of inconsistent behavior: (*a*) all probabilities were known; (*b*) all calculations were performed for the subjects and their misconceptions eliminated;[3] (*c*) only small sums were used; (*d*) no social influences or any "other factors" were present; (*e*) behavior was observed only in one special risk-context (and that an artificial one). The fact that Mosteller found only mild consistency despite these "ideal" conditions might be interpreted as distinctly unfavorable to the hypothesis (though, considered in themselves, the results were inconclusive).

[1] Samuelson, "Probability, Utility, and the Independence Axiom," *op. cit.*, p. 677.

[2] Frederick Mosteller and Philip Nogee, "An Experimental Measurement of Utility," *Journal of Political Economy*, October 1951, p. 399.

[3] In the first two sessions subjects were not instructed on computing odds, and calculations were not performed for them. Behavior in these sessions was quite different from behavior in the rest of the experiment. Although these interesting results were not discussed in the article cited, Mosteller informed me that a definite finding of the experiment was that all the subjects behaved very differently before and after they had received lectures on dealing with probabilities. Moreover, their behavior showed a trend factor throughout the experiments as they grew increasingly familiar with the various gambles.

Even if the final conclusions had been much more favorable than they were, these observations would have dictated great caution in extrapolating them to situations outside the laboratory.

V

In deriving a "Jevonsian" utility index, we would begin as in the preceding section by assigning two arbitrary values; since, like the von Neumann–Morgenstern index, it is determined up to a linear transformation (if it can be found at all). As before, we might assign the utility numbers 10 and 0 to the outcomes \$1,000 and \$0. To find U_{500}, instead of confronting the individual with a choice between prospects, we would ask him to rank his preference of \$1,000 to \$500 and his preference of \$500 to \$0. Suppose he should tell us that the two preferences were equal; we would then assign the utility number $U_{500} = 5$. But on the basis of the von Neumann–Morgenstern experiment (let us assume that the same individual was the subject) we assigned the number $U_{500} = 8$. Is there not a conflict here?

To anyone who has skimmed the literature in this field it will not be obvious that the two sets of results are independent, hence do not conflict, for certain passages, particularly in *The Theory of Games*, gives quite the opposite impression. A close examination of the texts can, in fact, settle the question definitely. Instead of referring immediately to the literature, however, it is rewarding to examine a more general type of analysis, which might have made the issues intelligible to economists from the beginning.

Bridgman states the central proposition of the operational approach thus:[1]

> "We must demand that the set of operations equivalent to any concept be a unique set, for otherwise there are possibilities of ambiguity in practical applications which we cannot admit. . . .
>
> "*If we have more than one set of operations we have more than one concept*, and strictly there should be a separate name to correspond to each different set of operations."

The word "should" above should be interpreted as meaning that it is *useful*, in terms of certain specific purposes, to adopt the proposed point of view (this applies as well to the word "should" in this sentence). Because of incautious phrasing in his early writing, it has often been thought that Bridgman regarded his own definitions and classifications as logical imperatives. Actually (as

[1] Percy W. Bridgman, *The Logic of Modern Physics* (New York, 1927). The first sentence is on p. 6, the second on p. 10 (my italics).

Although such notions as the meaningfulness and restrictiveness of hypotheses have been made familiar to many economists by followers of Bridgman, the above proposition and the following ones, which are the very heart of the operational approach, are not widely known among economists.

he has since made explicit), it is not necessary to insist on his approach dogmatically or exclusively; without making any unique claims, it is easy to show the value of his point of view (which admittedly is not the most natural) in helping to avoid certain types of confusion.

Of course, in everyday usage we very commonly use the same term to cover different operations, on the grounds that they measure the "same thing." If we take the strict operational point of view that a "thing" is "what is measured by a particular operation," we need not ban the practice of treating two different operations as measuring the "same thing," but we must insist that it be justified by a direct argument. In an important passage, Bridgman indicates the nature of an adequate justification: [1]

> "If we deal with phenomena outside the domain in which we originally defined our concepts, we may find physical hindrances to performing the operations of the original definition, so that the original operations have to be replaced by others. These new operations are, of course, to be chosen so that they give, within experimental error, the same numerical results in the domain in which the two sets of operations may be both applied; but we must recognize in principle that in changing the operations we have really changed the concept. . . . The practical justification for retaining the same name is that within our present experimental limits a numerical difference between the results of the two sorts of operations has not been detected."

It would hardly be possible to find a passage more pertinent to a comparison of the economic theories discussed here. It may be helpful to give some economic illustrations; several examples of pairs of operations which differ but are usually treated as equivalent exist within the boundaries of our discussion.

(1) In the indifference map experiment the operations (*a*) of interrogating the individual as to his preferences, or (*b*) observing his actual choices (Samuelson's "revealed preference"), are usually regarded as alternative.

(2) In the "Jevonsian" experiment two operations are usually thought to be involved: (*a*) inquiring of the subject how he ranks his preferences; (*b*) the subject's own subjective process of "weighing" satisfactions. The first is said to measure differences in satisfaction on the assumption that it approximates the results of the second. The basis of this assumption is that in the area

[1] Percy W. Bridgman, *The Logic of Modern Physics* (New York, 1927); the first two sentences are on p. 23; the third, on p. 16 (in the latter sentence, Bridgman refers to the measurement of length by ordinary and by Einstein's operations).

where they can both be applied—the area of our own introspection—they give identical results (to the extent that we *can* balance satisfactions and that we tell the truth).

(3) In the von Neumann–Morgenstern experiment we used the operation (*a*) of asking the subject to name a $\dot{p}$ at which he would be indifferent; but we also suggested the possibility (*b*) of observing his choices when confronted with various pairs of prospects many times. Mosteller used the latter operation in his empirical tests.

In each case, the alternative operations are regarded as roughly identical. Actually, most economists who have had practical experience in applied theory are well aware that the results of interrogation and of observing actual behavior are almost never identical. Moreover, minor differences in the operations (such as the wording of questions) do "make a difference." [1] When a pair of operations is accepted as measuring the "same thing" it is because the divergence between the results is not regarded as significant. But as the range of application of each operation is widened over time, divergences appear in the area of overlap, and as precision increases, small differences become significant. Too often, theorists are unprepared for these phenomena and are thrown into confusion at the emergence of ambiguity and paradox.[2] One who accepts the propositions of the operational approach, on the other hand, not only expects these problems to arise but also knows where to watch for them. This (and nothing more pretentious) is the chief virtue which is claimed for the approach.

The relevance of the above discussion to the present problem can now be stated. Probably many readers of *The Theory of Games* and some later articles have received the impression that the third pair of operations above was being proposed as "measuring the same thing" as the second pair. In other words, many have interpreted the von Neumann–Morgenstern experiment as a more precise or practical, though indirect, approach to the results of the Jevonsian experiment: *i.e.*, basically, to the results of the subjective calculation of satisfactions. But if the operational point of view were more common as a habit of thought, readers would have placed the burden of proof on the (supposed) exponents of such an equivalence, challenging them to exhibit

[1] The operational approach may be useful in reminding us that differently worded questionnaires measure, in general, "different things."

[2] Such confusion was prevalent in physics prior to the revolutionary theories of Einstein and Planck. The operational approach was proposed as a means of avoiding such a state of mind in the future.

evidence. In fact, as they would have discovered, there are no such exponents. And the evidence does not exist, for in general the two operations do not produce even approximately the same results.

Let us recall the results of our hypothetical von Neumann–Morgenstern experiment: $U_0 = 0$, $U_{200} = 2$, $U_{500} = 8$, $U_{1,000} = 10$. If the von Neumann–Morgenstern index for this individual were plotted as a function of money incomes, interpolating a smooth curve, the graph would be concave upward between \$0 and \$500; in this range it would show "increasing marginal utility." This shape would reflect merely the fact that in this range of money outcomes the individual accepted "unfair" bets and that his choices among prospects showed consistency of a certain type.

In contrast to this, Marshall and Jevons predicted almost unconditionally one general feature of a "utility" curve derived from an experiment of the Jevonsian type; it would be concave downwards throughout its whole length, exhibiting non-increasing marginal utility at all points. Among those economists who believe that a Jevonsian experiment can have consistent results at all, few have ever disputed this opinion.

If Marshall's prediction does hold, then the numbers inferred from the two experiments will certainly conflict for any person who is observed to accept a gamble at odds which are not distinctly favorable, let alone odds that are actually unfair. If such a person has a von Neumann–Morgenstern index it will have a range of increasing marginal utility, which is assumed to be contradictory to the Jevonsian index. Marshall himself pointed out that there were such people, even among those otherwise "rational."

Thus we can state: the von Neumann–Morgenstern and Jevons–Marshall operations do *not* measure the "same thing." The former do not simply tend to measure the Marshallian "utilities" with greater precision, *i.e.*, to a higher number of significant figures. In general, the ranking of first differences in "utility" as a function of money will be different, depending on which "utility" is being measured; if the functions are continuous, the second derivatives will not in general have the same sign.

To those who accepted the apparent inference that the gambling operation allowed an "estimate" of the results of a Jevonsian experiment, a moment's thought should have suggested the question: Why is an estimate necessary? If risk-behavior

reveals something about differences in satisfaction, presumably it is because those differences in satisfaction are the decisive factor in decision-making. But in that case we might as well ask about satisfactions directly.[1]

This discussion has not established yet that von Neumann and Morgenstern do not themselves regard their operation, mistakenly, as measuring differences in satisfaction. The evidence for this is their repeated rejection of the notion that an individual reaches decisions in risk-situations by calculating differences in utilities, their brand or any other (such as Jevonsian utilities). But much confusion probably stems from the fact that they are prone to write in large, clear type about comparing differences in preferences and to discard such notions in fine print at the bottom of the page. Thus, they formulate their "continuity" axiom (which rules out the "absolute" rejection of lottery tickets or the "absolute" love of gambling discussed earlier) as follows:[2]

> "No matter how much the utility of v exceeds . . . the utility of u, and no matter how little the utility of w exceeds . . . the utility of u, if v is admixed to u with a sufficiently small numerical probability, the difference that this admixture makes from u will be less than the difference of w from u."

This leaves a strong impression, to put it mildly, that the notions of quantity of utility and differences in quantities are an integral part of the argument . . . unless the reader follows a footnote on to the next page:[3]

[1] It is perhaps conceivable, though unlikely, that his feelings of satisfaction might be difficult for an individual directly, being only semi-conscious, though influencing his behavior. But if it were true that his risk-behavior was a reliable and convenient guide to his feelings of differences in satisfaction, this would ensure that the Jevonsian experiment *could* always be performed. For even if the subject were an economist, say, who detested introspection, he could note tacitly his reactions to hypothetical lottery tickets (or even, if conscientious, plot his behavior at bingo games and horse races) before replying to questions about differences in satisfaction.

On the other hand, to say that the Jevonsian experiment cannot lead to consistent results is to say that any consistency revealed by the von Neumann–Morgenstern experiment is not closely related to satisfaction.

[2] Von Neumann and Morgenstern, *op. cit.*, p. 630. Since the content of this passage is not under discussion, the reader is advised to pass his eyes over it rather swiftly.

[3] *Ibid.*, p. 631 n. This is not the only time in their book that the authors introduce notions in a "literary" discussion of their theorems that they simultaneously disown, informing the reader that it all comes out in the axioms. Of course, the very inclusion of a verbal discussion is a concession to non-mathematicians; but one can do only so much in the name of "heuristic devices." It is not a recommendation of the empirical relevance of axioms to say that they can be made plausible in literary translation only by identifying them with notions (such as subjective utility differences) which are actually irrelevant.

> " The reader will also note that we are talking of entities like ' the excess of v over u,' or ' the excess of u over v ' or (to combine the two former) the ' discrepancy of u and v ' (u, v, being utilities) merely to facilitate the verbal discussion—they are not part of our rigorous, axiomatic system."

One other passage in the " literary " discussion is probably the greatest single source of misunderstanding; it concerns a situation in which an individual is offered a choice between a sure outcome, A, and a 50–50 chance of B or C, where C is preferred to A and A to B [1]:

" any assertion about his preference of A against the combination contains fundamentally new information. Specifically: If he now prefers A to the 50–50 combination of B and C, this provides a plausible base for the numerical estimate that his preference of A over B is in excess of his preference of C over A."

This passage seems clearly to imply that the von Neumann–Morgenstern operation aims at the same " entities " (*i.e.*, utility differences) as the Jevonsian experiment, being merely more indirect. But again, the crucial withdrawal is in the footnote: [2]

> " Observe that we have only postulated an individual intuition which permits decision as to which of the two ' events ' is preferable. But we have not directly postulated any intuitive estimate of the relative sizes of two preferences —*i.e.*, in the subsequent terminology, of two differences of utilities."

The equivocal word here is " estimate." This implies that the procedure tries to approximate the results of an introspective operation. Actually, in the von Neumann–Morgenstern experiment described above utility differences were not " estimated " but computed exactly. They were related precisely to certain risk-choices; no other evidence, intuitive or otherwise, was allowed to influence the results.

The authors themselves point out the ambiguity:

> " Are we not postulating here—or taking it for granted—that one preference may exceed another, *i.e.*, that such statements convey a meaning? Such a view would be a complete misunderstanding of our procedure." [3]

Their procedure is actually to use the risk-choices to *define* the utility differences—to make this notion meaningful in a new way —not to " estimate them." Very likely it was the above passage which led Professor D. H. Robertson to imagine that von Neumann

[1] *Op. cit.*, p. 18. [2] *Ibid.*, p. 18 n. [3] *Ibid.*, p. 20.

and Morgenstern had proposed a method for estimating relative differences in desirability. It is easy to spot this inference in his critical account of their theory: [1]

> " Thus in the case of a man who does not know how to choose—*i.e.*, who chooses by the toss of a mental coin—between the certainty of B and an even chance of A or C, these authors offer 1 as a measure of the ratio of AB to BC. . . . But it is clear that this would only be *true* for a particular type of man, namely, one who is content to be governed entirely by mathematical expectations. . . . " (My italics.)

In the case of the behavior described, von Neumann and Morgenstern would *define* the ratio of utility differences as 1; and in a matter of definition there can be no question of truth and falsity. Those standards could be applied only to a *hypothesis* that the scale defined by von Neumann and Morgenstern bore some empirical relation to some other data, not involving risk: for example, the hypothesis that it approximated the results of a Jevonsian measurement. It is clear from the context of Robertson's remarks that he believed, like most readers, such a hypothesis was implied. It has been the argument of this paper that this belief is mistaken.

In the same passage Robertson adopts essentially the Marshallian position: [2] " . . . we can make no sense of his actions in the face of uncertainty without supposing that he can form some estimate of the relative difference in desirability between pairs of situations." Whatever the plausibility of this argument, it has no relevance to the von Neumann–Morgenstern theory. Where Marshall postulated a type of " consistency " between men's risk-choices and their feelings of relative differences in desirability of the outcomes, von Neumann and Morgenstern hypothesise simply a consistency between risk-choices and other risk-choices. By coincidence, it happens that the particular form of " consistency " prescribed by Marshall (he might well have chosen some other rule than the maximisation of " expected utility ") would imply von Neumann–Morgenstern " consistency "; though not vice versa. A man who had a Jevonsian index *and* who obeyed Marshall's dictum would have a von Neumann–Morgenstern index; but the existence of the latter index implies neither of the first two conditions (and the existence of the former index implies neither of the last two conditions).

[1] D. H. Robertson, *Utility and all That* (London, 1952), p. 28. [2] *Ibid.*, p. 28.

Thus the von Neumann–Morgenstern axioms cover all those who are " rational " in the Marshallian sense; in addition, they may apply to others who would be " irrational " in Marshall's terms, *e.g.*, bettors who accepted unfair bets [1]: and still others for whom no Jevonsian index can be defined.

Von Neumann and Morgenstern describe their procedure thus: " We have practically defined numerical utility as being that thing for which a calculus of mathematical expectations legitimate." [2] The word " practically " is unnecessary; from an operational point of view, they *have* so defined it. Does such a " thing " exist? Friedman and Savage have emphasised the use of the axioms, which put definite restrictions on behavior, as a basis for testable and fairly powerful predictions concerning risk-choices.[3] *Should* it exist? Marschak has proposed that the axioms be regarded as defining " rational " behavior in risk-situations; according to this view, which no other writer has supported, the axioms are of interest for normative purposes, even if no one actually does conform to them.[4]

Von Neumann and Morgenstern cited only the descriptive aspect of the theory. They were not particularly interested in predicting or prescribing people's preferences among prospects, but merely in describing them in terms of mathematical expectation: a necessity in their own theory of games, a convenience in any context. This original view of the subject, by far the least pretentious, is probably the most appropriate. The emphasis by Friedman and Savage on the meaningfulness of the hypothesis obscures the fact that many other hypotheses are just as meaningful, perhaps more useful, and even more convenient for predictive purposes (though not for description). For example, hypotheses in terms of parameters of the *money* distribution, such as mathematical expectation and variance, might produce fully as good predictions as those based on a derived von Neumann–Morgenstern index, and they would certainly be easier to test. As for the normative aspect, there seems very little reason to advise a man who is extremely reckless (or excessively conservative) in some of his risk-choices that he should be consistently reckless (or conservative) in his remaining risk-choices. Nor does it seem that a person who behaves approximately in accordance with a von Neumann–Morgenstern index would be in any sense better off if he behaved *more* in accordance with it. If these conclusions are accepted (and von Neumann and Morgenstern would probably accept them), then one must answer the question, " What does it matter whether such a ' thing ' exists? " very conservatively.

[1] The theory, since it allows for this sort of behavior, cannot be said to rule out all forms of " pleasure in gambling." But proponents have rather overplayed this point. Although acceptance of unfair bets does not contradict the theory, there is ample behavior which does, including some other forms of " pleasure in gambling."

[2] *Op. cit.*, p. 28.

[3] Friedman and Savage, *op. cit.*

[4] Marschak, *op. cit.*, p. 139; also, " Why ' Should ' Statisticians and Businessmen Maximise ' Moral Expectation '? " *Proceedings of the Second Berkeley Symposium on Mathematical Statistics and Probability* (Los Angeles, 1951), p. 493.

At any rate, it should be clear that Baumol's impression that " Neumann and Morgenstern consider the utility index obtained by them as the *only* true one " [1] is quite mistaken. So far as behavior under certainty is concerned, only the ordinal features of the index are relevant. The only numerical operation permitted is that of forming mathematical expectations, which is related to risk-behavior; it makes no sense, for example, to *add* von Neumann–Morgenstern utilities. The cardinal features of the index—the relative differences between utility numbers—are used only to predict or describe risk-behavior, and, moreover, are derived solely from risk-behavior. Therefore the results of a von Neumann–Morgenstern experiment cannot be " checked " against the results of any experiment not involving risk-choices. This applies to simple introspection, to the Jevonsian experiment, and also to other attempts to base a cardinal utility on consumer behavior.[2] These latter have been rather thoroughly discredited by Samuelson and others because of their use of special unrealistic assumptions. But the existence or non-existence of a von Neumann–Morgenstern index and the existence of " measurable " indices based on these other operations are entirely independent matters. Each method might, out of the whole set of ordinal utility indices, select a different subset of indices reflecting some type of data in addition to preferences; if the indices inside each subset were related by linear transformations, each method would result in *a* " measurable " utility index. These indices might have entirely different shapes, but so long as they did not entirely overlap in application, there would be no need to single out any one of them as being the " true " utility index. Certainly von Neumann and Morgenstern make no such claims for their construction; they cite only its convenience in

[1] Baumol, " The Neumann–Morgenstern Utility Index—an Ordinalist View," *Journal of Political Economy*, February 1951, p. 61.

[2] See Robert Bishop, " Consumer's Surplus and Cardinal Utility," *Quarterly Journal of Economics*, May 1943. For criticism of these approaches see Samuelson, *Foundations of Economic Analysis*, pp. 174–9.

formalising risk-behavior. There is no reason to believe that a " measurable utility " derived by some other method could do this; [1] on the other hand, the von Neumann–Morgenstern index could not do the main jobs for which other constructions are intended. It would be of no aid whatsoever in formalising consumer behavior under certainty (the goal of the Fisher–Frisch constructions : see Bishop, *op. cit.*), nor would it seem to be of any relevance in welfare evaluations (whereas a Jevonsian index might be).[2] If it is true, as Professor Robertson has complained, that von Neumann and Morgenstern have actually done harm to " the cause " of creating acceptance for a measurable utility with these last two objectives,[3] this is but a measure of the general misinterpretation of their results : a confusion for which they cannot evade all responsibility.

D. ELLSBERG

Cambridge, England.
Cambridge, Mass.

[1] Thus, Alchian is mistaken in asserting that " measurability ' up to a linear transform ' both *implies* and is implied by the possibility of predicting choices among uncertain prospects, the universal situation " (" The Meaning of Utility Measurement," p. 49 (my italics)). Actually, it is easy to conceive a " measurable " utility index which is neither derived from nor used to predict risk-behavior.

[2] After I had reached these conclusions, I had the great benefit of conversation with Professor Oskar Morgenstern, who was kind enough to read and discuss with me an earlier version of this paper. Professor Morgenstern confirmed what were then speculations on the implications of the theory; he particularly confirmed that he and von Neumann had envisioned only limited application, to risk-behavior alone.

[3] Robertson, *op. cit.*, p. 28.



REVIEWS

The Future of Sterling. By A. C. L. DAY. (London : Oxford University Press, 1954. Pp. vii + 227. 12*s.* 6*d.*)

IN the course of this thoughtful and extremely readable little book, Mr. Day examines anew a number of well-worn and important themes : the nature and significance of the " dollar problem " ; the advantages reaped and the dangers incurred by the practice of discrimination in foreign trade ; the genesis, structure and internal strains of the Sterling Area ; the respective merits and drawbacks of fixed and mobile exchange rates. The analysis throughout is acute, the attitude fair-minded, the language temperate. On the main issue, whether the world can expect a complete and permanent solution of the " dollar problem," the author professes himself unable to reach a firm conclusion.

Nevertheless, this is very definitely a book with a thesis, and a challenging and provocative one ; it is (p. 6) that the " generally accepted British policy of maintaining and reinforcing London as the chief pivot of the world payments system is ill-advised." The wide use of sterling as an international currency, so runs the argument, is an illogical survival of the days when Britian was the predominant economic power ; it has been fortuitously prolonged by the very acuteness of the power-war dollar problem, enabling the pound to strut and posture as *primus inter secundos*. If a unified and liberal Western system of trade and payments *can* be re-established the pound's pretensions will stand unmasked ; if it *cannot*, the attempt to glorify the pound will continue to expose the British economy to strains and costs out of all proportion to the admitted advantages.

This thesis is worked out with reference first to Britain's position *vis-à-vis* her Sterling Area partners and then to her position *vis-à-vis* the non-sterling non-dollar world, that is to say, predominantly, Western Europe. Britain, Mr. Day thinks, has enjoyed the lion's share of whatever net benefit accrues to the Sterling Area from the policy of joint discrimination against dollar goods ; but the Outer Area has had the lion's share of whatever advantages the Sterling System confers in the way of convenience and stability, as well as the use of British savings to build the milk-

bars and luxury flats proscribed within Britain's own borders. As progress is made therefore towards unification of the trading world, Britain's net benefit from the Sterling System declines both absolutely and relatively to that of her partners. As regards Europe, Mr. Day fears lest the accord of dollar-convertibility to foreign holders of sterling, coupled with the maintenance of restrictions on dollar purchases at home, should lead to a situation in which Britain (p. 151) " has removed the dollar problem of practically all other nations but still has one of her own," so that " after paying most of the costs of removing world discrimination she will be blamed for being the only illiberal country left."

Mr. Day is not content to rest on these negative conclusions, but outlines an ingenious alternative system of world payments, based on an extension of the functions of the European Payments Union. Briefly, the idea is that the net payments (if any) due from each non-dollar country to the dollar countries should be made through the Union. Payments by the Union to the dollar countries would be made only in gold.

> " When payments of the Union as a whole with the dollar bloc are in balance, individual members could settle their balances arising from American trade in just the same way as they settle their balances arising from European trade; that is, partly in gold and partly in credit, the proportions depending on the cumulative position of their accounts with E.P.U. In those circumstances individual members would have no incentive to discriminate against payments to America. When, however, payments of Union members as a whole to America show deficit, then members would clear the American part of their accounts wholly or more predominantly in gold, and so would have an incentive to discriminate against America " (pp. 10–11).

America's co-operation would be required to the extent of declining to receive gold from any source except the Union itself, and, if she felt so moved, of giving the system a good start by means of a stabilisation loan to the Union. But she would not be called upon to depart from her settled resolve not to treat anything as international money except gold and dollars; while at the same time the plan would meet the need of the reserve-hungry non-dollar world for its central monetary organ to be a true bank—a potential *creator* as well as a mere transmitter of international money.

I do not myself think it likely that things will happen in Mr. Day's way. Other alternatives, since his book was written, have begun to lift their heads above the horizon. And, while I share some of his fears, I think the prospects for Britain and her currency are quite a bit brighter than Mr. Day will allow. In the long spectrum extending between those who dismiss the " dollar problem " as nonsense and those who hug it to their breasts, I find myself nearer than him to the Erhardian, farther from the Baloghian, extremity. If I miss anything in his book, it is the tough insistence on the importance of internal monetary *discipline which* pervades an almost contemporary study of the weaknesses of the Sterling Area—Sir Sydney Caine's trenchant essay in the April 1954 *Lloyds Bank Review*. Almost the only place where I feel inclined to cry out upon Mr. Day's smooth tolerance is that in which (p. 105), after conceding that " criticisms of the Dalton episode are largely to the point," he defends the " euthanasia of the rentier " as a reasonable objective, and claims that " the cheap money policy was by no means the unmitigated evil it is often painted to be, and there is no reason to suppose it may not become respectable again, *even in prosperous times* " (my italics)!

So the kicks which this reviewer has himself received for his lack of faith and courage from those to the rumbustious right of him in the convertibility spectrum he respectfully transmits to Mr. Day's posterior, with his warm congratulations on writing a book which, for its matter and its style, deserves to be read and pondered by all those concerned to form or to influence British policy—even if some of them rise from its perusal with a determination not so much to follow Mr. Day's advice as to make sure that he is proved wrong.

D. H. ROBERTSON

Trinity College,
Cambridge.

International Economics. By C. P. KINDLEBERGER. (Homewood, Illinois: Richard D. Irwin, 1953. Pp. ix + 543. 64*s*.)

THIS is a new text-book on international economics by the distinguished author of *The Dollar Shortage*. It is intended for students with at least one full year of elementary economics behind them, but the author admits that more rapid progress can be made if it is read at a later stage. The reviewer would go further and suggest that some second-year students may find a good deal in it that they cannot fully understand. International economics is an advanced branch of the subject which requires a knowledge of nearly all other branches, both theoretical and applied.

This is a long book of over 500 pages, with more than 100 diagrams and tables. In view of its wide scope it is not easy to see

how it could have been shortened. The author admits frankly that there is a good deal of repetition, but any teacher knows how difficult this is to avoid. There are also several digressions on subjects not strictly within the field of international economics, but these are always useful. One of the most important is that on economic development and growth. It is desirable to emphasise this topic both to show the importance of dynamic considerations and the shortcomings of purely static analysis and to illustrate some of the ways in which a classical theory, based to a considerable extent on economic institutions in Britain and other advanced countries, may not be wholly applicable to under-developed areas.

The book is up to date, and the theoretical contributions and practical lessons of the post-war years are not just tacked on as a rather uneasy addendum to the pre-war body of knowledge. They are woven into a general analysis that makes the book a useful statement of the present position of international economics.

The approach is in general theoretical rather than historical or institutional (although, as would be expected from an author of such wide practical experience, there are numerous useful illustrations drawn from many countries). Professor Kindleberger justifies his approach on the grounds that " if the student fails to gain from his course in international trade a capacity to analyse, his recollections that the Corn Laws were repealed in 1846 (and that corn is really wheat), that the investment guarantees under the E.C.A. program covered this risk but not that, or that free trade is good, tariffs bad, will have little meaning for him."

This is obvious common sense, and it is certainly possible to present the old-established theories in a form that will train the student in analysis. But is the same true of more recent developments? Do we yet know enough about economic growth, for example, to generalise in a way that may not sometimes be misleading? Then, again, many recent contributions to theory have served to show merely how unsatisfactory is the older analysis. Thus, the repercussions of exchange-rate depreciation are far more complicated than the classic pre-war analysis of Mrs. Robinson would suggest (although her analysis should still be an essential part of the student's course). It is now recognised that the long-run effects of any policy in the international field are most uncertain when dynamic considerations are taken into account. And even if we could foresee these consequences we are now more aware of the difficulty of prescribing the correct policy when there are so many political difficulties and conflicting goals—efficiency, stability, equity between and within nations, and so on.

What, then, is the teacher to do? If he is realistic and explains all the difficulties and all the possible outcomes, the student may be simply bewildered. If he sticks to more straightforward theories with over-simplified assumptions, the student will have more chance of acquiring a power to analyse, but he may be given dangerously false impressions of the real nature of the problems.

Professor Kindleberger has made a brave attempt to steer a middle course and produced a notable text-book for which teachers and students will be grateful. He says that among theorists he passes as " a man of affairs," and it is certain that no student who has carefully studied his book will be left with the impression that there are easy or clear-cut solutions to the international economic problems of the modern world. It may be that some will get more out of his practical illustrations of the post-war problems of, say, Germany, Italy and Britain than from his interesting theoretical discussions of " structural disequilibrium at the factor level " or his generalisations about the views of " liberals " and " planners." But the good student will recognise in this book a real attempt to grapple with the very difficult problems of our day and to provide a coherent analytical framework, much of it not to be found in other text-books, within which they can be studied.

DONALD MACDOUGALL

Nuffield College,
Oxford.

American Foreign Assistance. By W. A. BROWN and R. OPIE. (Washington, D.C.: The Brookings Institution, 1953. Pp. v + 615. $6.)

MESSRS. BROWN AND OPIE have provided in this book the first comprehensive account and considered appraisal of foreign-aid operations for the period beginning just before lend-lease assistance and ending in December 1952. Over the twelve years, gross assistance of some $94 billion was extended by the United States to other countries. After deducting repayments and assistance by other countries to the United States, the amount of net foreign assistance extended by the United States was over $80 billion in this period. Throughout the period, the United States gave this assistance on an emergency basis as a means of pursuing the political, military and economic objectives of its foreign policy. The amount was more or less evenly divided between the wartime and post-war programmes. Since mid-1950 increasing emphasis has been placed on the military objectives of assistance, as can be inferred from the fact that more than two-thirds of the $6

billion of assistance authorised by the Mutual Security Act of 1952 for the fiscal year 1953 was designated " military assistance." Further emphasis on military assistance and less on other forms of assistance is implied if the slogan " trade not aid " is to play a part in the development of future American policy. It is, moreover, an emphasis accepted in the report of the Randall Commission.

The account of foreign-aid operations contained in this book will remain the standard reference until official documents are made available both here and in the United States. It is, therefore, more useful at this point to consider their assessment of the assistance programmes. In this appraisal there are striking contrasts with the relevant sections of the report of the Randall Commission. Foreign assistance has been an, if not the, outstanding feature of the foreign policy of the United States, but whereas Brown and Opie consider it in the context of American foreign policy, the Randall Commission does not do so. Herein lies the strength of the book and the weakness of the report. Brown and Opie crisply say that, " In the future, as in the past, foreign assistance must be rooted in the interest of the United States, broadly interpreted it is true, but still in the American interest " (p. 580). But they do not conclude, as does the Randall Commission, that " economic aid on a grant basis should be terminated as soon as possible." Their difference does not involve the adoption of a general philosophy of aid, for they accept a flexible, pragmatic basis, as does the Commission. Their difference is one of method : " To ask how much foreign assistance should be given at any time is to ask how much it is necessary or desirable for the United States to assist its allies in building up their national strength. To answer this question calls for the continual exercise of judgement on the basis of changing facts, and no one form of assistance can be excluded in advance, such as would be the result of arbitrarily confining assistance to military end-items " (p. 562).

The same basic difference of approach led the Randall Commission to ignore the problems posed by European integration and Japanese resurgence and to give only passing attention to the problems of under-developed areas. Brown and Opie, however, list and discuss the issues necessary to the reconstruction of the international economic system under four heads : " the pursuit by individual countries (including the United States) of domestic monetary and fiscal policies that will keep their external accounts in balance ; the pursuit of policies in foreign trading relations that will allow goods to flow more easily in international commerce ;

action to increase the gold and foreign-exchange reserves of individual countries as the prerequisite of restoring the convertibility of currencies ; and action by all countries to rebuild the network of international investment. The fulfilment of these four requirements is relevant to the outstanding problems of American assistance " (p. 570). Brown and Opie regard the failure to emphasise sufficiently the strengthening of reserves as the weakest link in the whole assistance programme, and recommend such a strengthening " by whatever method is appropriate." With this conclusion the Randall Commission is, of course, in general agreement, though even here the recommendations of the Commission might be thought to fall short of the requirements of countries should a general move towards convertibility be accompanied by a marked decline in American national income.

Providing one accepts the general multilateral-convertibility outlook of the authors of this book, there is little indeed to criticise in their handling. They are as forthright as any European would be to point out inconsistencies in American policy within the field of foreign assistance. They show, for example, that in pricing policy E.C.A. on the one hand tacitly accepted differential pricing under the Schuman Plan, while on the other making a determined effort to apply the principle of a single, free, competitive market on a world-wide scale in respect of petroleum and vehemently opposing dual pricing of European coal supplies. Both the authors and the Brookings Institution are to be warmly congratulated on bringing out so opportunely this important contribution to a major issue in the field of international economic relations. It is earnestly to be hoped that it is given the attention it deserves in the discussions now proceeding in Washington.

D. J. MORGAN

London School of Economics.

Die Konjunkturschwankungen. By W. A. JÖHR. (Zurich and Tübingen : J. C. B. Mohr, 1952. Pp. 675.)

THIS is the second volume of a comprehensive work by Professor Jöhr, designed to lay the theoretical foundations for economic policy. While the first volume gave a detailed account of equilibrium theory, the present one is entirely devoted to the trade cycle. The policy implications are developed merely in outline, and are relegated to a future third volume.

A mere glance at the table of contents of the treatise under review shows that it is an ambitious attempt at a critical conspectus of the present state of trade-cycle theory. Professor

Jöhr takes nothing for granted, and omits nothing. He devotes two-fifths of the book to laying the empirical and theoretical foundations upon which to build his analysis of economic fluctuations and he travels all the lanes and by-ways that fork off the main highway of research, and he does it not by stating simply his own views, but throughout the book by presenting and criticising theories of others and gradually distilling his own brand of a solution. It is in this sense a learned treatise and, as the author claims, a systematic survey of trade-cycle problems, but it does not offer a positive and rigorous theory of the cycle. Professor Jöhr develops in the concluding chapters a socio-psychological explanation of the basic features of the cycle and sets it against the mechanistic models which he has examined in the middle part of the book. His main argument against all model builders is that they assume a rigid pattern of economic behaviour, and thus tend to overlook, or are forced to disregard, the importance that changing moods and the contagious nature of fears, expectations and so on are likely to have on the relationships of the models.

By making psychological factors, which tend to reinforce each other irrespective of any real causes, the mainspring of cyclical oscillations, and by building into this pattern the various mechanistic factors that operate with varying strength in the different phases of the cycle, we shall get, Professor Jöhr believes, a more realistic approach to the trade cycle. In fact, even this is more than he regards as feasible or desirable. On a note of resignation and agnosticism he concludes that any model, even one with a great many causally significant variables, would yield not only a one-sided but also a deceptive and erroneous picture of the process of economic fluctuations. Trade-cycle research to-day can and should do no more than present a catalogue of the causally important factors and their operation, but should leave the question of their interaction completely open.

Neither these conclusions nor the socio-psychological explanation should, however, be taken as the central theme of the book. The rejection of the so-called mechanistic models and their supplementation by psychological theory stems from an underestimate of their flexibility. They can, of course, incorporate almost all the factors mentioned by Professor Jöhr, such as price changes, expectations or the varying reactions of economic agents in different phases of the cycle. They will naturally become more and more complicated, but it is not the principle of model building that is at fault, but the over-simplification of our text-book models against which Professor Jöhr brings to bear his analytical guns. These models are, generally speaking, good teaching devices, in the sense that they provide an understanding of the nature of oscillatory processes, but more often than not give poor approximations to actual empirical cycles. They deliberately select only a few significant variables and relationships. But Tinbergen since the thirties, Klein, Clark and others since the War, have produced much more complex and realistic models which Professor Jöhr excludes from the scope of his survey.

What he has to say about the simple non-econometric models and theories extends over the middle 300 pages of the book. As a critical examination of the corpus of modern Continental and Anglo-Saxon theory it knits together many strands of thought and shows their relevance for a fuller understanding of cyclical processes. Partly because of this, it cannot be easily summarised. But its layout will give the reader some impression of its scope and character. Starting from the model of perfect competition, Professor Jöhr proceeds to relax its stringent conditions in four major moves, by introducing : (*a*) the time factor, (*b*) monopolistic conditions, (*c*) behaviour patterns in conditions of uncertainty, and (*d*) changes in monetary policy. A chapter is devoted to each of these problem groups and prepares the ground for a review of the models *sensu stricto*, showing their limitations and the many factors discussed in other trade-cycle theories which they neglect.

Into this framework the author packs the analyses of a great number of partly familiar, partly unfamiliar, theories. Thus in the chapter on adjustment periods and time lags we find, apart from a discussion of the acceleration principle, a study of Zwiedineck's law of temporal income sequences, of Schmalenbach's theory of fixed cost and the short-period supply curve, and of the heterodox reaction of agricultural producers to price changes. On the other hand, the discussion on time lags that should have been here is shifted partly into the interesting savings–investment analysis and partly into the model discussion. The acceleration principle is closely scrutinised and rejected as a major dynamic agent because it can hardly be effective for fixed capital in the downswing and early revival, and Professor Jöhr argues that it can hardly come into play at the top of the boom. Only if full employment in the consumer's goods industries is accompanied by under-employment in the investment industries will the accelerator really work. This argument is skilfully extended to a critique of the qualified use that Hicks makes of the accelerator.

The chapter on the effect of monopolistic conditions in the commodity and factor markets on investment and employment

and of general and partial price rigidity on the stability of the system follows mainly traditional lines. But Professor Jöhr has much to contribute in the next two chapters on the role of psychological and monetary factors in the cycle. A thorough examination of the theory of expectations leads him to reject the probability approach of reducing uncertainties to certainty equivalents, and he is not well satisfied with Shackle's alternative principle of potential surprise or Niehans' principle of smallest regret. As in his view uncertainty cannot be dissolved by any such calculus, he asserts that entrepreneurs groping in the dark will be inclined to look for signposts to guide them, and are likely to find them in their own business experience. But they will be partly influenced by prevailing moods (*Stimmungen*) which have been unduly neglected in current theory. The effects of anticipations and of valuation and costing methods, that will tend to distort profits and hence investment and output decisions, are treated as special cases of psychological behaviour. The analysis of monetary theory is an interesting and sometimes provocative attempt to bring together, and if possible to reconcile, different trends of theorising which have developed separately in various Continental and Anglo-Saxon countries. All this provides the basis for a presentation of the models of Böhi, Lundberg, Metzler, Kalecki, Hansen, Samuelson and Hicks. With the exception of Hicks, they are treated rather summarily and put aside rather lightly.

It is impossible to do justice in a short review to a work of this kind, whose value lies not so much in any particular result but in the broad synopsis and the painstaking scrutiny of the theorising about trade-cycle problems that has been growing mushroom-like in the last generation.

As a one-man stocktaking survey of contemporary business-cycle problems it stands out as a singular achievement, and must rank among the standard works in the subject, similar perhaps to Böhm-Bawerk in his thought-provoking critique, whatever one may think about the " positive theory."

F. A. Burchardt

Institute of Statistics,
University of Oxford.

A History of Economic Thought. By J. F. Bell. (New York: The Ronald Press, 1953. Pp. v + 696. $6.50.)

It is now forty-five years since *l'Histoire des Doctrines Économiques depuis les Physiocrates jusqu' à Nos Jours*, by Gide and Rist, and forty-two years since Haney's *History of Economic Thought*—" a critical account of the origin and development of the economic theories of the leading thinkers in the leading nations " were published. Economic thought since then has witnessed in all directions a revolutionary change, and advance has been quite phenomenal, notably since the publication of Keynes's *General Theory* eighteen years ago. In consequence, the need of an up-to-date treatise of the history of economic thought has been evident. Professor Bell's book, therefore, is timely. I know of no other text-book of its size which gives so satisfactory and so competent an acquaintance of the whole field. The exposition is forcible. The author shows an unusual facility in doctrinal synthesis, and omits nothing that is essential.

The book is divided into seven parts: Part I—the beginnings of economics; Part II—the beginnings of modern theoretical and applied economics, mercantilism and the physiocrats; Part III—the development of classical economics—Adam Smith, Malthus, Ricardo and their disciples; Part IV—critics and criticisms of classical economics; Part V—the development of marginal utility economics; Part VI—the development of economics in the United States; and Part VII—the main currents of economic thought in the twentieth century—Marshall, Keynes and some post Marshallian developments—English, Swedish and American. The chapters on Adam Smith, Walras and Pareto are of special interest. When one reads the two chapters devoted to Adam Smith one misses no salient point. We are reminded that the England of Adam Smith's time was devoted to agriculture and foreign trade, but as yet had not too much to manufacture. We feel that Adam Smith was prejudiced against manufactures because of his admiration for the physiocrats just as he was prejudiced against money by his dislike of mercantilism. Professor Bell has travelled widely in the United Kingdom and on the Continent of Europe, and his work reflects the results of investigations on the spot. This is evident in the chapters on Adam Smith and on Walras, perhaps the founder of marginal analysis and of what we call to-day the Walrasian technique.

No book covering so wide a field as this can satisfy every reader. Professor Bell would be the last to expect this. One or two constructive criticisms of a general kind may accordingly not be out of place. The influence of specific events on particular generalisations has not been given the stress that is desirable. The Law of Diminishing Returns requires references to Parliamentary inquiries preceding the Corn Law of 1815, since the records contain data and expressions which were formulated by

West in 1815. Contemporary events play an important part in the generalisations of Malthus and Ricardo. Similarly, in our own day the background of Keynesian thought must not be forgotten, especially the early thirties with its high unemployment. It contravened the most fundamental beliefs of Adam Smith, Ricardo and their followers, who believed that, left to itself, the economic system—economic activity in general, savings, employment—will balance at a point of highest well being. Keynes, on the other hand, showed that the condition of the free capitalist market is one of chronic disequilibrium, requiring direction by purposeful minds if the self-balancing perfection of the capitalist order is to be achieved. The Employment Act of Congress 1946 has enshrined this belief, as has the British White Paper on Employment Policy 1946. To those who teach the new economics in universities, Professor Bell's simple chapter on " John Maynard Keynes, the Architect of National Income Policies " is a little unsatisfying, and in a future edition may be given more detailed treatment. There should be, too, greater attention to dynamic process analysis and to business cycles. The writers on these important developments of economic doctrine are well known.

Marshall at the Political Economy Club in London once said, " All short statements are wrong." Every writer of a treatise on the history of economic thought feels the truth of this. Professor Bell says, " even Mill, with his faithful adherence to free trade doctrines and his strong denunciation of protection, would justify protection of new or infant industries " (p. 270). In Book V, Chapter X, of the *Political Economy*, the seventh edition 1871, the last revised by Mill himself, Mill changes " will " in the 1848 edition to " might " in the sentence " A protecting duty, continued for a reasonable time, might sometimes be the least inconvenient mode in which the nation can tax itself in support of such an experiment." But [it is essential that (inserted in the 1871 edition)] " the protection should be confined to cases in which there is good ground of assurance that the industry which it fosters will, after a time, be able to dispense with it; nor should the domestic producers ever be allowed to expect that it will be continued to them beyond the time necessary for a fair trial of what they are capable of accomplishing." These two verbal changes weaken the force of the concession, but in the letters we get further details of a change of mind. Space will not permit my illustrating this from at least half a dozen letters that leap to mind. In a letter of December 7, 1868, instead of a temporary duty he would recommend an annual grant from the public

treasury, a bonus or bounty. Is, again, Professor Bell correct when he says, " even though Marx added little or nothing to the broad development of economic thought he must be regarded as responsible for the highest level of criticism yet reached " (p. 656)? Does he not overlook Marx's high place in economic dynamics, in the theory of economic change? Schumpeter, in the recently published *History of Economic Analysis*, rules out value judgments and ideology as being irrelevant, and praises Marx's dynamical approach as he does that of Walras. In Seymour Harris' words " unlike Keynes, Schumpeter deals generously with Marx and as an economic analyst Marx emerges here as one of the great economists of all time."

In view of the high place given to the Schumpeterian system in American universities a few comments on Professor Bell's analysis of his work must be given. Schumpeter is regarded here in the United States as " one of the three or four leading economists of his generation and one of the great figures of this University," to quote from a Faculty Minute of Harvard dated February 7, 1950. Why in the history of economic thought will Schumpeter never be regarded as the founder of a school like Marshall or Keynes? The answer, I believe, is in Schumpeter's words in a farewell address to his students in Bonn: " I never wish to say anything definitive; if I have a function it is to open doors and not to close them." Schumpeter's first major work is stated to be the *Theorie der Wirtschaftlichen Entwicklung* (Theory of Economic Development), but the first major work is *Das Wesen und Hauptinhalt der Theoretischen Nationalokönomie* (The Nature and Principal Content of Theoretical Economics).

Professor Bell's wide acquaintance with the development of economic thought has resulted in a skilful weaving together of the various economic doctrines into a whole. Some selection, as in the case of other histories of economic doctrine, had to be made, and by abstaining from detailed criticism he has given us what the authors say. We have, in short, a readable and important history of the origin and evolution of the actual doctrines which are recognised and taught in American, British and other universities to-day. He had done, in the expressive American phrase, " a good job."

G. FINDLAY SHIRRAS

University of Florida.

Kritika sovremennoi burzhuaznoi politicheskoi ekonomii Anglii (Critique of Contemporary English Bourgeois Economics). By I. G. BLYUMIN. (Moscow: Academy of Sciences. Pp. 357. 15.10 roubles.)

A SOVIET book on British economics, under the highest academic auspices, is something of an event. In recent years there has been no serious examination of Western economic doctrines, as distinct from journalistic polemics against "Keynesianism." In the less strained atmosphere of post-Stalin Russia, there are grounds for hope that sterile polemics might be replaced by an effort to understand, and so Mr. Blyumin's book, which was sent to the printers in October 1953, may be viewed as an index to the state of mind of Soviet academic circles. It is also of interest to observe the impact of the familiar works of leading British economists on the mind of a Soviet expert.

There seems no doubt that Mr. Blyumin knows his subject, and that he has read the relevant books and periodicals. Unlike so many of his colleagues, he does not simply denounce, but does try to acquaint his readers, however briefly, with the theories of "bourgeois" economists. One finds tolerably clear expositions of the marginal-utility theory, the multiplier, liquidity preference and many other western concepts, and there is a serious historical analysis of this country's balance-of-payments problems. Some of the criticisms are well argued from a Marxist standpoint, notably the vigorous assault on the marginal-utility theory. (It "stands everything upside down, by claiming that the value of commodity is determined by relative scarcity. In reality the relative scarcity of products is determined by their value. The latter, through market prices, influences the magnitude of effective demand, to which the volume of supply adjusts itself," and so on.) In a stimulating historical review he makes an effective attack on Senior, though it is surprising to learn that his works have acquired a new popularity in England in recent years, and he reproaches Marshall, not unjustly, with assuming that the economic system he knew was natural for all time. If only Mr. Blyumin were not so anxious to denounce all "bourgeois" theories as totally false, his book would be of not inconsiderable value.

Mr. Blyumin makes things difficult for himself from the very beginning. "Bourgeois economics has long ago lost all connection with real science"; its purpose is "at all costs to justify capitalist monopolies and their robber methods of maximising profit" (pp. 3–4). Nor does he fail to cite, though without either

quotation marks or acknowledgment, Stalin's somewhat extreme views of the nature of contemporary capitalism; thus on p. 4 we find its essence defined as "ensuring maximum profits by means of exploitation, ruin and pauperisation of the majority of the given country's population, by enslavement and systematic robbery of the peoples of other countries, and finally by war and the militarisation of the economy, in order to ensure maximum profits. This basic economic law underlies all the main aspects and all the main processes of development of contemporary capitalism; it is the key to understanding its laws." Mr. Blyumin also takes most literally Marx's theory about the relative and absolute pauperisation of the working-class, and so we find him arguing that British working-class standards inevitably fall in times of inflation (p. 192) and deflation (p. 233), that increases in labour productivity lead to a fall in real wages (p. 59), and so on. To him it is axiomatic that the majority of the population live below subsistence level and that their standards are constantly declining. It is sad that a serious economist should express these and other crudities in a specialist and expensive work destined for a restricted audience.

He feels himself compelled to attack everything, even these theories which, from his own standpoint, might seem quite reasonable. For example, the traditional analysis of monopoly price expresses not inadequately the desires of the monopolist to make a profit, but this is not enough for our author. He indignantly denies that elasticity of demand has any relevance to price fixing under monopoly conditions; to him this approach is a trick, by which "the advocates of monopoly capitalism (Marshall, Keynes, Hicks, Robinson and others)" pretend that the monopolists are not interested in "increasing prices to the maximum." Mr. Blyumin is doubtless seeking to be true to Stalin's doctrine about "maximum profits," but achieves a nonsensical result in the process, since in his hands the concept "maximum" becomes a meaningless synonym for infinity. No one can get very far in serious analysis on the assumption that all and every theory is pernicious rubbish.

Perhaps the most irritating feature of the book is the constant imputation of dishonest motives, which is as pointless as it is unnecessary. Mr. Blyumin grants subjective honesty only to Adam Smith and Ricardo, but to no "bourgeois" since their time. Attacks on Keynes's motives, allegations of fascist sympathies and desire for war, abound throughout the book, which devotes many pages to him. Living economists all come in for rough treatment. Pigou is presented as a "cannibal"

for apparently wishing the unemployed to die of hunger (pp. 186–7); Joan Robinson " cynically stands for unemployment while pretending to support full employment " (p. 205), and her criticisms of orthodox economics (as those of Keynes himself), are " a clever manœuvre, calculated to disguise (her) own apologetics " (p. 92); more than once Robbins is said " consciously to falsify " (*e.g.*, p. 134), but receives mild treatment compared with Lord Beveridge and Hayek; Austin Robinson " develops with exceptional cynicism a completely false theory," according to which the burdens of rearmament must be borne by the working-class (p. 346); Harrod's proposals for reducing investments had the purpose of " increasing unemployment, which, he declared with enthusiasm, would reduce wages and ensure the transfer of labour . . . " (p. 215). (Harrod may be surprised to learn that the proposals published in *Are these Hardships Really Necessary?* were acted upon by the Labour Government within three months !) All this provocative rudeness cannot contribute to understanding, in any sense of the term. It is all the more deplorable when the author is so obviously capable of serious work on Western economics, a fact which emerges despite the polemical style and the frequent crudities of argument and presentation. Perhaps it is not wholly the author's fault, and it is still impossible to have published in the U.S.S.R. a non-vituperative, scholarly work about the west. If this be the case, it is surely time for someone to think again.

A. NOVE

Glasgow.

Zagadnienia Ekonomii Politycznej. By O. LANGE. (Warsaw: Państwowe Wydawnictwo Naukowe, 1953. Pp. 160. 9.10 złoty.)

WHEN Oskar Lange left the University of Chicago in 1945 to become, via the leadership of the Polish Permanent Delegation to the United Nations, President of the Co-operative Movement, Chairman of the Sejm Budget Commission and Parliamentary Leader of the Polish Workers' Party, it was to be feared that academic economics would be the loser to practical politics. Even though he soon accepted the Rectorship of the Higher School of Planning and Statistics in Warsaw (the post-war successor to the famous S.G.H. Higher Commercial School), he confined himself, in the sphere of scholarly economics, to teaching.

His latest work is to be regarded more as a combination of these two activities, pedagogy and politics, than as the new contribution to economic theory which its title, *Problems of Political Economy*, might imply. The subtitle *In the Light of J. Stalin's " Economic Problems of Socialism in the U.S.S.R."* offers a better indication of the book as an *exposé* and amplification of Stalin's last work intended for students and party workers. The book reprints three articles, published almost simultaneously: " The Economic Laws of Socialism," " The Bases of the Economic Law of Contemporary Capitalism " and " The Disintegration of the Unified World Market and the Creation of Two Parallel Markets in the World Economy."

The first two articles cover in many respects much the same ground, following Stalin in countering the traditional Marxist rejection of any but historico-relative validity for economic laws, with the recognition of the " reflection of objective processes "; and contrasting the imputed laws of increasing welfare through harmonious economic development under socialism with pauperisation under the capitalist maximisation of profits. A certain selection of statistics is quoted, principally from publications of the United Nations Economic Commission for Europe, and while the appeal for proof is essentially to Stalin's work, some echos and the appeal for proof is essentially to Stalin's pre-war writing in some implicit rejections of Professor Lange's pre-war writing in America may be found. His proposition that a " wrong economic policy " tends to have a natural reaction indicative of the error may be a generalisation of his trial-and-error procedure in the determination of accounting prices (*On the Economic Theory of Socialism*, p. 89); his suggestion in the first article that under capitalism " the ruling class often opposes the recognition and application of physical laws " (p. 17) links with his pre-war statement that " the maintenance of the value of invested capital is not compatible with cost-reducing innovations " (*op. cit.*, p. 113). Yet when he expands this in the second article to the outright claim that contemporary " monopoly capitalism " is uniformly opposed to technical progress (p. 88) he leaves aside the much more nuanced analysis in Chapter XII of his *Price Flexibility and Employment*, where he showed that under monopolistic competition, innovations, other than factor-saving, are output-increasing, although under oligopoly only innovations that considerably reduce marginal cost can be output-increasing.

The third article describes the expansion of world trade—more rapid than that of world production—before the First World War, the stagnation caused by the Depression and the Western European dollar problem after the Second World War. The

causes of the latter he finds mainly in rigid United States protectionism, the shrinkage of Western Europe's invisible balances and, as befits a leading organiser of the 1952 Moscow Economic Conference, the decline in East–West trade. Some of the supporting statistical comparisons could have been improved by greater precision—for example, the Polish industrial production index (p. 139) compares post-war with pre-war territory (viz., excluding Silesia), and all the Eastern European indices calculated on a gross value basis are compared, without qualification, with Western European value added indices.

Limited in scope as they are, these articles cannot be considered as assuming a major place in Professor Lange's work, and students of socialist economics await with interest the larger and more general study upon which he is believed to be now engaged.

M. C. KASER

Geneva.

Income Redistribution and Social Policy, a set of studies. Edited by A. T. PEACOCK. (London: Jonathan Cape, 1954. Pp. 296. 25*s*.)

THIS series of studies is mainly concerned with analysing the extent of income redistribution through Government action in Denmark, France, the United Kingdom, the United States and in underdeveloped areas. There are also two papers dealing with theoretical questions connected with income redistribution. Like all such "collections," this set has both its advantages and its defects. By bringing together studies of conditions in various countries, made by specialists who have full access to official statistics, it fulfills a task which would have been beyond the ability of any individual author. On the other hand, difficulties arise in ensuring that the various studies do not overlap unnecessarily.

Whilst one appreciates the difficulties in editing a book of this kind, one can hardly be enthusiastic about the way the editorial task has been performed. There is not, as one would have wished, an introductory paper stating the general nature, implications and effects of income redistribution which all the authors could have "taken as read" in their individual studies. Instead, each author has been left to make such general points as he wishes. This has led to some repetition and, in any case, makes for rather tiresome reading. For example, it is a little trying, for a reader who has progressed as far as p. 268, to be informed that "Progressive taxation has the effect of redistributing income vertically"—and more in the same vein. Similarly, Mr. Conrad's paper on the United States begins with a lengthy general discussion of the meaning and effects of income redistribution.

In Mr. Lim's paper on underdeveloped areas the first half is devoted to a discussion of conditions in the United Kingdom and the United States, despite the fact that nearly half the book is devoted to these countries. This part of Mr. Lim's paper might surely have been omitted; the fact that, in the introduction, the editor almost apologises for its inclusion, serves only to make matters worse; one can appreciate his problems, but editorial difficulties exist only to be overcome.

The two theoretical papers are by Mr. H. G. Johnson and Mr. D. Berry. The former discusses how interdependent consumer preferences can influence the effects of income redistribution on the general level of income. This paper enlarges on Mr. Johnson's earlier work in this field, and seems to represent the ideal both in length and content. Mr. Berry's paper considers the complex problem of how far welfare economics can help in choosing between various possible methods of income redistribution. Much of the argument is in terms of the recent "direct versus indirect tax" controversy, and is interesting so far as it goes.

The contributions relating to individual countries should prove most valuable. The Danish study, by Messrs. Lemberg, Ussing and Zeuthen, gives a useful summary of the political background to income redistribution in Denmark, as well as of the main features of that redistribution itself. The French paper, by Messrs. Rottier and Albert, shows, in particular, how current social problems in France have both caused and been caused by the important role played by childrens' allowances of one kind and another. Indeed, the paper might well have concentrated wholly on this topic, in the same kind of way as Messrs. Browning and Peacock have concentrated on particular aspects of British income redistribution policy—particularly the difficulties which the National Insurance Scheme, as at present constituted, faces in a community where the proportion of elderly people is growing. These latter authors are to be commended for coming rapidly to the point and remaining there. In contrast, Mr. A. H. Conrad's paper is far too long and begins most unpromisingly with a show of unnecessary formulæ and singularly unpleasing jargon. However, this paper improves as it progresses, and the comparisons of

pre- and post-war income distribution in the United States are illuminating.

Mr. T. B. Lim's discussion of the position in underdeveloped areas is short, mainly because there is so little to be said. It is good, however, for Western Europeans to be reminded of this aspect of the problem of backward areas—including those in the British Commonwealth. Mr. Lim rightly raises the crucial question faced by such countries, namely, " Does the prior claim of economic development mean that schemes of social service expansion will have to be deferred? " On the other hand, he summarily rejects the export tax as a useful means of raising revenue in backward countries. Admittedly such a tax has its drawbacks, but since some economists favour its use, one could wish that these failings had been considered more fully.

D. C. HAGUE

University College,
London.

Welfare and Taxation. By COLIN CLARK. (Oxford: Catholic Social Guild, 1954. Pp. 80. 3*s.* 6*d.*)

IN a small pamphlet containing only sixty-two pages of text Mr. Colin Clark puts forward suggestions for the fundamental reorganisation of the social services and the taxation system of this country, on the following lines:

Unemployment insurance is to be handed over to the trade unions to administer, although employers' contributions would still continue to be paid. The National Health Service would be replaced (in time) by insurance through voluntary societies against the more serious illnesses or accidents; ordinary illnesses and medicines being paid for direct by the family. The whole of school education should be handed over to the Churches and Religious Orders, which would be subsidised to a sufficient extent by the State. Housing subsidies and rent control should be abolished, and all council houses sold at a fair present-day market value—with a resultant decline in municipal or national debt which might save £200 million in interest. Old-age pensions should be administered through friendly societies or trade unions, the State adding £11,000 million to the National Debt to finance the pensions of those living and now entitled to pensions whose past contributions are actuarially insufficient to meet the claims.

On the revenue side road users should bear the whole cost of the roads. Coal-mines should remain the property of the State,

but each pit (or group of pits worked as a unit) should be leased to the miners who work it, the rents being scaled so as to bring in about £250 million to the Exchequer. On this proposal Mr. Clark comments: " If it is necessary to collect public revenue on any commodity the best one to choose is coal, for reasons which will be clear to anyone who has carried his study of economic theory beyond the elementary stage." All taxes on commodities would be abolished, with the exception of those on motor vehicles, petrol and coal. Income tax on lower incomes would amount to an average of 5% for wage-earners and 9% for salary earners, but would be assessed on family income per person, so that larger families would be completely exempt. In the case of the higher income groups and property owners the tax-payer would be entitled to deduct from his taxable income the amount devoted to the purchase of assets, but would be required to add to it any sums obtained from the sale of assets and any net increase in liability. Thus all savings would be exempt, while capital gains would be taxed if they were spent, but not if they were invested. Taxes to yield about £150 million a year would be levied on the ownership of land, both rural and urban. Death duties, which are " inequitable and economically harmful," would be abolished and replaced by an annual tax on capital. Local rates should disappear and be replaced partly by revenue from land-value taxation and partly by local-government income taxation. Finally, we are promised a stable price level if we will adopt the Graham commodity-based currency system.

Mr. Colin Clark is primarily a statistician, and the professional economist will find a good deal of interest to him in the statistical analysis of the allocation of taxation between different income groups, which is contained in a fairly lengthy appendix. Out of 51 million people in the United Kingdom, he calculates that there are 36 million in the manual-worker class with incomes up to £600 p.a. These 36 million have an annual income per person (man, woman and child) of £196 p.a., of which one-quarter, or £49 per head is paid out in taxation. Further, on assumptions that seem reasonable, he estimates that these same families, who contribute in total £1,780 million annually in taxation, receive back £1,600 million in the form of social services, including food and housing subsidies but not war pensions. Their net contribution as an income group to the general expenses of running the State, including re-armament, is thus of the order of £180 million p.a.

Mr. Colin Clark's pamphlet has given rise to many unfavour-

able reviews in the popular Press, some merely sarcastic and others abusive. But surely every man is entitled (if he has the courage) to produce his own version of Utopia, without necessarily being open to the charge that he has wilfully ignored all political and other realities—with the corollary that everything he has said can be dismissed out of hand as the product of a disordered imagination. It must, however, be admitted that the manner in which Mr. Clark presents his case is not calculated to disarm those who are antipathetic to his views. In conclusion, it may be observed that in so far as Mr. Colin Clark does regard his proposals as having a possible practical bearing, a number of them might be expected to find a more favourable response in Eire, where the Hierarchy is a potent political force, than in Great Britain or Northern Ireland.

C. W. GUILLEBAUD

St. John's College,
Cambridge.

The Price of Fuel. By I. M. D. LITTLE. (London: Oxford University Press, 1953. Pp. ix + 197. 12*s.* 6*d.*)

THE symptoms of maladjustment in the British fuel and power industries are perhaps not as obvious as they were a few years ago, but the underlying situation continues to cause serious concern. Their price policies in particular have been the target of considerable criticism, much of which has remained unanswered. The Ridley Report (Cmd. 8647), published in the autumn of 1952, contained some authoritative recommendations which could go far to put fuel policy on a more rational basis, but they have mostly been ignored by the responsible boards in the nationalised industries. Rightly believing that the matter should not be allowed to rest, Mr. Little has now given a restatement of the case for using prices as incentives.

His proposals, for which he claims no originality, agree largely with those of the Ridley Committee, especially with those of the group of four members which included Professor Arthur Lewis. The principal suggestions are an increase in the domestic price of coal by what amounts to an excise tax of £1 per ton, subsidisation of more efficient coal-burning appliances, introduction of time-of-day charging for large electricity consumers and a reinforcement of the competitive position of gas. These proposals are so well known and evidently sound, that they need no more than an endorsement here.

Mr. Little's argument calls for more discussion. It is based to a large extent on the desirability of making more coal available for exports by reducing wasteful usage at home. For this purpose Mr. Little tries to show that foreign consumption of British coal could be expanded very considerably, so that even the National Coal Board's estimate of 25–35 million tons in the early 1960s would be unduly conservative. Such forecasts inevitably involve a number of hazardous assumptions, and I for one have the impression that the author's prognosis is on the optimistic side. It does not seem to make sufficient allowance for increased oil production in the Middle East, especially if—as will presumably happen some day—Iranian oil starts to flow again. It is also conceivable and in line with some currents in United States trade policies that American surplus coal, carried in American surplus tonnage, will be dumped on the European market if it can no longer be sold at cost. Mr. Little seems to assume, on the contrary, that British coal when available will automatically replace American coal. Furthermore, the coal-steel pool might have some success in making European coal production more efficient, or it might undertake other measures which would further diminish the chances of large British coal exports.

These possibilities do not weaken Mr. Little's conclusions; even if there were no foreign demand at all, it would be desirable to produce and use coal more economically. They do, however, weaken his argument, for although he ridicules a " coal theory of value " he comes remarkably close to expounding one himself.

In any case the outlook for the future is so uncertain that the policy adopted should possess ample flexibility. Mr. Little's proposals do not meet this requirement; since he does not consider the price mechanism a good rationing device for sudden and temporary changes in supply or demand, he wants the price of coal (including the tax) to stay substantially constant over time. It is hard to see why, since Mr. Little wants to increase the present price of coal in order to reflect its current scarcity, he opposes changing the price when the scarcity changes. If long-term supply and demand could really be predicted with confidence a fixed price would have some merit, but this condition is unfortunately not satisfied.

It will be seen that Mr. Little's faith in prices as instruments of economic policy is rather limited. His attitude towards the marginal-cost principle is also ambivalent. At the beginning of his book he advances some interesting reasons why the application of this principle is less debatable in the fuel and power sector than

it is elsewhere; nevertheless, the author of *A Critique of Welfare Economics* still seems to have his tongue in his cheek. This is no doubt why he prefers to rely so largely on *ad hoc* arguments of the kind discussed above. Inasmuch as general principles should always be capable of exemplification in specific situations this approach might be perfectly justified, but in fact Mr. Little restricts himself too much.

This is a disappointing book, all the more so because in a brief final chapter the author shows himself well aware of the basic problem of a national fuel policy for Britain and yet says hardly anything about it. This problem is the direction of the nationalised industries by the Government in a way which compels those in charge to follow the public interest (rather than their sectional ambitions) without, however, interfering in the day-to-day product of business. The unimpressive results of nationalisation so far are no doubt largely due to the absence of a well-considered policy in this respect. If Mr. Little had gone into these matters instead of adducing vulnerable reasons for sound but hackneyed proposals, his talents would have been more rewardingly applied.

H. S. HOUTHAKKER

Stanford University.

The Economic Impact on Underdeveloped Societies. Essays on International Investment and Social Change. By S. HERBERT FRANKEL. (Oxford: Basil Blackwell, 1953. Pp. vii + 179. 15*s*.)

IN this collection of nine essays on economic development, broadly interpreted to include social, cultural, and technical change, Professor Frankel deals with wide, diverse and complex issues. His general thesis is the importance of spontaneous organic growth as a prime mover and condition of economic development. The following are the principal strands of thought in this general theme. The growth of income and wealth depends largely on the establishment of fruitful inter-relationships between individuals and groups. Mutual interdependence and co-operation enlarge the boundaries of economic activity in space (through specialisation and exchange) and in time (through contracts extending through time), thereby emancipating men to some extent from the bonds of space and time. The successful establishment of such relationships requires qualities and attitudes which are of slow growth, notably trust and integ-

rity in commercial relationships; readiness to honour contracts; appreciation and recognition of one's dependence on the efforts of others. These qualities, together with the ability to undergo gradual but continuous adaptation to changing conditions and opportunities, are the principal conditions of economic development, a process which cannot be greatly influenced directly by governmental decisions; and there cannot be any clear-cut, much less any final, solutions to the problems of economic development. Further, significant aspects of this process are not susceptible to quantitative measurement or expression.

Professor Frankel is exceptionally qualified to consider these issues. He has a reflective and philosophical turn of mind. He has read both widely and deeply, and his knowledge ranges over several relevant cognate subjects. He has lived in a rapidly growing economy which over the last few decades has exhibited some of the most characteristic phenomena of rapid economic development together with the tensions of a multi-racial society. His treatment of these issues is on a much deeper level than most contemporary discussion on this subject. Some fundamental conditions and aspects of economic development are discussed with depth and understanding. There are also thoughtful and suggestive discussions and reflections on various important topics: the process of debt-creation; the interaction of social and technical change; the use of national-income figures as indices of economic welfare; the particular features and dangers in Africa of social uprooting and rapid urbanisation. All who wish to consider development problems seriously will want to read these essays.

These qualities need to be emphasised, since they may fail to be recognised partly for reasons external to the book, and partly because of some of its defects. The contemporary intellectual climate and institutional arrangements are unfavourable to Professor Frankel's ideas. He has no specific proposals for policy, least of all for the establishment of new organisations and agencies to promote development; and he does not regard such organisations as a principal instrument of economic progress. Nor does he consider only such constructions, institutions, and arrangements as examples of development which can be attributed to the activities of identifiable individuals and governments. All this runs counter not only to the current trend of opinion, but also offends powerful intellectual, administrative and political vested interests.

But there are defects in the book which may obscure its

merits. The style is involved. To some extent this reflects the difficult concepts which Professor Frankel handles, and perhaps also his desire to establish his argument in a hostile environment by different formulations of particular propositions. But this does not explain completely the accumulation of subordinate clauses, or the lengthy enumerations of closely related characteristics of phenomena, which at times make for tedium, and which obscure or retard the argument.

The seriousness and depth at which Professor Frankel considers economic development and social change throws into relief certain weaknesses of the book. Questions irrelevant to the familiar superficial treatment step into the foreground and insist on being asked at his level of discussion; and yet at important stages in the argument he does not ask what would seem to be important and relevant questions.

Professor Frankel stresses the essential complementarity of the income-creating activities of individuals and groups. He regards as both reprehensible and also as comparatively unimportant (especially on a long view) attempts of individuals and groups to snatch advantages at the expense of others. Yet economic history, as well as the contemporary scene, offer ample evidence of economic struggle and hostility between individuals and groups. This may be because the participants overlook the complementary relationship between themselves and others and exaggerate the competitive relationship; or because they are more interested in their relative position and consider (possibly subconsciously) a relative improvement in their position as more important than changes in the absolute level of their incomes (thus being ordinalists rather than cardinalists); or they may be more interested in the acquisition of power, or in strengthening the internal cohesion of the group than in the growth of wealth. If any one of these views and attitudes are widely held among the more active and influential members of a group, the presence of economic conflict and of attempts to gain advantage at the expense of others become both important and intelligible. All this is particularly significant when there are several groups sufficiently powerful to disintegrate the society. Professor Frankel's exclusive emphasis on the complementarity of the economic relations of individuals and groups leaves us with an unresolved paradox in the presence, prevalence and pervasiveness of economic conflict.

Professor Frankel doubts the influence on economic development of governmental measures, or indeed of political events; and on this too he says much that is both thoughtful and thought provoking. But in the process he conveys the impression that economic growth is largely unaffected by political events. Now quite clearly they can have adverse, or even catastrophic, results. Well-known examples include the Athenians' Sicilian Expedition; the failure of the Roman Empire to overcome some of its constitutional and administrative problems; the expulsion of the Moors and the Huguenots; the Thirty Years War; and so on down to our own day. Conversely, the campaigns of Alexander the Great, or some of the officially sponsored voyages of discovery of the fifteenth and sixteenth centuries, very probably promoted economic growth. Indeed, the political system, political events or particular governmental decisions (including those affecting the institutional background of economic development), may well be among the factors influencing peoples' attitudes and aptitudes, including their ability and willingness to enter into economic relationships conducive to growth.

To-day there may be scope in various directions for governmental action in promoting economic growth, even without drastic or violently controversial methods. Thus valuable contributions may be made by fiscal and financial measures cushioning the impact of rapid and discontinuous changes on populations at a comparatively early stage in their economic development, and thereby fostering a sense of continuity which may be an important factor in development. Again, certain institutional changes beneficial to economic growth (even beyond the establishment of law and order), particularly in the sphere of tribal customs or in land usage, may perhaps be effected only by Government action. Yet again, certain types of capital investment may have to devolve on the Government when the benefits are indiscriminate and possibly long delayed. In this connection there is an important special case of the desirability of Government investment which may arise in activities in which heavy initial costs have to be met before productive operations can be started, but in which small-scale units are the most efficient form of organisation for the actual production. There is nothing in Professor Frankel's analysis to contradict such suggestions; and he may intend only to stress (rightly) the worthlessness of vague general notions and the need for careful specific inquiry before embarking on such measures. But the emphasis is such that one is left with the impression that political events or governmental measures have rarely, if ever, exercised much influence on development, and cannot make any significant contribution to it.

Professor Frankel refers (p. 9) to the decay of Greece, Rome, Spain and Portugal with the decline of their " structural inventiveness." But he does not discuss the possible political, economic, biological or intellectual reasons. The inventions and discoveries of the Greeks brought them apparently to the threshold of large-scale technical developments by about the third century B.C.; and the stagnation which set in is perhaps mysterious. On a much larger scale the same applies to China: the failure, unwillingness or inability of this gifted and industrious race to break through centuries of stagnation and abject poverty in spite of a civilisation extending back over 4,000 years which has produced art of great beauty and subtlety. Even a whispered answer to these vast questions cannot be attempted here, even if (*pace* Professor Toynbee) there is one. But references to a failure of structural inventiveness not only do not provide the answer, but may also make us forget that we have not got one.

Somewhat similar impressions may be left on the reader by Professor Frankel's discussion (Essay III) on the comparability of national income figures of different communities. The reasoning is acute and important; and it drives home the lesson that very important features of economic life and aspects of economic development cannot be readily expressed in quantitative terms. But in the process the impression is conveyed that national-incomes aggregates can serve little or no purpose. Yet this clearly cannot be Professor Frankel's view, as he has done pioneer work on national income calculations for South Africa.

Professor Frankel's choice of examples is not always fortunate, even where the argument is both important and readily acceptable, and this is likely to prejudice the reader against it. He suggests rightly that a society is doomed which has lost the ability of adaptation. He thinks France on the eve of the Revolution an example of such a " frozen society "; and quotes at length from *A Tale of Two Cities*, which shows a stagnant society divided into a powerful, oppressive and wealthy aristocracy and a poverty-stricken, sullen proletariat. It was in fact the rapid growth in wealth and power of the middle class which so largely exposed the weakness and the lack of function and power of the aristocracy and the Court circle, and thereby precipitated the essentially bourgeois French Revolution. Dickens is hardly a reliable social historian of eighteenth-century France. Again, in his criticism of the groundnut scheme Professor Frankel weakens his argument when he adduces the scarcity of labour to illustrate the mistakes of excessive mechanisation. The scheme was indeed

largely misconceived; but other things being equal, scarcity of labour is an argument in favour of mechanisation.

The final essay in the volume, on civilisation in Africa, contains some of the best and most suggestive reflections in the book; and also some of the least fortunate illustrations, as well as examples of Professor Frankel's reluctance to face the implications of economic conflict. After an instructive and penetrating discussion of some aspects of growth and civilisation in Africa, Professor Frankel hints briefly at racial tension, and (in a lecture delivered in Johannesburg) quotes an American sociologist that the best way to ease it is " to get people to work together at a common task; the task takes over and new illumination lightens up the scene." But is not the crux of the matter the denial by some people that the task is common?

P. T. BAUER

Gonville and Caius College,
Cambridge.

The Economic Organisation of Agriculture. By T. W. SCHULTZ. (New York: McGraw-Hill, 1953. Pp. xx + 374. 44*s.*)

PROFESSOR SCHULTZ has chosen a somewhat misleading title for his book, which, in spite of the name, contains little information on the current structure of farming either in the United States or elsewhere. In the first part he discusses the problems which may arise in agriculture when it is called upon to adjust either to its own technical developments or to changes occurring elsewhere in the economy. Here he makes a number of valuable and illuminating comments without developing them into a coherent analysis. He points out that in many countries changes in population are still a dependent variable upon agriculture, though the interactions of food supply and population described by Malthus were largely ignored in much of the later economic theory. Oddly enough, he then writes (p. 160), " the conditions on which this classical conception of dynamics rests are no longer generally applicable, but as a special case they continue to apply to much, perhaps even to most, of the world." In this state there is a food problem, and development requires technical improvements in farming or (though Professor Schultz does not mention this) an expanding foreign trade by which food can be procured. In the opposite conditions, such as those ruling in the United States, food supply has outrun population, whose growth is limited by other factors; here there is a farm problem in the shape of rural com-

munities whose standards of life are markedly below the normal for the society as a whole. Professor Schultz shrewdly comments that economic development usually increases inequalities of wealth by raising the maximum which is attainable by selected groups with each country. The " marginal farms " do not yield less income than before, but the standard of living obtained by these farm families remains stationary, while other groups forge ahead. Such inequalities are also apt to create cultural differences which impede human migration from one area and from one trade to others and which intensify the original differences.

The chapter on the declining importance of agricultural land in the United States and the United Kingdom substantially reproduces an article published in the ECONOMIC JOURNAL in December 1951. Here Professor Schultz's analysis seems at his weakest. To compare from 1870 onwards the relative importance of agricultural land in the British economy by estimates of the net rents ignores the simple fact that the British food supply was increasingly drawn from the land of other countries; it ignores the part paid by legislation from 1939 onwards in keeping down agricultural rents. Nor is it anywhere explained how the net rent has been calculated for the United States. The second part of this volume summarises the concepts already developed in Professor Schultz's earlier book, *Agriculture in an Unstable Economy*. The third part is a rather diffuse discussion on the technique of inducing appropriate changes in farming to secure less inequality in agricultural incomes and greater stability over time. These last two parts of the trinity seem unnecessary, in view of what Professor Schultz has already published, but the first part is an interesting, if at times superficial, discussion of the problems likely to arise in agriculture in a developing economy.

EDITH H. WHETHAM

School of Agriculture,
Cambridge.

The Role of Mergers in the Growth of Large Firms. By J. F. WESTON. (Berkeley, California: University of California Press (London: Cambridge University Press), 1953. Pp. vii + 159. 26*s*.)

LITTLE is known about the role of mergers in the growth of firms and their effect on the concentration of market power. For this reason Mr. Weston's book is of some interest, particularly to the specialist. It is, however, not a very satisfactory book;

although a considerable amount of data has been used, the book does not inspire confidence in the judgment of the author. This is partly the result of the way in which the major problems have been approached and partly the result of theoretical weaknesses. A multitude of points are raised, but neither their importance nor their relationships are fully explored.

The first part of the book contains the original work and starts with a study of the effect of mergers on the absolute size of firms. Mr. Weston finds that in the United States " external " growth, by means of mergers, has been very much less important than " internal " growth. For example, " Approximately one fourth of the growth of the 74 firms studied was directly accounted for by mergers " and " Acquisition accounted for less than 25% of the growth of half the firms." The conclusion is that " The direct effect of mergers on the absolute size of large firms appears to have been small." At first sight this seems clear cut, but as soon as one looks at the matter more closely some of the difficulties and disadvantages of Mr. Weston's approach become apparent. For example, the first years for which data about the 74 firms was available range from 1886 to 1945, and although the value of assets is the basis of the measurement of size, no allowance is made for the fact that prices have almost trebled since 1900. Further, the rate of growth of the individual firms is not related to the rate of growth of the industry until the author discusses concentration later in the book. Finally, the problem of the relationship between the merger and the subsequent internal growth of the merged firms is raised but not fully examined. This is a problem which should not be ignored, for unless the merger and the subsequent internal growth are largely independent, Mr. Weston's measures are of little importance.

The basic difficulty lies in the fact that the industries studied are so very different that discussion of the sample as a whole can tell one very little without detailed knowledge of the development and structure of the firms and industries. Using this sort of knowledge, it might well have been possible to break down the statistics in such a way that the functional relationships could be demonstrated. The author perhaps feels the limitations of his methods when on p. 21 he points out that a certain industry shows a high degree of external expansion " because its merger movement took place in relatively recent years, leaving correspondingly few years for subsequent internal growth by the firm resulting from the merger." One cannot help feeling that a high proportion of the cases studied may be " special " in the same sort of way.

Chapters 3 and 4 deal with the effect of mergers on industrial concentration, and the discussion of the differences between the three major merger movements (1898–1903, that of the 1920s and the recent merger movement of the 1940s) is the best part of the book. Nevertheless, the analysis is still weak. It is implied that when mergers do not change the degree of concentration they are relatively unimportant. This may be quite untrue in an expanding and changing economy. First, mergers might be preventing a reduction in concentration which would have come about in their absence. Second, they may increase concentration in particular branches of an industry. Third, the development of large diversified firms through mergers gives great market power to those firms regardless of the degree of concentration. Mr. Weston states on p. 103 that: "Mergers during the last two decades have not had appreciable effects on industrial concentration." The Federal Trade Commission, however, in the Report on Mergers, (1948) showed that mergers were increasing the size of large rather than small firms, and that in some industries, notably food processing, canning, textiles and parts of the steel industry, mergers were leading to concentrations of market power. The two conclusions are not quite contradictory, but that of the F.T.C. is useful, whereas Mr. Weston's is almost misleading.

The second part of the book contains a discussion of the economic theory of mergers and the implications of this for public policy. During the discussion of the theory little attempt is made to weight the main factors involved or to relate them to specific industrial structures. As these are the major theoretical problems it is not surprising that the conclusion is simply that mergers may be either good or bad. This conclusion, combined with the earlier conclusion that the recent merger movements have not affected industrial concentration substantially, leads to the recommendation that policy be pursued cautiously and that more experience must be gained.

These are disappointingly slight conclusions for a book which contains much information. Perhaps if the data were used in combination with a study of the structure and history of the individual firms and industries to which it applies, more useful results could be obtained. As it is, Mr. Weston's book is primarily of interest to the reader who has a fairly detailed knowledge of the structure of industry in the United States.

P. LESLEY COOK

Cambridge.

The Volume of Corporate Bond Financing since 1900. By W. B. HICKMAN. National Bureau of Economic Research, Financial Research Program, Studies in Corporate Bond Financing, No. I. (Princeton, New Jersey: Princeton University Press, 1953 (London: Geoffrey Cumberlege, 1954). Pp. xi + 429. 60*s*.)

THIS work is the outcome of a research project initiated by the National Bureau in 1946, with "a twofold purpose: first, to provide basic statistical series on corporate bond financing . . . and, second, to analyse and interpret the behaviour of these series for what light they may throw on the workings of the economy."

The first of these purposes has been achieved to perfection, and all the reviewer need do is to sketch briefly the nature of the new series here made available. Apart from one chapter on cash flows (Chapter 6), all the new series relate to "offerings, extinguishments, and outstandings" of "domestic corporate bonds," measured in all cases in terms of par amounts, that is at maturity value. The bonds thus defined fall into three groups: railroad, public utility and industrial bonds. The author has excluded bonds issued by real estate and financial concerns, and (where possible) bonds held by governmental agencies, by affiliated corporations or by foreigners. Some 28,000 separate issues have been tabulated. Most of the series are annual and run for the years 1900–43, but some are monthly and a few are continued to 1951.

Most of the "flow" series (offerings and extinguishments) are presented on both gross and on several net bases. For, as the author points out (p. 91), a "stock-flow analysis" may proceed on various degrees of "netness," and if the flow statistics can be arranged so as to be mutually consistent, they will always generate the same estimates of the stock. Clearly, for example, the most net of all Mr. Hickman's flows, "offerings-minus-extinguishments," will generate the same estimates of "outstandings" as his gross series of offerings and extinguishments. Similar consistency is claimed when offerings and extinguishments are each made "net of bond refundings" (bonds offered to retire other bonds), though I myself would expect complete consistency here only if the bonds were always exchanged at par. But for some purposes it is useful to abandon consistency and deduct additional items from offerings which cannot legitimately be deducted from extinguishments: "To obtain a rough indication

of the volume of capital formation financed through the bond market, we have netted out of total offerings not only bond refundings but also . . . bonds offered to retire securities other than bonds, [and to finance] security acquisitions " (p. 108).

In Chapter 6 we learn that over the entire period 1900–43 gross cash proceeds from bond offerings were $60·2 billion, and cash payments at extinguishment $40·0, a difference of $20·2 billion. " Over the same period there was a $16·8 billion increment in the par amount of funded debt outstanding." Thus the cash flow exceeded by $3·4 billion the change in the amount of debt outstanding. This discrepancy is attributed to defaults, the conversion of bonded debt into shares (p. 216), to non-cash transactions and to non-par repayments (p. 245).

The second purpose of the book, to interpret and analyse the figures, is less completely achieved, as is instanced by the following examples. First, the effect of changes in the price level receives insufficient attention : there may not be much point in deflating total bonds outstanding by a price index (p. 8), but there would be some point in bringing in price changes to explain changes in the average size of issue (p. 7). Second, it seems misleading to refer to " the stabilizing role of the bond market during business cycles " (p. 19) when all that is meant is that when a boom is financed by a rise in the flow of money from the share market, there is commonly some decline in the flow of money sought for the bond market. Third, the preliminary discussion about the effect of changes in interest rates on bond financing will strike many readers as being rather naïve. Moreover, later passages on credit control and interest rate policy (pp. 92 and 123) are muddled : the monetary authorities are invited to consider confining their attention to influencing the *new-money* component of total bond offerings, not for the obvious reason that it is only this component which contributes new finance for real investment, but because this component is highly correlated with " net changes in outstandings," as though the total volume of bonds outstanding is the thing which the authorities mainly seek to control. Fourth, Mr. Hickman occasionally supports his arguments with dubious correlation coefficients obtained by comparing the growth through time of a specified section of a population with that of the population itself, as when in Chapter 3 he correlates cash extinguishments with total extinguishments (despite a " Technical Statistical Note " on precisely this problem at the end of the preceding chapter). Moreover, he seems unaware of the special difficulties involved in correlating economic time series, which surely must

deter us from taking at face value the correlation coefficients on p. 126. Finally, the use made in Chapter 4 of the National Bureau method for analysing business cycles suggests a rather mechanical application of a method which is not particularly helpful in interpreting the time series which Mr. Hickman is handling.

I hope, however, that my catalogue of alleged defects in interpretation and analysis will not be thought to detract from the solid worth of a volume which must in fairness be judged mainly as a source of new statistical information, in which respect it is first class.

BRIAN TEW

University of Nottingham.

Labour Productivity of the Cotton Textile Industry in Five Latin-American Countries. (New York : United Nations Department of Economic Affairs, 1951. Pp. x + 293. $3.)

THIS is an outstandingly good report which contains a great deal of original material, both on methods of investigating productivity in the textile industry and on the level of labour productivity in Latin America. The investigation was carried out by the United Nations Economic Commission for Latin America.

The cotton textile industry of five countries, Brazil, Chile, Ecuador, Mexico and Peru, was investigated, comprising a total of 786 mills in which there were 4·6 million spindles and 147,000 looms. These mills constituted approximately 85% of Latin American capacity, Argentina and Columbia being the most important countries not included in the investigation. One interesting feature of the Latin-American cotton textile industry was found to be the integration of spinning and weaving processes, except in the very small units; another feature found was the overwhelming proportion (up to 90%) of old equipment, most of which must have been installed at the beginning of the century. Only in Chile and in Columbia was the equipment largely modern, having been largely installed since 1938. In all these countries production is almost exclusively limited to articles for domestic consumption, and for popular types of fabrics they meet the home demand.

The study was based entirely on labour productivity, because it was believed that this is the best indicator of internal operating conditions in the mills. There were also the practical consideration of easy measurement and the universal character of

the concept of labour productivity. Labour productivity was measured in terms of man-hours required to produce 100 kg. of each selected product.

The inquiry was carried out by the Commission's staff, assisted by technicians in the countries visited and by a firm of American consulting engineers. The methods employed recall the technique applied by the Platt Committee in their *Report of the Cotton Textile Mission to the United States of America, March–April, 1944*, in that synthethized standard productivities were developed as a norm of comparison. A study of each country was made by visiting a number of mills which differed in size, degree of modernity, characteristics of production and geographical location. These mills together were supposed to, and probably did, provide a representative sample. Altogether over 100 mills were visited in the five countries. The sample was the smallest in Brazil, where inquiries were confined to two of the main textile-producing regions. The actual performances as measured in these sample mills were then compared with the hypothetical performances of appropriate standard mills. In order to allow for variation in size, modernity of equipment, count of yarn and type of cloth, performance data for 144 hypothetical standard mills were built up, each of which was assumed to be operating with maximum efficiency. Over half the report is taken up by a description of the methods of measurement showing the way in which these standard performances were built up. One is left to infer that these standards were based on American practice. For this reason, however, the actual results of the inquiry cannot be easily related to the performance of any particular country.

Following up the measurement of productivity levels, the study analyses in great detail, on the basis of a rather smaller sample, the factors leading to differences from standard productivity. Three main factors are distinguished with many subdivisions: the type of equipment, the size of the mill and the manner in which a mill of a certain type and size is operated. Many ingenious methods are used to determine the quantitative importance of these factors, and among others a method is developed for estimating the optimum size of the mill. The result of the analysis is worked out, both in general terms and in respect of each of the five countries. The inquiry found, for example, that in the old mills five times as much labour is used as could be expected under the best conditions; in modern mills about 80% more. It also found that in the old mills " the equipment factor " (which also includes for this purpose the effect of size) and the " administration (*i.e.*,

organisation) factor " are of about equal importance in explaining this inefficiency. In the case of the modern mills the size factor is of minor importance, and most of the inefficiency can be explained by the " administration factor."

The report concludes with a short chapter on practical recommendations which are also quite realistic and which take into account the fact that the backwardness of the Latin American textile industry is intimately linked up with the general low economic level in this part of the world.

L. ROSTAS

University of Cambridge.

Living in Towns: Selected Research Papers in Urban Sociology. By LEO KUPER and OTHERS. Foreword by Professor P. Sargant Florence and Professor C. Madge. (London: Cresset Press, 1953. Pp. xi + 370. 21*s*.)

THE common theme of these papers is the interaction of the physical and the social organisation of the town. Five types of environment are examined: a new housing estate in Coventry; an ancient market town undergoing " dormitorisation "; blocks of flats in a London borough; an admixture of houses built between the wars in a suburb of Worcester; and a Black Country town. With the aim of giving guidance to town planners and architects, the investigations probe various known or suspected weaknesses of town life, and can thus be described as case-studies in urban pathology.

Mr. Kuper's rather detailed " Blueprint for Living Together " explores " neighbouring " in a post-war residential unit of ninety houses. The study is mainly based on an opinion and attitude survey among the housewives, and the report quotes copious vertabim comments. Design and layout are shown to make privacy very difficult to obtain. Using several indices, the author attempts a statistical assessment of sociability, popularity and selectivity in relation to siting characteristics. Differences are attributed partly to siting and layout, partly to such factors as geographical origin (only one-third are Coventry-born) and status, in terms of roughness and respectability. The physical links between houses are an important factor in, but not the sole determinant of, neighbour relations. In wide-ranging conclusions, similar American investigations and various theoretical studies are discussed and general ecological and sociological questions raised.

Mrs. Whiteley's lively survey of "Littletown-in-Overspill" finds much to deplore, from the miserable gas supply to the civic irresponsibility of well-to-do "immigrants" and the apathy and suspicion of working-class "locals."

The short papers of L. E. White and of Janet H. Madge carry weight, as the authors are versed in their respective subjects. Mr. White writes from observation and informal talk with children and their mothers on "The Outdoor Play of Children Living in Flats." He makes practical proposals, and stresses that imagination rather than money or space are needed for turning barren courtyards into real playgrounds. Mrs. Madge has examined "Some Aspects of Social Mixing in Worcester" by a house-to-house inquiry and by a comparison of clubs, and found little evidence of inter-class association.

In "Spare Time in the Black Country," Doris Rich contributes a thoughtful, workmanlike analysis of factual data. Social facilities being very poor in Coseley, and the 32,000 inhabitants living in several "overgrown industrial villages," the town centre draws people neither for entertainment nor for shopping. Leisure activities are largely confined to the neighbourhood; but an appreciable part of the spare time spent outside the home is spent outside the town altogether, particularly by residents of boundary areas and by those working outside Coseley. Yet, "Coseley people have a very strong local patriotism." Dr. Rich also brings out the differences in the catchment areas of various types of club.

As the papers are concerned with social ailments, they cannot be expected to portray the *joie de vivre* which throbs *sous les toits de Paris* and *under Milk Wood*. Nevertheless, the book would have been more spirited, had the problems been tackled more boldly, nearer to the roots. Certain aspirations of housing and town planning are put to the test, with rather unfavourable verdicts; but the general current doctrine of planning is too readily accepted, and the task of guiding the architectural planner is too narrowly conceived. Recommendations, however sensible, are modest. They include better sound insulation, sparing use of very intimate clusters of houses, sufficiency of population to make a local cinema a paying proposition. Other suggestions, such as "a very wide flexibility of approach" are unnecessarily vague. Some topics deserved more thought. Among these are the time required for the growth of neighbourliness and community spirit; the sapping of community life by the distance of cottage estates from the heart of the town and from

places of work; the possibility that, by shouldering responsibility for their own housing (as by housing co-operatives on the Continental model), people might "shift the emphasis from . . . the expert bureaucratic plan to the activities of the residents themselves"; the issue between catering for tenants' present wishes and envisaging a rise in cultural standards. The question how far the planners' aims are reconcilable with the nation's resources, in land and man-power as well as in capital, is outside the scope of the book.

Not only by its positive contributions but also by its omissions the volume stimulates thought on the varied social and economic implications of town planning.

KATE LIEPMANN

Bristol.

The Crofting Problem. By the late ADAM COLLIER, with a Foreword by A. K. CAIRNCROSS. (London: Cambridge University Press, 1953. Pp. xv + 191. 25*s*.)

WHEN Adam Collier was killed in a climbing accident in 1945 he was making the final revisions to the manuscript which represented the culmination of his research into the problems of the Scottish Highlands, and he was about to take up an appointment in East Africa. The incomplete manuscript, which has been so sympathetically edited by Professor Cairncross, is a striking testimony to Collier's characteristic ability to integrate an unusually wide range of intellectual interests. For the volume which has emerged is a lively analysis of problems of a dependent, underdeveloped economy which would repay study by those whose interests lie in the colonial sphere as well as by students of regional patterns of development in the United Kingdom.

Collier identified the crofting counties with the Highlands and Islands, so that the area covered by his analysis is the north-western half of Scotland bounded on the South by the counties of Argyll and Inverness, and reaching out in the north to the Orkneys and Shetlands. These seven counties account for more than one-sixth of the area of Great Britain, but they contained only 285,667 people at the time of the 1951 Census. They are relatively unfarmed and unindustrialised, and the crofting population itself is unspecialised to an extent that is paralleled only in the more primitive economies of the world.

In discussing the conditions of economic progress for this highly distinctive area of Britain, Collier ranged over a wide field of well-digested information. He began by considering its basic

natural resources, and analysed the contribution of topography and climate in imposing natural limitations on the range of economic activities and on the character of the social and economic organisation open to the Highlanders. He went back to the mid-eighteenth century to trace the social origins of crofting in the break-up of the clan system, and he described the more recent social and economic transformation in the way of life of the crofter as improved communications widened his horizon and increased his dependence on the world economy. The more specifically economic effects of this increased dependence and the role of the State in shaping the main features of the pre-war situation he examined in detail. Collier's own assessment of that situation was characteristically quantitative, and is contained in one chapter on the regional income of the Highlands in pre-war years and another on population trends in the crofting counties.

One reflection of the thorough way in which all this material has been digested is the size of the volume. An extraordinary array of topics are dealt with in a convincing and stimulating manner within the compass of less than 200 pages. Unfortunately the impact of the analysis fails somewhat in the final chapter which is a summary of the main conclusions in the form of a discussion of possible lines of action. It is the one chapter which gives the reader the impression that it is significantly incomplete. This is understandable. On the one hand, its revision was probably left to the last, and hence it was relatively less complete than the rest of the book; on the other hand, it is irretrievably dated. Up to this point Professor Cairncross succeeds in preserving a right and comfortable time perspective by frequent footnotes and by the insertion where appropriate of the basic recent statistics. It is a tribute both to author and editor that these asides and interjections add conviction to the analysis. In the final chapter, however, the reader is left drifting. Professor Cairncross does predict in his preface that, when the story is brought up to date, " in spite of the changes made since 1945 the basic problem will prove to be much the same as it was when Collier wrote," but it is difficult to lay down the book without speculating on what might have been the author's reassessment of his problem at the present day. What, for example, has been the effect, on what Collier called " the great power of resisting and retarding the rate of change possessed by the traditional Highland way of living," of the expenditure in the crofting counties of over £5 million per annum by the North of Scotland Hydro-Electric Board, together with an afforestation programme of double the pre-war rate,

investment of some £4 million in water supplies and sewerage, construction of new houses at the rate of nearly 1,000 a year, grants to local government of about £1 million per annum and all the increased agricultural subsidies and social-security payments now payable?

Collier estimated that the true regional income of the Highlands before the war was between £17·0 million and £17·25 (or, accepting Professor Cairncross correction for omissions, £21 million). If the same level has been maintained relatively to the United Kingdom as a whole, this estimate must be increased by 1952 to something of the order of £50 million, of which, according to the results of the 1949–50 Income Census, more than £25 million were assessed to income tax. At this inflated level the new investments and transfers mentioned above look somewhat less overwhelming than they did in relation to the pre-war levels calculated by Collier. They are still, however, a remarkable addition to the incomes and the basic capital equipment available in the Highlands. It would be interesting to know whether they have had any appreciable effect on the psychological and cultural factors which Collier ranked above the technological limiting factors to progress in the crofting counties. He stressed, for example, " the persistence into new circumstances of an ancient mode of life and thought, adapted to its own environment and with its characteristic form of social organisation," he deplored " the attitude fostered by unemployment legislation which has euphemistically been termed ' a willingness to receive,' " and he remarked of the Highlander that " Neither personal effort nor government intervention seems likely to raise him from his slough of despond." Comparable problems arise for other underdeveloped economies. If it is indeed possible to solve them or at least to reduce their influence by a sufficiently vigorous and appropriate economic policy, the lesson is one of wide potential application.

PHYLLIS DEANE

Department of Applied Economics,
Cambridge.

Scottish Chartism. By L. C. WRIGHT. (Edinburgh: Oliver & Boyd, 1953. Pp. 242. 21*s.*)

DR. WRIGHT has chosen as his field one of the most encumbered and overgrown to be found anywhere in post-industrial history. All historical movements, in the definable sense, are the results of twisted and numerous threads, but threads may be twisted into

a patterned plait or confused into a gigantic knot. Chartism is undoubtedly a knot, and in consequence requires patient unravelling to the very last involvement. In addition, the author has attempted to add to the considerable literature on Chartism in general a description of its vicissitudes in the hitherto uncultivated field of Scotland. Here Dr. Wright is attempting something which not only Scottish nationalists will applaud but all interested in completeness will hope to see extended to other fields. There can be no question that economic history has suffered to a greater degree than political and social history from a sort of generalised parochialism—as far as industrialism is concerned the provinces have tended to be more important than the metropolitan centre, and Chartism was certainly a phenomenon of industrialism.

The form of the book is conditioned to a large extent by its subject matter, and is thus not amenable to succinct precis. The main contention is that Scotland's experience was different from England's because of the different timing of industrialisation—specifically that the full tide of economic change came at a later date in Scotland, and so altered the attitude of public opinion. For instance, it is argued that 1830–50 " was an era of economic progress for Scotland " and that, by implication, for England it was a period at best of marking time. This seems debatable in general terms, and in addition it could be argued that rapid development involves large-scale dislocation of individual ways of life, a reason for discontent rather than the reverse. Much more helpful are the arguments that the peculiarities of the Scots Poor Laws and the local attitude to it (chiefly acquiescence) and the influence of a flood of ignorant Irish immigrants served to reduce the force of Chartism in Scotland.

Apart from this, the book has brought together an immense collection of variegated evidence of Chartist activity in Scotland. Naturally much of this is difficult to evaluate or to reduce to order, since a great deal of it rests on the authority of more or less ephemeral newspapers and tracts, nearly all of which were naturally biased. However, from the patient editing of Dr. Wright emerges an unmistakable atmosphere of what Dr. J. L. Hammond called " The Bleak Age "; the fundamental problems of Chartism were those of a society being more rapidly transformed than any since early mediæval times; from every side the uprooted and the confused sought comfort, and they were supplied with it by every sort of physician from the objective observer to the hysterical lunatic. The description of this chaotic and often pitiful scene has been achieved for Scotland by this book.

In addition, the author has elaborated a number of factors which were unique to Scotland and served to make the adherence of Scots to Chartism episodic. The period includes the disruption of the churches; the evidence suggests the long history of Glasgow–Edinburgh rivalry and the characteristically ambivalent attitude of Scots to temperance. These and a host of other matters consumed time and money and chopped the movement into a hundred splinters. Under conditions of weak leadership or divergent loyalties Scotsmen exercised their native tendency to philosophical argument to the almost total exclusion of constructive action. It seems that it is here, in character and environment, rather than in any *fundamental* difference in economic circumstances, that the interest of Scottish Chartism lies.

Dr. Wright divides the period into the English phase up to 1839, the Scottish phase 1839–42 and the Irish phase 1842–48, in an attempt to distinguish differences in leadership and direction. Superficially this is helpful from the analytical point of view, but fundamentally the Lowland Scots character seems to provide a continuous vein of intransigent argumentativeness. In a period which is now recognised to be the convulsive genesis of modern capitalism the Scots indulged in a frenzy of enjoyable but unconstructive " pheelosophising."

However, even if the main thesis of this book is debatable, there remains a considerable addition to our knowledge of a fundamentally important period in economic history. For this, for his attention to detail, for his easy narrative style and for his wealth of anecdote Dr. Wright is to be congratulated.

A. V. COLE

University of St. Andrews.

A Hundred Years of Progress. The record of the Scottish Typographical Association 1853 to 1952. By S. C. GILLESPIE. (Glasgow: Robert Maclehose for the Scottish Typographical Association, 1953. Pp. vii + 268. 25*s*.)

THE printers, among the best-documented of trade unionists, show their customary concern for a sound recording of their affairs in entrusting the writing of their history to properly qualified persons. If Miss Gillespie has not served the Scottish Typographical Association quite as well as Mr. Ellic Howe has the London Society of Compositors, she has nevertheless provided them and us with a very useful piece of work. An introductory part discusses (somewhat cursorily) Scotland and the part of printing,

and trade union organisation up to 1853. The second and third parts, dealing respectively with 1853–1902 and 1903–52 are designed on the same plan : a general survey of the industry and the Association is followed by chapters on wages and working conditions, provident schemes, apprentices, machinery and women's work, disputes, relations with kindred unions and cognate matters. The Rules of the General Typographical Association of Scotland 1841, a sketch of the various General Secretaries and a table of benefits paid 1853–1902 are printed as Appendices. Oddly enough there is no table of the Association's membership (and indeed little information about it in the text), and none of its branches. No attempt is made to discover the relative strength and recognition of the Association at various periods, though some estimates of the number of fair and unfair offices are available (*e.g.*, in the Social Science Association's Report on Trade Societies, 1860). In general, the serious student would have been helped by a greater number of such appended tables—for example, of recognised rates in different towns. It is also probable that the author has felt happier with the second half of her period than with the first. She has certainly provided rather more, and more fully worked-out information about it.

The Scottish Typographers were (and are) a typical craft union, though with certain peculiarities. Their strength seems, until the 1890s, to have been rather less in the industry than in some parts of England, and in London. The coming of machinery, however, enabled it for the first time to operate effective restrictionism, by eliminating the mass of juvenile labour and of women compositors ; a piquant, but in the printing trade not an unknown, effect. Possibly the union's penchant for taking unskilled or semi-skilled workers under its wing, which has led to some friction with Natsopa and the National Union of Printing, Bookbinding, etc. Workers, dates back to its days of fighting against dilution. On the other hand, it appears to have been a good deal more lukewarm about political action than the London Society of Compositors. Of its general secretaries only one is recorded as having been even a Labour Councillor and none a Labour M.P. Support for the Labour Party in the early stages appears to have been mainly left to voluntary action by members.

E. J. HOBSBAWM

King's College,
Cambridge.

Central European Democracy and its Background : Economic and Political Group Organisation. By RUDOLF SCHLESINGER. International Library of Sociology and Social Reconstruction. (London : Routledge & Kegan Paul, 1953. Pp. v + 402. 30*s.*)

THIS is an important book, which everybody interested in German, Austrian and Czechoslovakian affairs from 1918 to 1938 should consult, though few will accept its conclusions. But it is not an analysis of " Central European Democracy and its Background—Economic and Political Group Organisation." This democracy, the author argues, has become sectional by creating occupational or vocational mass organisations like trade unions; non-labour occupational sections are but superficially sketched, and even wrongly described by him. Sectional mass organisation " developed a set of functions, which could be taken over by the State "—hence Fascism.

The value of the book lies in its detailed description of the struggles of the labour movements in these three countries, especially from 1918 to 1933; the story of the Communist Party is particularly enlightening, for the author " stood close to the events though not to the persons concerned." Though its best parts deal with Austria, the book might be called " the sins of German Social Democracy."

Dr. Schlesinger simplifies his critical task by minimising and sometimes ignoring the difficulties which beset the German Social Democrats and contributed to their failure : " There is no reason to suppose, that any variation in the setting would have produced a very different external result." But " there can be no doubt that a party of the Russian Bolshevik type, if one had existed in Germany, between January 1918 and August if not October of 1923, would have found half a dozen opportunities to seize power in conditions quite favourable for subsequent Socialist reconstruction. There might have been civil war, but the actual choice was not between peaceful and gradualist democracy and civil war, but between civil war won on the barricades and civil war lost in the torture chambers." This is mere rhetoric. For civil war lost on the barricades by revolting labour might have had appalling consequences for it. The inevitability of civil war seems to be the lynch-pin of Dr. Schlesinger's philosophy. He attacks President Ebert for having said, " I hate revolution like deadly sin," because " peoples and classes cannot be masters of their future, without if necessary accepting low rations and some

casualties" (the price of even a successful civil war might be somewhat higher than this modest estimate).

In one respect Dr. Schlesinger's criticism of the Social Democrats' policy is justified. Eduard Bernstein had shown that some of Marx's main predictions, if not faulty, had at least not been fulfilled; he had, however, retained his belief in the inevitable victory of Socialism through the working of immanent economic forces. "The materialist," he had said, "is a Calvinist without God." He had thus enabled Social Democrats to remain cautious gradualists and orthodox Marxists at the cost of revolutionary fervour. But the Bolshevist success had put an end to this comfortable automatic determinism.

The German Social Democrats had, however, a much better understanding of the strength of their opponents than Dr. Schlesinger, who sees them with the eyes of a caricaturist, as when he says that in Imperial Germany "no member of the middle-class or intellectual had any social standing without being a commissioned officer in the reserve." There may have been one chance for a successful defence. When Papen usurped power the Prussian Government, controlling a very efficient police, might have resisted by armed force, and being supported by its bourgeois partners might have won, as the army probably would not have interfered. But all this is speculation, as are most of Dr. Schlesinger's political conclusions. For history, which has not happened and which can neither be proved nor disproved, does not make good sociology. By treating Germany's, Austria's and Czechoslovakia's particular cases as typical, Dr. Schlesinger may have tried to prove the general thesis, that gradualism is bound to fail everywhere. But his definitions, for example of democracy, are so slippery, and his writing is so involved, that this interpretation may not be justified.

M. J. BONN

London.

Economic Planning in Hungary, 1947–9. By GEORGE KEMENY. (London and New York: Royal Institute of International Affairs, 1952. Pp. x + 146. 12*s.* 6*d.*)

THIS short book is a valuable contribution to the literature of economic planning. The years 1947–49 are, of course, of purely historical interest, over-shadowed by the five-year plan of 1950–54; their significance is due to the fact that it was in this period that Hungary went over from an economy of controls to economic planning in the Soviet sense. Dr. Kemeny's work provides a detailed analysis of this process, covering both the economic and the administrative aspects. He also describes the antecedents of planning and evaluates the results. He is well qualified to interpret this development for the Western reader. As a former Financial Editor of the leading Hungarian daily newspaper, the *Pester Lloyd*, he was well acquainted with both the Hungarian economic background and with Western economic thought. Moreover, as Under-Secretary for Finance in the Hungarian coalition government until 1948 (when he left the country for political reasons), he was concerned with the initial stages of the planning.

Dr. Kemeny's book is a scholarly and critical survey of the Hungarian experiment; indeed, one feels that he sets almost too high standards for economic planning of this kind to satisfy. Some of his strictures are more appropriate as a criticism of the industrialisation process, which as everywhere became the core of the plan, rather than of economic planning itself. His verdict is that the plan achieved its part-objective of the reconstruction of the Hungarian economy; he is more doubtful about the effect of the plan on the immediate increase in the standard of living. He thinks that the fulfilment of the plan was greatly facilitated by the availability of unused resources, notably man-power, which allowed the reaching of output targets even if the combination of factors was costly.

As for the analysis of the method of planning, it is interesting that at the time of initiating the plan, the Hungarian Government had already complete control of foreign trade and thus of raw-material supplies as well as of a substantial slice of large-scale industry, transport and the credit institutions. The initiation of the plan involved in the first instance strict investment control and an extremely tight credit control, which led to the centralisation of credit operations in the central bank on the Soviet pattern. It is interesting to note that no central control over man-power was introduced until late 1949. Neither was fiscal policy, particularly purchase tax, used as a means of planning, although purchase tax, always a mainstay of the Hungarian fiscal system, provided an increasing part of government revenue and thus also of the means of finance of the programme. Dr. Kemeny's analysis, somewhat too compressed on the financial aspects, seems to refute any supposed similarity on this point with the Soviet system. His work is based, of course, on the examination of original source material; it is a pity that he

does not include a list of the sources consulted or of the most important original documents on Hungarian economic planning for the benefit of other research workers in the field.

L. ROSTAS

Cambridge.

The Muscovy Merchants of 1555. By T. S. WILLAN. (Manchester: Manchester University Press, 1953. Pp. v + 141. 16*s*.)

IN his analysis of the founder-members of the Muscovy Company Dr. Willan has made a notable contribution to the biographical study of economic history. The details of the trade which the Company organised are obscured by the lack of records —the Company's documents were destroyed in the Great Fire of 1666—and a biographical analysis does little to throw light on this problem. It does, however, show up the position and the cohesion of a group of London merchants in the sixteenth century.

Accepting the dominance of London in the export and import trades of sixteenth-century England, Dr. Willan finds in the great merchants of London the mainstay of the great chartered companies of the period, and the natural core of the Company formed after the Chancellor voyage to Archangel. The Company was from the start a joint-stock corporation and, with over two hundred founder-members, it drew support from peers, knights, gentry, officials, lawyers, widows, London merchants and one provincial merchant. The last was Edward Prynne of Bristol, and in view of the part which Bristol and its merchant community had played in the lives both of Richard Chancellor, the "grand pilot," and of Sebastian Cabot, the first governor of the Company, the virtual non-representation of Bristol might seem to need explanation.

Nearly three-quarters of the chartered members were described as "London merchants." At least thirteen of them were members of the Staplers' Company, and at least twenty-six were Merchant Adventurers. There were very few Baltic merchants or Levant merchants—the two trades which the new Company hoped to tap; but there were many who traded to France and more who traded to Spain and Portugal. The strongest connection was with the promoters of the Guinea voyages, which were also financed on a joint-stock basis. Many of these "London merchants" were first-generation immigrants to the metropolis. Their provincial origins were, for the most part, those of

prosperous middle-class families. They were often closely bound together by ties of marriage, of common experience in civic office (at least thirty-two of them had shared the duties and companionship of the House of Commons), while others had shared office under the Crown as financial agents, Customs officials or mint servants. Their chief bonds, however, lay in common membership of the great London Livery Companies.

Such official bonds are most adequately set out. The elusive contacts of common trade have been more difficult to establish. But this brief study gives interesting details of this group of London merchants, owning and hiring ships, in person or in syndicates, engaging in trade on their own accounts with apprentices and factors abroad, as well as in their capacity of members of the Muscovy Company. Some of them were in retail trade, some engaged in the rising industries of the sixteenth century. Varying greatly in wealth, they ranged from the possession of eighteen manors down the smallest leases of city property. Working through the records of the Prerogative Court of Canterbury, Dr. Willan is able to show that for the most part they kept a surprisingly high proportion of their wealth in personal, not in landed, property.

Apart from the intrinsic interest of the attractive monograph, the closely-documented biographical appendix will prove invaluable to all workers in this field. The book is, in effect, a valuable contribution to the study of the pattern of investment as it was affected by the opportunities of sixteenth-century England and by the system of joint-stock finance. It is a great pity that, even when aided by the Tait Bequest, so brief and helpful a study should have to be priced so high as sixteen shillings.

E. E. RICH

St. Catherine's College,
Cambridge.

World Population and Production. Trends and Outlook. By W. S. and E. S. WOYTINSKY. (New York: Twentieth Century Fund, 1953. Pp. v + 1268. $12.)

"THIS book—together with a volume now in progress on world trade, transportation and government, to be published in 1954–represent an effort to put between the covers of two manageable volumes what amounts to a statistical picture of the collective resources, as well as the economic performance and promise of the full array of the nations of the world." The "effort" thus indicated

in the opening sentence of the Foreword can be said partly to succeed. The book will prove most useful for reference, and is arranged logically into five main parts: man and his environment (largely demographic); world needs and resources (including standards of living and productivity); agriculture; energy and mining; manufactures. The tables, maps and diagrams are clear, though appealing to diverse levels of sophistication. And many recent trends and "stabilities" are brought out in which the present reviewer, at least, finds great interest: the closing of the birth-rate gap between different classes and between city and country (pp. 157 and 177), for instance; or the more equal distribution of negroes over the United States (pp. 88–9); or the persistent confirmation of Engel's Law (pp. 272–4), and its extension in America from food and other necessaries to medical services.

Statistics, however, cannot fill in the whole picture, and the authors boldly sketch in some theoretical background to connect their figures. In a book of 1268 pages the reviewer must act as though engaged on "consumer research" and take an arbitrary sample; but he will pick the theory in the very centre of the picture's background. The relation of "World Population and Production" clearly calls for a discussion of Malthus' principle of population, and Mr. and Mrs. Woytinsky do not flinch. Unfortunately their acquaintance with Malthus' Essay appears remote, and they seem to have relied on other authors' accounts of the Essay, if not on other authors' accounts of other authors' accounts. Instead of quoting Malthus' own very succinct statements of his principles, they cite Malthus' simile of Nature's Feast, abandoned in his later editions, and harp on the detail of the arithmetic and geometric progressions. In any case it is not true that "when Malthus wrote his Essay . . . his purpose was to show the foolishness of the poor law system" (p. 285). In the preface to all his editions Malthus states that his essay was suggested by Godwin's views of the perfectibility of man. Malthus' view is in fact much less dated than Godwin's, and it is farcical to say (p. 285) that "the assertions of Malthus on population laws have proved false." His assertions back and connect the statistical picture only too neatly.

Mr. and Mrs. Woytinsky seem to share the common view that the limitation of population growth is somehow alternative to raising productivity. The two are, on the contrary complementary, and both are factors in the remarkable increase in average standards of living achieved by Western countries in this century, as contrasted with the undeveloped countries of the Far East, East and Middle East. In an admirable table and series of paragraphs setting forth "the characteristics of rich and poor nations," the authors (pp. 349–401) review "the distribution of population and its physical environment" as "a controlling factor in the level of national economic well-being." But they find that "a more significant correlation exists between *per capita* income, on the one hand, and birth and death rates on the other. As one moves from prosperous to poor countries, both birth and death rates seem to increase." Interjection of Malthusian theory on preventive checks (affecting births) and positive checks (affecting deaths) would have been very relevant at this point, rather than its rejection out of hand a hundred pages earlier.

The text, though often misleading in tracing theoretical threads connecting the tables, serves an important function in pointing to the limits imposed on statistical comparisons between countries. Readers are cautioned, for instance, against concluding, as they might from Table 165 (p. 350), that among the women ten times more are employed in Finland than Mexico; or (pp. 356–9) that the proportion of professional among all workers (said if low to be the sign of a "primitive" country) is really in Great Britain only half that of the United States. In the absence of footnotes fully guarding against the different definitions adapted in different countries, the very clarity of the tables may yet prove a pitfall for the unwary. To the wary, however, Mr. and Mrs. Woytinsky have rendered a signal service.

P. SARGANT FLORENCE

University of Birmingham.

The Present as History: Essays and Reviews on Capitalism and Socialism. By PAUL M. SWEEZY. (New York: Monthly Review Press, 1953. Pp. 376. $5.)

THE title which Dr. Sweezy has given to this interesting collection of essays and reviews emphasises the all-pervasive theme which runs through them—that the problem of the present, if it is to be understood and solved, must be considered first and foremost as an *historical* problem. The present must be seen in relation to the past from which it has arisen and the future which it will become, and this necessarily involves approaching it from the point of view of some sort of general theory of historical development. Dr. Sweezy's starting-point is Marxism. He is concerned above all to demonstrate that certain basic Marxian concepts—at least when properly developed and adapted to

present-day conditions—are indispensable aids to the understanding of our epoch. At the same time he sets his face firmly against the over-simplification and mechanical application of these concepts which is characteristic of " vulgar " Marxism.

Appropriately enough, the book begins with a very sensible essay on " The Communist Manifesto after 100 Years," in which Dr. Sweezy asks how the *Manifesto* has stood up to the test of experience during its first century. Only in one respect, he argues —their view that socialism would come first in the most advanced capitalist countries—have Marx and Engels really been proved wrong by history. The reason for their mistake, in essence, was that they did not foresee that capitalism would eventually enter a new stage—that of " imperialism "—which for various reasons would enable it, at least temporarily, to " dig in deep in the advanced countries of western Europe and America " (p. 26). It is with the anatomy of this " imperialist " stage of development that Dr. Sweezy is primarily concerned in most of the articles which follow.

The essays dealing with the character of western capitalism to-day range from solid pieces of research, such as the path-breaking study on " Interest Groups in the American Economy " (first published in 1939 as an appendix to the report of the National Resources Committee on *The Structure of the American Economy*), to a number of rather more ephemeral and journalistic items from periodicals such as *Monthly Review* (of which Dr. Sweezy is co-editor) and *New Republic*. Some of the more slender of the latter might with advantage have been omitted from the collection. Others, however, are of higher quality—notably " A Marxist View of Imperialism " and " The American Ruling Class," two *Monthly Review* articles in which Dr. Sweezy attempts to give precise and up-to-date content to two basic Marxian concepts. Attention should also be drawn in this connection to " The Illusion of the Managerial Revolution," a closely-knit and effective attack on Burnham.

To most readers of the ECONOMIC JOURNAL, however, the two final sections of the book, entitled " Thinkers and Theories " and " Some Problems in Political Economy," are likely to be of more interest. " Thinkers and Theories " contains seven essays and reviews, including a well-known obituary article on Keynes and an exceptionally stimulating piece on Schumpeter's theory of innovation. The final section includes a fairly popular article on " Marxism and Orthodox Economics "; a perceptive review of the Jubilee Edition of the *Fabian Essays*; a reply to certain critics of

Dr. Sweezy's *Theory of Capitalist Development*; and three other articles which appear here for the first time. One of these, " A Crucial Difference between Capitalism and Socialism," which compares what happens under each of these systems when a process of industrialisation comes to an end, is particularly timely in view of the recent economic changes in the U.S.S.R.

One of the leading ideas running through Dr. Sweezy's critique of orthodox economists is that they have too often " misunderstood or ignored the role of profit in capitalist society as a whole " (p. 351). This idea is, of course, developed as a corollary of the major themes elaborated in the earlier part of the book. Keynes comes in for a certain amount of criticism under this head, and the Fabians are accused (on the evidence of the *Essays*) of treating profit as a phenomenon of secondary importance when compared with rent. But it is in the essay on Schumpeter that the idea emerges most clearly. Dr. Sweezy argues that Schumpeter's conclusions regarding the mechanism of economic change spring logically from his implicit assumption that in the " circular flow " society is divided into two classes, landlords and others, and everyone has equal access to " capital." In such circumstances, Schumpeter's supposition of the primacy of consumption motives is a reasonable one, and in order to explain economic development it seems necessary to bring in a force from outside—the entrepreneur. If, however, we started off with a situation in which there were not only landlords but also " a special class of individuals having exclusive control over the means of production other than land " (p. 278), then although we could still make this economy stationary by supposing the primacy of consumption motives, this supposition would be much less plausible than it was before. There would in fact then exist, Dr. Sweezy argues, both the power and the motive to accumulate, and surpluses and accumulation would begin to appear not as the consequence but rather as the cause of economic change. What Dr. Sweezy is saying, in effect, is that modern economics has too hastily discarded the old Classical notion that profit is something which is exuded, as it were, by the labour–capital relationship itself (even in the absence of innovation), and that an economic system founded on this relationship necessarily contains within itself the forces making for accumulation and innovation. This is a point which has often been made by Marxian economists, but it has rarely been made so persuasively.

RONALD L. MEEK

University of Glasgow.

NOTES AND MEMORANDA

Instability of Primary Product Prices: A Protest and a Proposal

A good deal has been written in recent years about the instability in the prices of primary products and the evils resulting therefrom. Important examples are two studies issued by the United Nations: first, *Instability in Export Markets of Underdeveloped Countries* issued in 1952; and the second *A Report of a Committee on Commodity Trade and Economic Development* issued in 1953. The first shows statistically the extent of instability, and the second attempts to put forward certain remedies. Both accept as axiomatic that instability is a bad thing, but in neither is there any real attempt to work out the economic rather than the statistical facts about instability, or to assess the true disadvantages of it.

It is shown, in elaborate detail, that instability produces great variations in the income of certain individual countries; it is inferred that those countries will necessarily be faced with particular difficulties in the execution of development and investment programmes and in maintaining non-inflationary internal policies. Other evils are added; *e.g.*, it is demonstrated (perhaps unnecessarily) that the more specialised a country's industries and the smaller the economic unit, the greater is likely to be the range of fluctuation of its total income. Dire conclusions are inferred from calculations of the terms of trade based on the assumption that primary producing countries import nothing but manufactured goods (in practice, of course, they import each other's primary products also). By arguments which are logically impressive but unconvincing to common sense it is shown that increases and decreases of income are both bound to produce inflation. As a final addition to the train of evil, the second report shows that whereas economically developed manufacturing countries tend to have a more favourable balance of payments in depression and a less favourable one in boom years, primary producers have the opposite pattern.

This last conclusion deserves further attention as indicative of a state of mind. No more startling statistical revelation has been made since the famous discovery that very nearly 50% of the population of the United Kingdom are less than the average height.

Even the most elementary student of the theory of foreign trade knows that it is not possible for all countries to have unfavourable balances of payments at the same time. If there are countries whose balances are moving unfavourably, there must of necessity be others which are moving favourably. Now it does happen that people whose income is notoriously liable to wide fluctuations do tend to put aside money in times of high income and to use it in times of low income, and this is just what primary producing countries have been doing. They have a favourable balance of payments when their incomes are high, that is they tend to build up external reserves, and they spend some at least of those reserves in periods when their incomes are low, and therefore have unfavourable balances of payments. This additional evil thus turns out to be a very proper and sensible compensatory action to ensure that actual levels of consumption do not vary quite so violently as export incomes.

If so much naïvety is to be found in a report of such authority it is hardly surprising that so much of the discussion of instability of primary product prices is at such a primitive level. In very little of it is to be found any real discussion of the effects of variation over a period of time in the rate of receipt of a given total income. Presumably writers on the subject are not merely complaining of the failure of the income of primary producers to maintain itself always at the highest levels, and they would no doubt agree, if the point were put to them, that what they are concerned about is the amount of variation around an average. None the less, it is impossible to resist the conclusion that much the greater part of the discussion is inspired by the thought that it would be a very much happier world for primary producers if their incomes were always at boom levels.

The economic as distinct from the statistical problem of instability is not whether a high income is better than a low one, but whether on balance it is better to have an absolutely steady income or one that varies more or less substantially from the average of the period under consideration. Most of the discussion takes for granted that variation is itself an evil, and the United Nations study of instability in export markets is indeed written in terminology which would convey, at least to an incautious reader, that upward variations are just as bad as downward. It is not, however, to be taken as axiomatic that stability of income is always "better" than fluctuation. It depends very much on what one means by better. It may certainly be better for the peace of mind of many individuals, and especially for the peace of

mind of government planners. The criteria usually adopted, however, in discussions of this kind are the rates of growth in the economy, and particularly the levels of total investment resulting from any given degree of instability. It is here that the axiomatic assumption of disadvantage in fluctuating income is particularly open to challenge. It is true that the kind of planning of investment which spends income long before it is received is rendered more difficult, but if investment and saving are conducted on a more sober basis, and money is spent only when it is fairly clearly in sight it may well be that instability results actually in greater rather than less saving and real investment.

Normally with individuals the proportion of income saved is greater after a marked increase of income. Very much the same is true of communities, and when the initial fluctuation is upwards it is almost certain that the first effect will be that the proportion of income saved will be particularly high. It may then follow that in a subsequent period of lower prices and incomes a portion of the saving will be spent for the maintenance of consumption, but it is probable that a fair amount of it will be spent on genuine investment, and it is by no means improbable that the total investment over the period will be larger than if the same income had been received equally spread over the period of years concerned. Certainly the record of actual investment, primarily from local resources, in countries of such notoriously unstable export income as Malaya does not suggest that it is impossible to build up a very respectable capital equipment in such circumstances.

Of course there is always the temptation before individuals, corporations and governments to assume that boom times are going to last for ever and to commit themselves at such times to programmes of investment or other expenditure which in fact they cannot carry on when the boom comes to an end. It is by no means axiomatic, however, that all primary producers and all the governments of primary producing countries will be so misguided, especially when past experience provides a warning of probable instability. Where they are disposed to behave improvidently it is probable that they would do so anyway, that is they would always over-estimate their probable future resources, and would therefore in any case run into the kind of difficulties of internal inflation and external balance-of-payments problems which are now commonly attributed to the evil of price instability. That this is so is again suggested by the fact that a quite substantial group of primary producers, the British Colonial dependencies, have in practice over a long period of years never

had the balance-of-payments problems or internally induced inflation which are supposed to follow with absolute certainty from the price instability which they have experienced equally with other producers of food and raw materials.

I am not suggesting that there are in fact no evils of instability; and indeed there are many things which could be done to prevent it which are less frequently recommended than they should be. What I am suggesting is that the facts are nothing like as simple as so much public discussion and so many authoritative reports assume.

The subject would, I believe, be greatly illuminated if those interested in it would stop deploring the refusal of prices (and the factors which influence them) to stay put and would devote themselves to the study of the real consequences and the connected phenomena. The subject is not, after all, a new phenomenon; prices have been fluctuating ever since there have been prices, and a lot of information ought to be available about the results of fluctuations. As a first list of research topics I suggest:

(1) What are the effects of sharp increase in primary producers' incomes on: (*a*) consumption, (*b*) saving, and (*c*) investment? Do they save more or less out of an increment of income than out of a steady flow?

(2) What are the corresponding effects of a sharp decrease of incomes?

(3) Is the behaviour of a "primary producing country" significantly different in these respects from that of a group of primary producers within a political unit?

(4) Can one draw any conclusions about the probable average levels of consumption and investment among economic groups of stable and unstable earnings respectively?

(4) How does the behaviour of individuals, institutions and governments adjust itself to the expectation of instability? Are there significant differences in the behaviour of different types of economic units, *e.g.*, externally controlled firms, locally controlled firms and agricultural smallholders or other small-scale producers? Do distinctive institutions (*e.g.*, special types of banks) develop? How is banking practice affected?

(5) On the other hand, how is behaviour adjusted to the expectation that fluctuations (especially downward fluctuations) will be prevented by a beneficient Providence in the shape of "international action"?

(6) To what extent can earnings (export or otherwise) from the sale of produce be replaced by income from internally consumed

products—as the Indonesian smallholder can shift from rubber to rice and vice versa?

(7) How far does waste occur in the use of savings for actual investment because of the irregular flow of savings, as distinct from the other frequent errors of investment in underdeveloped areas?

(8) What internal devices can be used to mitigate the effects of fluctuation? Are special tax policies appropriate? *e.g.*, tax encouragements to the setting aside of reserves, or steeply graduated export duties? Are special reserve or other requirements needed in banking laws? What should be the policy as regards general Government reserves? What are the implications for choice of currency system and kind and proportion of currency backing? What role can be played by stabilisation or marketing boards, and how should they conduct their practical policies?

S. CAINE

University of Malaya,
Singapore.

A NOTE ON THE DETERMINATENESS OF EQUILIBRIUM

THIS is in response to Mr. N. Ray's comment on Marshall's demonstration concerning indeterminateness of equilibrium in barter.[1] The problem relates to the formation of price in a daily market where the stocks of goods to be exchanged are fixed.

It is well known that Marshall explains determinateness of equilibrium on the assumption that the marginal utility of money is constant. In the corn-market example (*Principles*, Bk. V, Chap. II), where corn is exchanged for money, equilibrium is determinate. In the apple-nut case (*Principles*, App. F), which is a case of barter between two goods, the equilibrium is indeterminate.[2] In either of these cases the parties come to the market without any knowledge of each other's strength and inclinations. The market therefore starts with "false" prices. However, in the corn-market case, since the marginal utility of one of the goods—money—is assumed to be constant, the final rate is

[1] ECONOMIC JOURNAL, December 1953, pp. 917–19.

[2] There is an arithmetical slip in the illustration given by Marshall in the Appendix on Barter (*Principles*, 7th edition, pp. 791–2), which may be noticed here. In the case of *B*, the holder of nuts, having the upper hand in the bargain, *A* is supposed to be induced to give six apples for fifteen nuts. Since, however, *A*'s initial comparative utility of apples and nuts is assumed to be 1 : 3, six apples cannot be exchanged for anything less than eighteen nuts.

independent of these "false" prices, or in other words, it is independent of the amount of money that passes from the buyers to the sellers in course of the transactions. In the barter case the final rate is dependent upon the initial rate and the intermediate rates, and may lie anywhere within the limits set by the comparative utilities of the goods on the part of the two parties.

It is significant that Marshall does not use curves in this context. As he writes to Edgeworth, "I never apply curves or mathematics to market values. . . . *Ox* for market values measures a stock and not a 'flow'; and I found that, if I once got people to use Demand and Supply curves which discussed *stocks* along the axis of x, they could not easily be kept from introducing the notion of stock when *flow* was essential" (*Memorials of Alfred Marshall*, Ed. Pigou, p. 435). Mr. Ray introduces what I would call the Edgeworth–Bowley diagram, based on indifference curves, and fixes his eyes on the point of intersection (H) between the so-called "price consumption curve" and the "price offer curve," arguing that, while in the case of bilateral monopoly the equilibrium may lie anywhere on the contract curve, perfect competition will set the ultimate equilibrium price at H, irrespective of whether the marginal utility of money is held constant or not. It looks as if this is a position similar to Edgeworth's. "(α) Contract without competition is indeterminate, (β) Contract with perfect competition is perfectly determinate, (γ) Contract with more or less perfect competition is less or more indeterminate" (Edgeworth, *Mathematical Psychics*, London School Reprint, p. 20).

However, whereas Edgeworth arrives at his result by way of "recontract," which precludes transactions at "false" prices, Mr. Ray jumps to the conclusion that even if transactions begin at "false" prices, equilibrium will be determinate under perfect competition. This surely is an illegitimate deduction. As Mr. Ray rightly points out, *à la* Hicks, the assumption of constant marginal utility of money amounts to ignoring income effects on the part of buyers and sellers. If, however, income effects are allowed for, and some transactions are assumed to take place at "false" prices, there is no reason why the final equilibrium should not be dependent on the "path," whatever the "field" of operation may be. In the type of market that Marshall has in view constant marginal utility of money is indeed a necessary condition for determinate equilibrium. An alternative assumption would be that suggested by Hicks, namely that the buyers' income effect and the sellers' income effect—which run in opposite

directions—cancel out (Hicks, *Value and Capital*, 2nd Edition, p. 129).[1]

What, then, are we to say about Marshall's treatment of international values? The treatment runs in barter terms, and yet Marshall works with the concept of determinate equilibrium, relying simply on the assumption of "free competition." On the other hand, there is a reference to the need for "a little 'trial and error' if the trade is new" (see *Money Credit and Commerce*, p. 164). This seems, on the face of it, to suggest that the hypothesis here is on a par with that in the apple–nut case. The interpretation of this apparent anomaly seems to be that, in the context of international values, Marshall has in mind the possibility of *recontract through time*. Marshall's international trade curves are *normal* (in the sense of "long period") demand-and-supply curves of competing traders of *E* and *G* countries; they refer to a "flow," and not to a stock.

Banaras Hindu University. A. K. Das Gupta

Sterling Balances and the Colonial Currency System: A Reply

My note in the Economic Journal of December 1952 attempted to demonstrate that an increase in a colony's currency circulation under the existing regulations forces the colony to save an equivalent amount of its sterling resources, and hence reduces its ability to import, even though the sterling deposited with the currency authority is *initially* provided by a United Kingdom enterprise such as a trading firm. In her comment [2] Dr. Greaves makes no reference to the later stages of the process of currency expansion, although it was on an analysis of these that my whole argument hinged. In effect, she merely repeats her earlier assertion that the currency rules impose no restriction on imports because the currency issue is financed from the United Kingdom.

I cannot see anything in Dr. Greaves's note to destroy my belief that sterling cannot be spent on imports so long as it is held as currency backing. It is difficult to see why she should think

[1] When the two income effects cancel out, it can be shown, by combining the demand curve of buyers and the reservation-demand curve of sellers in the Wicksteedian manner, that the different points on the combined demand curve are co-existent, and that the final equilibrium rate is determinate, being that at which the buyers and sellers, between them, take off the entire stock. Obviously, the less imperfect the market is, the greater is the possibility of the two income effects cancelling out, and the less, too, is the chance that the market should start with very "false" prices.

[2] Economic Journal, December 1953.

"palpably absurd" the view that people cannot both hold currency and have the things it would buy. This seems to me to be a truism of the "you can't *have your cake and eat it*" variety. The special feature introduced by the colonial currency regulations is that the holding of currency immobilises a corresponding value of the colony's external purchasing power. In territories where the use of bank money is little developed this immobilising of external purchasing power is quantitatively important.

Dr. Greaves quite correctly says I did not refer to the fact that banks will not redeem currency temporarily surplus to their needs if there is no net gain from doing so. But she does not make clear the relevance of this to the point at issue. There is, indeed, something more to be said about currency held by expatriate enterprises. On reflection, I realise that my argument could have been stronger than I made it. I suggested that expatriate banks and firms were responsible for financing that part of the currency circulation which they were holding. While in a sense this statement is correct, it does not sufficiently emphasise the fact that it is only the existing reserve provisions which prevent any of the sterling backing of that currency from being spent.

In fact, the whole answer to Dr. Greaves can be expressed in this way, in addition to the way I originally put it. Sterling funds to finance a currency expansion may be provided by United Kingdom enterprises. But this is not a consequence of the existing colonial currency system. A United Kingdom enterprise operating in a colony will presumably have its capital funds in sterling, part of which will be used to buy local currency. Whatever the currency reserve regulations, the funds paid over for currency would accrue to the sterling resources of the colony. The effect of the 100% reserve system is to compel the holding of this sterling and to prevent any of it from being spent on imports. Looked at from this point of view as well, therefore, the colonial currency system may be seen to enforce a saving of colonial sterling income, with a consequent reduction of imports below what they could be. The facts Dr. Greaves is fond of emphasising, that currency expansion is "financed with sterling from banking and trading accounts somewhere in the United Kingdom," and that "the London funds precede the distribution of colonial income," are seen not to affect the matter, once one takes the trouble to look behind superficial appearances.

Arthur Hazlewood

Institute of Colonial Studies,
Oxford.

Sterling Balances and the Colonial Currency System: A Comment

The currencies in the hands of individual holders in the Colonial Territories indeed entitle them, as Miss Greaves remarks,[1] to the equivalent in purchasing power, whether that power is exercised for local or for imported goods and services. These holders are obviously making a normal economic choice: that of holding their resources in the most liquid form available; and by so doing they cannot be said to have any hardship imposed on them—on the contrary. At the same time the fact, pointed out by Mr. Hazlewood,[2] that the existing system of colonial currency issues has built up in London a large balance of sterling to the credit of the Colonial Currency Boards, a balance which is, in fact, a loan from the colonies to the British Government, is incontrovertible. Such a loan obviously means, as Mr. Hazlewood points out, a postponement by the colonies, and hence by their inhabitants, of their claims to goods and services which they could purchase from the United Kingdom. Both Miss Greaves and Mr. Hazlewood are, therefore, right in their main arguments. The connecting link between their apparently contradictory points of view is provided by the present-day normal practice of treating currency issues as (normally interest-free) loans by the currency-absorbing population to the currency-issuing authorities: the latter do not have to immobilise any of their own resources *pari passu* with the issue of fresh currency. In the case of the Colonial Currency Board systems this currency-issue is, in practice, ultimately made by the United Kingdom Government, who is thus borrowing the equivalent in claims to United Kingdom goods and services from the colonial populations concerned. Through the indirect arrangements (via the Colonial Currency Boards) for these transactions, and because interest is paid by H.M. Government on these loans, the similarity between the United Kingdom Government's note issue at home and in the colonies is obscured. The problem may be seen more clearly if we were to assume that (as is now being increasingly requested in colonial territories) some locally established institutions were to become the issuing authorities and, according to United Kingdom practice, they were to provide no cover for the issued currencies.

[1] "Sterling Balances and the Colonial Currency System: A comment," Ida Greaves, Economic Journal, December 1953.

[2] "Sterling Balances and the Colonial Currency System (A Note)," A. Hazlewood, Economic Journal, December 1952.

In that case the sterling balances (*i.e.*, the loans to the United Kingdom) now held by the Currency Boards would be taken over by the local issuing authorities, and could be immediately used for purposes such as local investments or as loans to their own Governments. As Miss Greaves indicates, the *individual* holders of local currencies would be in the same position as before; but, as Mr. Hazlewood argues, the respective *communities* would have access to the additional resources, in sterling, set free by this change—or at least to part of them, as some sterling balances will always have to be held for purposes of international trading and payments transactions, including capital movements within the sterling area.

Whether such resources could always be more profitably used by the colonial populations in direct investments in their own territories than they are to-day as interest-bearing loans to the United Kingdom, or whether the Colonial Territories have yet reached the stage when such experiments in fiduciary currencies could be safely undertaken, are entirely different, and much more complex, questions.

B. M. Niculescu

University College of the Gold Coast, Achimota.

Tertiary Production: A Postscript

When one encounters critics such as Mr. Bauer and Mr. Yamey, who have passed from the rejection in 1951 of the thesis that "economic progress is generally associated with . . . a relative increase in the numbers employed in tertiary activities" [1] to the more radical position in 1954 that the tools traditionally available for analysing the problems of change and occupational movements neither require nor are likely to receive any assistance from the classification of economic activity into primary, secondary and tertiary,[2] the most appropriate attitude is perhaps one of regretful silence. We all have our individual preferences in the choice of the concepts that we find useful, and it takes all sorts of economists to make up the world of economic science. We may regret that Mr. Bauer and Mr. Yamey have not found the concept of tertiary production useful, but there is not much that can be done about it.

[1] "Economic Progress and Occupational Distribution," Economic Journal, December 1951, p. 741.

[2] "Further Notes on Economic Progress and Occupational Distribution," Economic Journal, March 1954, pp. 98–100.

Lest, however, some who are not yet well acquainted with the concept and its implications should be unduly discouraged from further investigation by their critical remarks, one or two supplementary observations may be permissible.

Tertiary production has never been offered as in any sense a substitute either for all or for any of the standard tools of economic analysis, " relative factor prices, relative product prices, terms of trade " and the rest of them.[1] All the leading roles in the drama of economic analysis are still reserved for these powerful instruments. The part suggested for tertiary production is much more modest, and on a much lower plane. It is suggested merely as a simple classificatory device, which, at least for some observers, may help in sketching a tolerably clear picture of the extraordinarily complex real world to which the standard tools have to be applied.

The fallacies implied in Mr. Walter Elliot's epigram, now twenty years old, " When you lock us out of the factories, you lock us into the fields," are still powerful forces in moulding public opinion on public policy. It may be that no economist to-day needs any guidance to ensure that he will reject these fallacies, and that the concept of tertiary production is therefore not *necessary* " for driving home the fundamental truth that there is no invariable natural ' balance ' between types of production." [2] Public opinion in general, however, is certainly not so enlightened, and the attention so far given to the concept of tertiary production has not been so intensive as to necessitate the rejection out of hand of the hope that, if it were more carefully used, it might at least be *useful* as an educational instrument. A perusal of the learned economic journals indeed suggests, at least occasionally, that reflection upon the concept of tertiary production might help to clarify the thinking even of some highly skilled economists.

It is not so long ago that the United States Secretary of Agriculture was much embarrassed by the suggestion that his programme meant that " the marginal farmer should get out of farming and into something else." Reflection upon tertiary production is indeed no guarantee of clear thinking on such problems, but it is interesting, though maybe also idle, to speculate whether the Secretary's advisors might have been more successful in briefing him to deal with such embarrassing questions if they had had a clearer understanding of the significance of tertiary production for the United States economy.

[1] " Further Notes on Economic Progress and Occupational Distribution," ECONOMIC JOURNAL, March 1954, p. 99. [2] *ibid.*, p. 100.

Happily the charge cannot be laid against tertiary production that it is merely " an empty economic box." The main criticism to which it can perhaps be fairly subjected is that the box is so full that, in the effort to get everything into it that should properly go there, some things spill over the sides so that there is some embarrassing ambiguity about their appropriate allocation. Partly with a view to removing this difficulty, it has recently been suggested that some additional partitions should be inserted in the box, and that to tertiary production we should add " quaternary " and " quinary production." [1] The value of such further elaboration has yet to be tested; it would be a matter for satisfaction if it should produce results as illuminating as those which the concept of tertiary production, despite their formal rejection of its usefulness, has elicited from Mr. Bauer and Mr. Yamey.

ALLAN G. B. FISHER

Washington, D.C.

A NOTE ON THE DEFINITION OF NET NATIONAL PRODUCT

THE purpose of this note is to correct small logical errors which are made in current definitions of net national product at factor cost and of gross national income at market prices.

The equations showing the relation between net national product at factor cost and gross national product at market prices and at factor cost are usually set out as follows :

Net national product at factor cost	= Gross national product at market prices	*less* indirect taxes *plus* subsidies	*less* depreciation
	= Gross national product at factor cost		*less* depreciation

For convenience, let us assume that depreciation is calculated at current prices and that the capital stock of the economy has been constant for a long time so that depreciation allowances are equal to the aggregate purchases of equipment for replacement purposes. Now the prices which are used for the purpose of calculating depreciation are current *market* prices of capital goods, *i.e.*, the prices include indirect taxes and exclude subsidies on capital goods bought for replacement. Consequently, in the above equations the indirect taxes on replacement capital goods are deducted twice, and the subsidies are added twice. This

[1] Nelson N. Foote and Paul K. Hatt, " Social Mobility and Economic Advancement," *American Economic Review*, May 1953, pp. 364–7.

double counting can be avoided by valuing depreciation at factor cost, so that :

Corrected net national product at factor cost	=	Gross national product at market prices	*less* indirect taxes *plus* subsidies	*less* depreciation at factor cost
	=	Gross national product at factor cost	*less* depreciation at factor cost	

On the income side, a similar adjustment must be made to obtain the corrected gross national income at market prices.

Corrected gross national income at market prices	=	Gross factor incomes	*plus* indirect taxes on consumption and net capital formation *less* subsidies on consumption and net capital formation

The adjustments suggested above are of little importance in the United Kingdom. The figures for depreciation in the official accounts are derived mainly from the Inland Revenue allowances for taxation. If, however, for some future year the official statisticians present a figure for " true " depreciation at current prices, the allocation of indirect taxes and subsidies should also be attempted. In general, the correction is important where there are large taxes or subsidies on capital goods or when the taxes or subsidies change considerably from year to year.

A. A. WALTERS

Faculty of Commerce and Social Science,
Birmingham.

MR. KALDOR ON INDUSTRIAL FLUCTUATION—A METHODOLOGICAL FOOTNOTE

IN a most interesting recent article Mr. Kaldor presents an extremely clear and definite model of industrial fluctuation,[1] based upon very precise assumptions. I wish, first, to show his assumptions insufficient for an exclusively valid model, second, to indicate certain limitations and certain mathematical inconsistencies in the model itself. To put my basic point in a nutshell, Mr. Kaldor never distinguishes sufficiently in his paper between a *possible* story and a *true* story. I submit, however, that one of the most fundamental principles of scientific business-cycle analysis is that it is never enough merely to show ways in which a cyclical movement *could* occur—granted certain assumptions. The problem is to find out *empirically* and historically which one

[1] N. Kaldor, "The Relation of Economic Growth and Cyclical Fluctuations," ECONOMIC JOURNAL, LXIV, March 1954, p. 53.

of these possible stories has empirically occurred and is most likely to *recur*. A logical model by itself proves nothing unless its assumptions are so broad and so exclusive *a priori* that no other explanation is possible. The question I wish to ask here is : Are Mr. Kaldor's assumptions of this conclusive character ?

A key statement of his article is found on page 54 :

> " For the current rate of profit per unit of capital (or rather per unit of investment) *clearly* (italics added) depends on the current relation of output to capital (at any rate if, as a first approximation, profit per unit of output can be taken as given) so that the rate of investment will increase with a rise in output and/or a diminution in the existing stock of capital and *vice versa*."

On p. 63, however, Mr. Kaldor states :

> " It is possible to introduce endless complications into the model which would tone down its sharp edges and crudities—as, *e.g.*, that investment is influenced by finance, monetary policy or rising production costs, etc. ; that new inventions take the form (in part) of the creation of new industries satisfying new " wants " which would explain why some investments would go on even during a depression, etc.—though it is doubtful whether *in our present state of knowledge* the laborious task of working out the consequences on the model of any particular type of complication would be really worth while " (italics added).

Mr. Kaldor's modifications are of particular interest to the present writer. For in my *Economics of Disturbance*, published in 1947, I presented models quite similar to those shown by Domar, Kaldor and others, and indicated the fascinating possibilities implicit in the analysis.[1] Why did I not carry them further ? The trouble was that similar modifications to those which Kaldor now most correctly details, in the second quotation here given, did not, it seemed to me, merely " tone down the sharp edges and crudities " of the model—they destroyed its *a priori* necessity.

Take first a logical weakness of Mr. Kaldor's model. He assumes, in effect (p. 58), that his business-men are always 20% wrong in their estimates. And that though this constantly recurs, and there are *no* other disturbances, they never *think* to revise calculations or space out orders. This is assuming automatons not men. Schumpeter used to point out to me that the reason a cycle would not survive in an otherwise stationary state

[1] D. McCord Wright, *Economics of Disturbance* (New York : Macmillan, 1947), especially Chapter VI.

was because business-men would *revise* their plans and expectations so as to eliminate it (assuming no new disturbing forces to obtrude). Mr. Kaldor gets his cycle by depriving his business-men of the faculty of self-criticism.

Equally unreal must be the assumption needed to build up (under the case of a fixed service-life) his five-year boom, five-year slump cycle (pp. 58, 59). This involves the problems of pace plus the age composition of the desired capital stock discussed in Chapter VI of my *Economics of Disturbance*. To get his cycle, his business-men would have to stop after the first five years, and wait five years before starting again, though the total desired shipping park is 15 million tons—not five. Why?

But worse yet his selected service-life of twenty-five years will not give the cycle he describes (p. 58). If the replacement "echo" is allowed for (as must be done if we follow Kaldor's own initial assumption of a *rigidly* determined service-life, p. 59) the cycle, once the initial stock is built up, would have booms of alternate lengths—ten years, five years, ten years, five years, with regular five-year slumps between them.

True, had Mr. Kaldor assumed a service-life of *thirty* years his model would have been consistent. But this involves assuming further unreality, namely, that the service-life should *chance* to be exactly, in each case, the one mathematically consistent (given the "capacity" of the investment industries) to produce a regular cycle. Of course, Mr. Kaldor later drops the assumption of fixed service-life and if we do this we can drop the "echo." But even so, most of his abstractions and their paradoxes remain.

Thus even if amended to take care of internal inconsistency, the methodological inadequacy of the Kaldor–Domar approach is easily indicated. One selects certain favorable assumptions. One omits all rival accounts, and on this highly selective basis one produces a most persuasive story. But where is reality? It is not my purpose here to repeat the theory of economic growth and the cyclical models developed in my *Capitalism* (published 1951), in which Mr. Kaldor's assumptions, especially those regarding the relation of investment to the capital stock, are explicitly disintegrated.[1] Suffice it to say that by the same selective method which he follows many equally plausible tales could be told. Known facts can be explained by dozens of models. If we are simply to dismiss all alternative models by reference to the "present state of knowledge," we may equally well dismiss Mr. Kaldor's. It is not enough to prove the *exclusive* validity of a theory that all the phenomena follow. Much more practical and pragmatic research and demonstration is needed.

[1] D. McCord Wright, *Capitalism* (New York: McGraw-Hill, 1951), especially Chapter V.

DAVID MCCORD WRIGHT

Christ Church, Oxford,
and
The University of Virginia.

THE SIZE OF THE FACTORY: A REPLY

READERS of the ECONOMIC JOURNAL must all be grateful to Mr. G. R. Allen for drawing attention, in the issue of December 1953, to the official Swedish statistics allowing measurement of the trend in sizes of factory. The Swedish data are certainly fuller and more continuous than those of most European countries; but their very fullness allows of a more accurate measure of factory sizes than the mere number of workers per factory which Mr. Allen uses. Though usually number of workers, as I have said elsewhere,[1] "is the least objectionable of the indices made possible by official censuses" it must not be forgotten that the real point at issue is the scale of output and that this depends not only on number of wage-earners (workers, or "operatives"), but also on number of salary-earners (or staff) and on capital equipment. With the rapidly increasing ratio of staff to operatives observed in industrialised countries and the increasing intensity of capital, these elements in scale of output can no longer be neglected. Fortunately, the Swedish Census provides the required data for the salary-earners and gives in its horse-power ratings some index of capitalisation.

Mr. Allen finds that Swedish experience bears out Professor Jewkes' conclusion that "there is no general tendency for the average size of the factory to increase." Let us accept Mr. Allen's figures of the average number of workers for all factories where more than ten workers are employed (ECONOMIC JOURNAL, Vol. LXIII, p. 915), but add the percentage which staff form of those workers, and the average horse-power per worker. These ratios are not available separately for different sizes of factories, but can be obtained for all sizes. More recent figures and ratios can now be given, with cautions (duly footnoted) on account of a change between 1945 and 1946 in the scope of the Census.

[1] *Investment, Location and Size of Plant*, 1948, p. 13.

Sweden

	Average number of workers (in factories employing over ten).	Staff as a percentage of workers (all sizes of factory).	Horse-power of equipment per worker (all sizes of factory).
1925	72·8	10·2	3·91
1930	72·4	11·3	4·30
1935	68·4	13·0	4·97
1940	72·9	15·0	5·52
1945	69·6	18·7	5·92
1946	[1]	19·5 [2]	5·90 [2]
1950	69·9	22·4 [2]	7·10 [2]

[1] Not available. [2] Factories employing five or more workers only.

The numbers of wage-earners in the average of Swedish factories have remained fairly constant throughout the last quarter-century, but not so the horse-power or the staff: capital reckoned by horse-power has increased over 75%; staff at least 100%. What these increases represent in increase of physical volume of (net) output per factory—the real point at issue—could, in a short note, only be assessed seemingly arbitrarily.[1]

Some countries, however, do venture to publish data on which to base volume of production per establishment from time to time, and Professor Jewkes, in his article in the ECONOMIC JOURNAL for June 1952, has very usefully summarised results for the United States, Canada, Germany and Australia. The average United States factory is shown to have increased its volume of production from the first three years quoted (1914–21) to that of the last three (1935–39) by 66%, and I cannot understand why in the light of his own table (p. 240) Professor Jewkes concludes that here the average overall size of factory had not grown.[2] In Canada by the same fair three-year test the index of volume of production per establishment rose from 1922–25 to 1937–39 by 22%. In Australia, again by the same test, the index rose from 1913–23 to 1935–38 by 45%. In Germany only four separate years—1895, 1907, 1925 and 1933—could be quoted. In the last of these years

[1] The next footnote points toward a possible empirical basis for such an assessment.

[2] In making this statement about the United States factories, Professor Jewkes may have been looking only at the first column of his own table, giving wage-earners per establishment. The divergence of the trend in this column and in the volume-of-output-per-establishment column can be explained by the same additions of staff and horse-power figures made for Sweden. The following table gives United States data for the years in which they were available. Figures in the first and fourth columns are copied from the diverging first and third columns of Professor Jewkes' table; the second and third columns are the "missing links"

the volume of output per establishment was 28% above that of the first year; the volume of the last two years was 10% above the first two.

In Great Britain the Census authorities do not venture toward any index of volume of production per establishment. They have, alas, seen fit to abandon the measure of horse-power, though sensibly they include staff with operatives in classifying factories into sizes. We are left, then, with average persons employed per establishment as an index of trends in its size. Professor Jewkes shows that on this test the average size of factories employing over 10 has grown between 1935 and 1949 from 105·4 to 126·1. But he contends that since "in the former year there were some 600,000 more workers unemployed in the factory trades than in the latter," an adjustment must be made. "If these 600,000 workers had, in fact, been employed in 1935 in the existing factories, this would have increased the average size of factory in 1935 by about 12%."

This adjustment must be characterised as crude. It entirely neglects the possibility, nay the probability, that as well as the numbers employed, the numbers of factories will diminish in a slump. The American Censuses were taken biennially during the 1929–37 depression, and are illuminating. Professor Jewkes himself gives in his Table I (*op. cit.*, p. 240) the averages of wage-earners per establishment: 40·5 in 1929, 35·9 in 1931, 41·5 in 1933, 42·9 in 1935, 51·4 in 1937. Clearly the years of recovery from slump, such as 1935 in both America and Britain, were not necessarily marked by a figure of wage-earners per establishment low compared to boom years. On the contrary, though the onset of a slump (when many wage-earners are laid off, but the original number of establishments has not fallen proportionately) showed a fall in the numbers per establishment; later in the depression a greater proportion of factories go out of existence which are not replaced by others. The number of establishments in the United States

(growth in staff and horse-power per wage-earner) helping to explain the outpacing of wage-earners by output per establishment.

U.S.A.

	Wage-earners per establishment.	Staff as a percentage of wage-earners.	Horse-power per wage-earner.	Volume of production per establishment.
1914	37·3	13·6	3·21	100
1919	40·1	17·0	3·24	104
1929	40·5	16·2	4·86	154
1939	42·8	20·0	6·42	166

fell from 171 thousand in 1931 to 139 thousand in 1933; but number of wage-earners fell only from 6,163 to 5,788 thousand, thus bringing up the average of wage-earners per factory. It is quite possible that in 1935 the American (and British) factories which remained were from the *trend* point of view cyclically over-sized in operatives, not, as Professor Jewkes assumes, under-sized, and that the upward trend in persons per establishment 1935–47 may have been greater, not less, than appears superficially. Incidentally, a more meaningful measure of size than the crude arithmetic average discussed hitherto is the median—the size of factory above and below which an equal number of persons are employed. In my *Logic of British and American Industry* (p. 34) I give the 1935 median size in the United Kingdom as 235 persons per establishment of all sizes. A similar calculation, based on the 1949 Census of Production (*Summary Tables*, p. 33) makes the median number of persons as high as 295.

I hope I shall not be accused of neglecting the formidable forces that tend to variegate the sizes of factory and to keep the average down, instances of which Professor Jewkes and many other economists are fond of putting forward. What I am anxious to point out is that *in spite of* the strength of those forces, the existence of which I do not deny, average size of factory is in fact slowly creeping up almost everywhere. The overall balance of forces seems in favour of growth in size, and it is an explanation of this actual trend that economists should seek, rather than attempt to find reasons for what is not really happening. Throughout this note I have been discussing technical units—plants or factories, not firms—so that familiar theories of large-scale economies in marketing and finance, or of the strategies of monopoly, are not too relevant. The still more familiar theory we are left with is that of the increased cost of larger-scale management, but whatever strength this theory has tells against the trend which the facts would seem to establish. Should not the assumed strength of familiar theories be re-examined, and others perhaps given more weight?

P. SARGANT FLORENCE

The University,
Birmingham.

CURRENT TOPICS

THE Annual Meeting of the Royal Economic Society was held at the London School of Economics on Thursday, June 24, 1954. Professor Lionel Robbins was elected to the office of President in succession to Lord Brand. Mr. A. D. Marris was elected Treasurer in succession to Mr. H. C. B. Mynors, who had resigned the office on his appointment as Deputy-Governor of the Bank of England.

THE Secretary reported on the membership and finances as follows:

	1953.	1952.	1939.	1914.
New Fellows and Library Members elected	543	404	490	50
Fellows lost by death, resignation or default	289	309	496	33
Number of Fellows and Library Members on December 31	6286	6032	4572	694
Total Compounders included in above total	2118	2091	1155	159
Surplus or Deficit of Income over Expenditure, together with receipts from Compounders	−£247	−£270	£329	£278

AFTER the conclusion of the formal business there was a discussion of "The Problems of the Social Services." It was opened by Lord Beveridge, who had lately returned from the United States and emphasised the remarkable growth and widespread acceptance of social services of certain kinds in that country. He was glad that the British social services were being thoroughly investigated by the Guillebaud and Phillips Committees and by the Government Actuary. He was convinced that the right basis for them was insurance. He was concerned at the inadequacy of rates of benefit now provided and the increasing number of pensioners who had to have recourse to public assistance. But he was most anxious that the state services should be a minimum-subsistence basis, to which individuals would add by their own efforts.

Mr. Colin Clark argued that expenditure on the social services was involving the nation both in much too high a level of taxation and in a centralisation of administration and a control of it by Parliament and the Civil Service which was in his view very undesirable. He was anxious to see a reversal of present trends and the administration of services wherever possible by non-governmental bodies. He was pessimistic about the increase of

national income, and feared that all the increase would be absorbed in raising services and none be available to reward extra effort.

Mr. A. T. Peacock compared the national expenditure in some of the social fields with that before the war, and showed that the increase, though considerable, was not wholly disproportionate to the growth of national income. He attempted a forecast of the level of expenditure at 1982. He predicted appreciable increases of expenditure on health, on the basis of present standards, but no very considerable increase on education and a decline of expenditure on housing after some ten years of further building at present rates. If national income continued to grow at 1½% per annum he did not think that the social services would confront us with grave problems. These would be the consequence, rather, of increases of standards above those now prevailing.

Mr. S. P. Chambers disagreed with a suggestion of Mr. Clark that the state could divest itself of responsibility for certain minimum standards. He argued that the state had long accepted this responsibility, and a democratic country could not go back on it. He suggested, however, that the finance of social services derived from compulsory contributions, which were in effect taxation, and that the ordinary criteria of equity required that the expenditure should be met from general taxation on a proportional or progressive basis rather than from a regressive tax.

In the subsequent discussion Professor Titmuss emphasised the immense importance both in the United States and in the United Kingdom of voluntary pension schemes, which were growing very fast, were now much more important than the state scheme and which disposed of very large investible funds.

AMONG the awards for research announced by the Leverhulme Trustees is the following:

Fellowship: J. C. R. Dow, Senior Economic Adviser, H.M. Treasury, for the study of the behaviour of the British economy, 1945–54.

Houblon-Norman Fund. The Trustees of the Houblon-Norman Fund, on the recommendation of their Advisory Committee, have made the following awards for 1954–55:

Fellowship

Mrs. A. M. Millard, Lecturer, Battersea Training College.	London's Imports 1600–1640.

Research Grants

Mr. G. Clayton, Lecturer, University of Liverpool.	The Present Organisation and Structure of the Swedish Banking System.
Mr. R. E. George, Statistical and Administrative Assistant, South Western Gas Board.	Economic Policy in the Gas Industry before Nationalisation.
Mr. N. J. Gibson, Research Student, The Queen's University of Belfast.	Banking in Ireland.
Mr. D. M. Joslin, Fellow of Pembroke College, Cambridge.	Eighteenth Century London Banking 1720–1826.
Miss S. M. Knight, Research Assistant.	The Structure and Problems of Banking in Belgium.
Miss D. M. Knox, History Mistress, Ursuline Convent, Brentwood.	London Brewing Trade 1830–1914.
Mr. R. V. Lennard, Historian. (Renewal.)	Rural England in the Feudal Age.
Mr. F. J. Parker, Midland Bank, Ltd.	Banking in Hertfordshire.
Professor J. H. B. Tew, Professor of Economics, Nottingham University.	Institutional Finance of British Industry.
Mr. L. Wilks, Chase National Bank of the City of New York.	Economic Consequences of the Growth of Pension Schemes and Superannuation Funds.
Mr. T. Wilson, Fellow of University College, Oxford. (Renewal.)	Economic Fluctuations in the United Kingdom between 1923 and 1938.

An offer of awards for 1955–56 will be made in due course. Further information may be obtained from the Secretary, Houblon-Norman Fund, c/o Bank of England, London, E.C.2.

THE following have compounded for life fellowship of the Royal Economic Society:

Chhotabhai, P. M.	Hollinshead, E.	Ruparell, R. H.
Corea, G.	Li, S. Y.	Segal, H. H.
De Pous, Dr. J. W.	Parkinson, J. R.	Talwar, O.
Everett, S. J.	Ruparell, B. N.	

The following have been admitted to fellowship of the Society:

Abai, N. A.	Baragwanath, L. E.	Ch'ing-hsi, W.
Abbott, G. F.	Bau, J. J. W.	Chopra, N. T. S.
Abidi, J.	Bhatnagar, M. P.	Clifton, M.
Adelekun, A. O.	Bowland, G.	Coney, N. M.
Agbim, N.	Brockley, F. N.	Cooper, J. J.
Ali, M. G.	Brown, R. C.	Creswell, C. E.
Andrews, M. C.	Burnett, C.	Cuffe, W. E.
Armstrong, W. E.	Chan, K. K.	Darko, W. A.
Aubrey, H. G.	Chaturvedi, A. P.	Davidson, J. C.
Bailey, I.	Cheng, Y. S.	Davison, R. B.

Dayamani, M.
Delacour, A. W.
Deshpande, Prof. N. M.
Donaldson, Mrs. A.
Doox, J.
Drummond, S. H.
Dunn, F. M.
Egan, Mrs. L. C. B.
Ehara, Prof. M.
Egras, I. H.
Falck, M. A. de R.
Fink, D. A.
Firth, G. C.
Freer, E. R.
Frost, J. J.
Galbraith, J. P. R.
Gaskin, M.
Gbadamosi-Otiti, A. O.
Grasberg, E.
Grayevsky, S.
Greatrix, S. C.
Griggs, R. L.
Groome, H. S.
Gross, B. M.
Groves, K. W.
Haasbroek, M. S.
Hallikeri, R. K.
Hamid, Z. A.
Hardman, D. J.
Hare, L.
Hartle, D. G.
Haselden, J. L.
Hatton, W. J.
Hayward, L. H.
Heap, T.
Hellewell, E.
Hey, L.
Hinchcliffe, A. J.
Hogg, V. W.
Holden, R.
Holliday, F. A.
Hooker, Prof. J. J.
Hsu, T. K.
Husain, S. S.
Ibrahim, M. H.
Ighodalo, J.
Ilahi, N.
Iyer, G. K. R.
Jablanowski, Dr. M. J.
Jackson, E. N. S.
Johnson, G. F.
Jones, I. P.
Jones, L.
Jones, T. O.
Josh, J. L.
Joti, S. C.
Jury, H. L.
Kadoor, S.
Khokhar, M. H.
King, E. B.
King, J. C.
Klein, T. M.
Koppman, D.
Kreukniet, Prof. R. B.
Krishnamurti, M. S.
Lambert, F.
Leddy, F. N.
Lee, S. Y.
Lennard, A. R.
Leong, C. S.
Loh, C. L.
Longhurst, P. G.
Longworth, W. W.
MacWinkle, N. C.
Madubuko, A. B. C.
Main, W.
Malaher, W. G.
Marsden, B.
Martins, Prof. C. M.
Matthews, I.
Mattock, M.
Meaney, P. M.
Measures, F. E.
Mendy, P. L.
Menz, W. J.
Mills, F. D.
Mitchell, T.
Nedivi, U. I.
Niamatullah, Md.
Nixon, E. H.
Nti, A. K.
Ogbalu, F. C.
O'Malley, T. A.
Palmer, G. F. D.
Pandian, S. R.
Parsons, D. J.
Pasco, C.
Patel, H. M.
Patel, V. A.
Pepinster, J. D. A.
Phillips, A.
Pillai, A. N.
Polanski, A. N.
Prabhu, B. S.
Ramamurthy, S.
Rathinam, C.
Richardson, R. W.
Robinson, G. E.
Rothbard, M. N.
Routh, Dr. G.
Rugina, Prof. A. N.
Russell, E. W.
Russell, J. S.
Samuel, A. C.
Sastry, S. N.
Serafy, S. E. D.
Shawkat, S. S.
Sheth, S. K.
Shrewsbury, M. B.
Simpson, C. M.
Singh, M.
Sivaswamy, P. S.
Slasor, G.
Smith, B.
Smith, J. D.
Speller, A. K.
Stankiewicz, W. J.
Stocker, G. G. L.
Swe, M.
Tan, C. K.
Tan, S. C.
Taylor, Dr. H. J.
Telang, K. M.
Thacker, L. J.
Thomas, P. A. G.
Turner, E.
Van Zeyl, L.
Walsh, P.
Weld, E. A. Jr.
Wolfe, J. N.
Yeap, S. K.

The following have been admitted to Library membership of the Society :

Administrative Staff College, Henley-on-Thames.
Bolton Training College.
Cembureau, Malmo.
Idaho State College
Oficina de Estudios Economicos, Madrid.

THE Secretary regrets to announce that, owing to an unexpected increase in the cost of producing this volume, it has been neccessary to raise the price of Volume III of *Jeremy Bentham's Economic Writings* to 30*s*.

RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society

VOL. 117, PART I, 1954. *Statistics of Statutory Marketing in West Africa, 1939–51:* P. T. BAUER. *An Essay on the Mathematical Theory of Freedom:* D. and A. GABOR. *Length of Life of Musicians:* M. DA S. RODRIGUES. *International Statistical Institute, 28th Session, Rome 1953. Regional Economic Statistics:* K. S. LOMAX.

Economica

VOL. XXI, NO. 82, MAY 1954. *The Colombo Plan:* F. BENHAM. *Dichotomies of the Pricing Process in Economic Theory:* D. PATINKIN. *The Lancashire Bill System and its Liverpool Protagonists, 1810–1827:* S. G. CHECKLAND. *The Historist Reaction in English Political Economy, 1870–1890:* A. W. COATS. *Robbins on Robertson on Utility:* J. R. HICKS.

Oxford Economic Papers

VOL. 6, NO. 2, JUNE 1954. *Variations in the Rate of Economic Growth in the U.S.A., 1869–1939:* B. WEBER and S. J. HANDFIELD-JONES. *An Interpretation of Economic Backwardness:* H. MYINT. *Reconsideration of a Group Welfare Index: A Rejoinder on Marginal Preference:* J. ROTHENBERG. *The Macmillan Gap 1931–53:* R. FROST.

Bulletin of the Oxford University Institute of Statistics

VOL. 16, NO. 2–3, FEBRUARY & MARCH 1954. *Earnings in the Boot and Shoe Industry:* K. G. J. C. KNOWLES and M. VERRY. *The Reform of E.P.U.:* J. R. SARGENT. *East–West Trade:* A. MADDISON.

The Journal of Industrial Economics

VOL. II, NO. 2, APRIL 1954. *A Note on Stocks:* SIR HENRY CLAY. *Early Days in Schumania:* J. DRISCOLL. *Organization and Efficiency of the House-Building Industry in England and Wales:* P. A. STONE and W. J. REINERS. *Track Costs and Motor Taxation:* A. A. WALTERS. *The Effects of Requirements Contracts on Competition:* G. SHILLINGLAW.

The Manchester School of Economic and Social Studies

VOL. XXII, NO. 2, MAY 1954. *The Rate of Interest—British Opinion in the Eighteenth Century:* J. M. LOW. *Economic Development with Unlimited Supplies of Labour:* W. A. LEWIS. *Labour and the Development of the Public Corporation:* G. N. OSTERGAARD.

Economic History Review

VOL. VI, NO. 3, APRIL 1954. *Industrial Growth in the Middle Ages: The Cloth Industry in Flanders:* H. VAN WERVEKE. *Prices, Wages and Popular Movements in Paris during the French Revolution:* G. E. RUDÉ. *Blackwell Hall Factors, 1795–1799:* C. GILL. *The Sheepfold in Wiltshire and the Floating of the Watermeadows:* E. KERRIDGE. *Some Influences Affecting the Development of Sanitary Legislation in England:* B. KEITH-LUCAS.

The British Journal of Sociology

VOL. V, NO. 2, JUNE 1954. *The Incest Taboo in Relation to Social Structure and the Socialization of the Child:* TALCOTT PARSONS. *Notes on Comparative Economics:* F. STEINER. *Measuring Poverty:* P. TOWNSEND.

Palæolithic Religion and the Principle of Social Evolution: F. D. KLINGENDER. *Prestige Ranking of Occupations in an American City with Reference to Hall's and Jones' Study:* J. B. MONTAGUE and B. PUSTILNIK. *The Employment of Sociologists:* J. A. BANKS.

The Sociological Review

VOL. XLIV, SECTION 6, 1952. *Is There a National Neurosis?:* M. MACKENZIE.

VOL. XLIV, SECTION 7, 1952. *Physical Principles in Human Co-operation:* V. DANIEL.

International Affairs

VOL. XXX, NO. 2, APRIL 1954. *The Problem of Convertibility for Western Europe:* P. JACOBSSON. *France's Political and Economic Problems:* A. PINAY. *Yugoslavia on her Way towards a Socialist Democracy:* V. VELEBIT. *Canadian Nationalism: an historical approach:* G. W. BROWN. *The International Civil Service: basic problems and contemporary difficulties:* F. HONIG. *The End of Empire: another view:* K. ROBINSON.

VOL. XXX, NO. 3, JULY 1954. *The Shaikhdom of Kuwait:* E. MONROE. *Scandinavian Co-operation in International Affairs:* H. LANGE. *Western Enterprise in the Far East:* G. C. ALLEN. *The Conflict of Culture in Africa:* P. ABRAHAMS. *Korea—the Next Stage:* SIR A. RUCKER. *Sudanese Self-Government:* P. B. BROADBENT. *Government and Politics in Puerto Rico:* J. DE GALINDEZ. *General International Law and the United Nations Charter:* A. VERDROSS.

The Political Quarterly

VOL. XXV, NO. 3, JULY–SEPTEMBER 1954. *Notes and Comments: the Future of the Labour Party. What Prospect for the Labour Party?:* D. CHAPMAN. *America and Russia:* E. WRIGHT. *The European Inheritance:* N. ANNAN. *The Kashmir Deadlock:* C. H. ALEXANDROWICZ. *Local Government: Reorganisation or Reform:* H. MADDICK. *Constitutional Reform in France:* B. MIRKINE-GUETZÉVITCH.

Soviet Studies

VOL. VI, NO. 1, JULY 1954. *Soviet Housing: Some Town Planning Problems:* A. BLOCK. *The Amalgamation of Collective Farms: Some Technical Aspects:* R. E. F. SMITH. *Soviet Law and Soviet Society:* R. SCHLESINGER. *The U.S.S.R. after the Death of Stalin:* A. NOVE.

Accounting Research

VOL. 5, NO. 2, APRIL 1954. *Some Problems of Inter-Plant Cost Comparisons:* W. F. LUTTRELL. *Contemporary Concepts of Business Net Income—the Shares of Capital and Labour, and the Influence of Public Opinion:* J. D. EDWARDS. *Accounting Dynamics:* F. SEWELL BRAY. *Facts about Direct Costing for Profit Determination:* G. AMERMAN. *Estate Duty and Private Companies:* A. R. ILERSIC.

The Incorporated Statistician

VOL. 5, NO. 1, MARCH 1954. *National Income Statistics: Are they Accurate or Useful?:* C. T. SAUNDERS. *Social Class in Sample Surveys:* J. S. DOWNHAM. *Difficulties and Dangers in Statistics in Industry:* C. D. HUGHES.

The Banker

VOL. CII, NO. 340, MAY 1954. *Tax Relief: the Long-run Prospect. Economy Set Fair? Hope for No Par Value?:* H. WINCOTT. *Is Gold Staging a Come-back? South Africa and the London Gold Market:* C. G. TETHER. *Will America Ease its Gold Regulations?:* H. BRATTER. *Financing Private Building:* O. R. HOBSON. *Credit Expansion in Scotland:* F. S. TAYLOR. *A Hundred Years of the Chartered:* G. TYSON.

VOL. CII, NO. 341, JUNE 1954. *Bank Rate and Foreign Funds. Last Year of E.P.U.? Tackling Europe's Export Subsidies. The Economics of Dependency:* L. T. LITTLE. *Switzerland's Surplus of Capital. The Long-term Gap in Raw Material Supply:* E. H. STERN. *The Inimitable Bank-note:* M. WEEKLEY.

The Bankers' Magazine

NO. 1322, MAY 1954. *The Retiring Editor. Economic and Financial Resources Budgeting:* H. C. HILLMANN. *Balance of Payments 1953–1954. Sterling Redivivus:* H. E. EVITT. *Banking in Ethiopia.*

NO. 1323, JUNE 1954. *A Credit Experiment. Bank Rate and the Modernisation of Industry:* G. L. S. SHACKLE. *A Check in Trustee Expansion? The Pursuit of Debtors:* D. G. ANTONIO. *Recent Legal Decisions of Interest to Bankers.*

Barclays Bank Review

VOL. XXIX, NO. 2, MAY 1954. *The Schuman Plan Today. Colonial Sterling Balances. The Canadian Seaway Project.*

District Bank Review

NO. 110, JUNE 1954. *Cotton Today:* W. G. PILKINGTON. *Newer British Industries and Increasing Productivity:* J. H. DUNNING. *The Battle for £6,000 millions.*

National Provincial Bank Review

NO. 26, MAY 1954. *Trade Unions and National Prosperity:* T. O'BRIEN. *Post-war Economic Developments in Belgium:* L. CAMU.

The Three Banks Review

NO. 22, JUNE 1954. *Canada—a Lost Opportunity?:* H. G. JOHNSON. *The London Bankers' Clearing House. London Agent.*

Westminster Bank Review

MAY 1954. *What Sort of Exchange Rates?:* W. M. SCAMMELL. *Problems of Commonwealth Economic Development:* J. S. G. WILSON. *Room for Manœuvre. Initial Difficulties. The Taxpayers' Gamble on the Agricultural Market:* H. FRANKEL.

Journal of the Institute of Transport

VOL. 25, NO. 10, MAY 1954. *Continental Traffic—a Look Forward:* L. H. K. NEIL. *Economic Aspects of Modern Air Transport:* M. H. CURTIS. *The Work of the Railway Inspectorate:* C. A. LANGLEY. *Transport Co-ordination in Switzerland:* F. H. CONWAY.

Planning

VOL. XX, NO. 362, APRIL 1954. *World Population and Resources.*
VOL. XX, NO. 363, MAY 1954. *Private Capital for Under-developed Areas.*
VOL. XX, NO. 364, MAY 1954. *Providing for Pensions.*
VOL. XX, NO. 365, MAY 1954. *Graduate Wives' Tales.*

Town and Country Planning

VOL. XXIII, NO. 121, MAY 1954. *Slums, Redevelopment and Planning. The 1954 Planning Bill:* D. HEAP. *The New Bill Debated. Planning in the Gold Coast:* A. E. S. ALCOCK. *Changing Living Habits. Shopping Centres: Some Factors in Design: I:* W. BURNS. *Problems of Rural Wales: I:* A. E. TELLING. *Who Should Plan the Parishes?:* A. B. HUDSON. *Reconstruction of Stalingrad:* N. CHUMAKOV.

VOL. XXIII, NO. 122, JUNE 1954. *Skyscraper Housing:* F. J. OSBORN. *The Exmoor National Park:* J. D. U. WARD. *Planning in East Africa:* H. KENDALL. *A "Broad-Acre" Project:* P. J. HENKEN. *Problems of Rural Wales: II:* A. E. TELLING. *Social Contracts:* W. G. S. CROOK. *Shopping Centres: Some Factors in Design: II:* W. BURNS.

VOL. XXIII, NO. 123, JULY 1954. *The Waste of National Capital:* F. J. OSBORN. *The Dales National Park:* R. H. WADE. *Land for the Railways:* G. D. M. BLOCK. *Park Forest, Illinois:* C. F. SWEET. *Electricity in Country Areas:* C. T. MELLING. *Coal and Planning:* N. PEARSON. *A French View of American Planning:* M. OSBORN. *Budapest to be Remodelled:* L. KIRWAIN. *Heavy Timber:* J. D. U. WARD.

Cartel

VOL. 4, NO. 2, APRIL 1954. *The Future of Resale Price Maintenance:* C. A. R. CROSLAND. *The German Restraint of Competition Bill:* T. KUHR. *Cartel Regulation—the Dutch Middle Way:* J. F. VAN NETTEN.

Progress

VOL. 43, NO. 242, SPRING 1954. *The Part Business has played in the Development of Modern Africa:* LORD MILVERTON. *The Financing of the Recovery of West Germany's Economy:* K. BLESSING. *The Baltic Exchange:* N. DAVENPORT. *James Spedding, Colonial Administrator and Scholar:* SIR ARNOLD PLANT. *The New Towns have their Problems:* N. TWEDDELL. *Fourteen Years without a Name:* C. J. VAN DEN BERGH.

Hard Fibres

NO. 12, MARCH 1954. *World Fibre Position—Forecast for 1954. World Situation. Hard Fibre Balance in 1954. Self-Generating or Self-Correcting?*

The Canadian Journal of Economics and Political Science

VOL. 20, NO. 2, MAY 1954. *Labour Problems of an Expanding Economy:* S. JAMIESON. *A Revised Classification of Forms of Competition:* C. M. BIRCH. *The British Election of 1874:* H. W. MCCREADY. *Anarchism and Individual Terrorism:* D. NOVAK. *Plato and Popper:* G. P. GRANT. *British Monopoly Legislation in Practice:* P. H. GUÉNAULT and J. M. JACKSON. *Canadian Post-War Monetary Policy, 1946–52:* R. C. MCIVOR and J. H. PANABAKER.

The South African Journal of Economics

VOL. 22, NO. 1, MARCH 1954. *Special Coming of Age Issue—21 Years in Retrospect.*

The Indian Economic Review

VOL. II, NO. 1, FEBRUARY 1954. *Monopsony and the Consumer Interest:* M. BRONFENBRENNER. *Recent Trends in the Managerial, Administrative and Financial Integration of Industrial Enterprises in India:* M. M. MEHTA. *Foundation Day Address:* J. MATTHAI. *Japanese Terms of Trade, 1921–34:* V. K. RAMASWAMI. *Industrial Awards in India:* B. N. DATAR and S. MONGIA.

Tata Quarterly

VOL. IX, NO. 2, APRIL 1954. *The Reorganization of States. Economic and Financial Review, January–March 1954.*

International Labour Review

VOL. LXIX, NO. 3, MARCH 1954. *Conditions of Employment in International Civil Aviation:* J. SCHENKMAN. *Juvenile Employment in Latin America:* A. TARRE MURZI. *The Management of Economic Undertakings by the Workers in Yugoslavia:* R. UVALIĆ.

VOL. LXIX, NO. 4, APRIL 1954. *The Protection of Employees on the Termination of Contracts of Employment:* E. HERZ. *Investment, Welfare and Employment:* A. SAUVY. *Women Workers and Home Responsibilities:* M. BAERS. *The Weekly Rest of Shop Assistants in France:* J. DE BONNAFOS.

VOL. LXIX, NO. 5, MAY 1954. *The Asian Regional Conference. Cultural Factors in Economic and Social Change:* E. BEAGLEHOLE. *Wages in Burma:* J. H. RICHARDSON. *Rural Development in India:* S. S. DYAMI.

International Financial Statistics

VOL. VII, NO. 4, APRIL 1954. *Changes in Money Supply.*

VOL. VII, NO. 5, MAY 1954. *Gold and Foreign Exchange in 1953. Balance of Payments of the United Kingdom, 1950–53.*

VOL. VII, NO. 6, JUNE 1954. *Real Prices of Major World Trade Commodities.*

United Nations Economic Bulletin for Europe

VOL. 6, NO. 1, FOURTH QUARTER 1953. *Europe's Trade in Agricultural Products.*

Public Finance

VOL. IX, NO. 1, 1954. *Finance and the Business Cycle:* H. GUITTON. *Valuations of Property for Taxation:* C. LOWELL HARRISS. *Belgian Post-war Budgetary and Financial Policy:* M. H. D'HAEZE. *Public Finance of Hawaii:* R. KAMINS. *The Tax System of the Byzantines:* J. ZERVAS.

Kyklos

VOL. VI, NO. 4, 1954. *Ideas—Their Migration in Space and Transmittal over Time:* F. REDLICH. *Gesamtwirtschaftliche Abstimmungsprobleme im Zusammenhang mit der Kapitalbildung:* H. HALLER. *Inter-ethnic Tensions and Their Mediation: a Strategy for a Research Campaign:* A. R. GILBERT. *Note sur l'orientation des économies agricoles:* T. MUNK. *Economic Planning for Peace:* G. U. PAPI.

Economia Internazionale

VOL. VII, NO. 1, FEBRUARY 1954. *A Geometrical Demonstration of Stability Conditions in International Trade:* A. C. L. DAY. *Domestic Production and Foreign Trade; the American Capital Position Re-examined:* W. LEONTIEF. *A New Look at the Dollar Problem and the U.S. Balance of Payments:* R. NURKSE. *Some Considerations of Triangular Trade as Influenced by Retention Quota Arrangements (Part I):* U. SACCHETTI. *Elasticity Optimism and Pessimism in International Trade:* P. STREETEN.

The American Economic Review

VOL. XLIV, NO. 1, MARCH 1954. *Institutional and Theoretical Implications of Economic Change:* C. B. HOOVER. *Economies of Scale, Concentration and Entry:* J. S. BAIN. *Economic Preconceptions and the Farm Policy:* J. K. GALBRAITH. *Some Questions about Growth Economics:* L. B. YEAGER. *The Dynamics of Investment:* R. W. CLOWER. *Price and Output Determination: Related Products:* M. J. BAILEY. *Exchange Flexibility and the Stability of Sterling:* S. I. KATZ. *What Every Economist should Know about Health and Medicine:* E. GINZBERG.

VOL. XLIV, NO. 2, MAY 1954. *Papers and Proceedings of the Sixty-sixth Annual Meeting of the American Economic Association.*

VOL. XLIV, NO. 3, JUNE 1954. *Recent Changes in Income Inequality:* R. J. LAMPMAN. *The Price Level in Macroeconomic Models:* L. HOUGH. *Excise Taxes: Capitalization-Investment Aspects:* J. A. STOCKFISCH. *The Growth of American Unions:* I. BERNSTEIN. *The Trade Agreements Escape Clause:* I. B. KRAVIS. *Soviet Bloc Currency Conversions:* E. AMES. *Man-power Allocation under British Planning:* S. E. ROLFE. *Economic Effects of French Minimum Wage Law:* H. C. EASTMAN.

The Annals of the American Academy of Political and Social Science

VOL. 292, MARCH 1954. *Bureaucracy and Democratic Government.*

VOL. 293, MAY 1954. *Prisons in Transformation.*

The Quarterly Journal of Economics

VOL. LXVIII, NO. 2, MAY 1954. *Recent Developments in Economics:* F. ZEUTHEN. *Thoughts on Meeting some Important Persons:* SIR DENNIS ROBERTSON. *The Balanced Budget:* J. BURKHEAD. *Some Economic Aspects of Fissionable Material:* S. ENKE. *On the Concept of Social Welfare:* A. BERGSON. *Critical Notes on the Acceleration Principle:* H. NEISSER. *Adam Smith and the Human Stomach:* J. S. DAVIS. *The Shoe Machinery Case and the Problem of the Good Trust:* L. S. KEYES. *Location Theory and Trade Theory: A Short-Run Analysis:* W. ISARD.

The Journal of Political Economy

VOL. LXII, NO. 2, APRIL 1954. *The Early History of Empirical Studies of Consumer Behavior:* G. J. STIGLER. *Social Choice, Democracy, and Free Markets:* J. M. BUCHANAN. *The Economic Theory of a Common-Property Resource: the Fishery:* H. SCOTT GORDON. *Two Concepts of External Economies:* T. SCITOVSKY. *The Profit Concept and Theory: a Restatement:* J. F. WESTON.

VOL. LXII, NO. 3, JUNE 1954. *The Malenkov-Khrushchev New Economic Policy:* L. VOLIN. *The Economics of Marketing Reform:* P. T. BAUER and B. S. YAMEY. *Hyperinflation in China, 1937–49:* C. D. CAMPBELL and G. C. TULLOCK. *Business Cycles and Economic Policy:* H. BREMS. *The Marshallian Demand Curve:* M. J. BAILEY; *A Reply:* MILTON FRIEDMAN.

Econometrica

VOL. 22, NO. 2, APRIL 1954. *Report of the Evaluative Committee for Econometrica. On Equilibrium in Graham's Model of World Trade and other Competitive Systems:* L. MCKENZIE. *Causality and Econometrics:* H. O. A. WOLD. *Standard Error of Forecast of a Complete Econometric Model:* T. M. BROWN. *A Model for Programming and Sensitivity Analysis in an Integrated Oil Company:* A. CHARNES, W. W. COOPER and B. MELLON. *An Example of Autocorrelated Disturbances in Linear Regression:* J. GURLAND. *Autoregression in the United States Economy—1870–1929:* A. J. GARTAGANIS. *An Inventory Problem:* M. ROSENBLATT.

Journal of the American Statistical Association

VOL. 49, NO. 265, MARCH 1954. *The Present Structure of the Association.* W. G. COCHRAN. *Principles of Sampling:* W. G. COCHRAN, F. MOSTELLER and J. W. TUKEY. *Do Persons Lost to Long Term Observation Have the Same Experience as Persons Observed?:* J. F. DONOHUE, V. LARSEN, A. P. ISKRANT and Q. R. REMEIN. *Applications of Statistical Methods to Sedimentary Rocks:* W. C. KRUMBEIN. *Relationship between and Index of House Prices and Building Costs:* D. M. BLANK. *Cycles in the Balance of Payments:* S. FABRICANT. *Demand Analysis:* H. S. HOUTHAKKER. *Some Practical Techniques in Serial Number Analysis* L. A. GOODMAN. *The Problem of Autocorrelation in Regression Analysis* R. L. ANDERSON. *Joint Confidence Regions for Multiple Regression Coefficients:* D. DURAND. *Asymptotic Relative Efficiencies of Distribution-Free Tests of Randomness against Normal Alternatives:* A. STUART *Estimation of the Poisson Parameter from Truncated Samples and from Censored Samples:* A. C. COHEN. *Tables of the Expected Value of 1/X for Positive Bernoulli and Poisson Variables:* E. L. GRAB and I. R. SAVAGE.

The Journal of Economic History

VOL. XIV, NO. 1, WINTER 1954. *Intercompany Technical Standardization in the Early American Automobile Industry :* G. V. THOMPSON. *Philippe de Girard and the Introduction of Mechanical Flax Spinning in Austria :* D. C. LONG. *Speculation in the Revolutionary Debt : The Ownership of Public Securities in Maryland, 1790 :* E. J. FERGUSON.

VOL. XIV, NO. 2, SPRING 1954. *Geographical Differences in the Use of the Corporation in American Manufacturing in 1899 :* G. H. EVANS. *Reform Unionism : The National Labour Union :* G. N. GROB.

Industrial and Labor Relations Review

VOL. 7, NO. 3, APRIL 1954. *Seizure in Emergency Labor Disputes in Virginia :* R. R. FRANCE. *Two Views on Wage Differences : Intraoccupational Wage Diversity :* M. ROTHBAUM and H. G. ROSS. *Hiring Patterns and Occupational Wage Dispensation :* R. L. RAIMON. *Administrative Problems of the Wage Stabilization Board :* M. A. HOROWITZ. *Union Political Action : The Member Speaks :* R. A. HUDSON and H. ROSEN. *Community Recognition of Union Leaders :* O. W. PHELPS. *The Stockholm Congress of the ICFTU :* J. P. WINDMULLER. *Money Wage and Product Wage Relationships :* P. E. SULTAN.

The Southern Economic Journal

VOL. XX, NO. 4, APRIL 1954. *Industrialization and Economic Progress in the Southeast :* S. H. ROBOCK. *The Farmer's Stake in Our Foreign Economic Policy :* R. W. TRENTON. *Issues in Congressional Tariff Debates, 1890–1930 :* W. R. ALLEN. *Commercial Aviation and the Civil Aeronautics Act of 1938 :* H. C. BUNKE. *Cross Hauling—a Symptom of Incomplete Collusion under Basing-Point Systems :* J. S. MCGEE.

Harvard Business Review

VOL. 32, NO. 2, MARCH–APRIL 1954. *The Defense of Business : a Strategic Appraisal :* J. K. GALBRAITH. *In Conference :* R. F. BALES. *Land for Industry—a Neglected Problem :* D. A. MUNCY. *Aiding the Community :* C. R. WHARTON. *Resistance to Training :* J. R. SURFACE. *Fact and Fiction about Southern Labor :* S. H. ROBOCK and J. M. PETERSON. *Control and Freedom in a Decentralized Company :* R. VILLERS. *Electronics Down to Earth :* J. A. HIGGINS and J. S. GLICKAUF. *Train your Memory :* B. FURST. *Business Appraises Consumer Testing Agencies :* E. R. BEEM and J. S. EWING. *New Approach to Executive Selection :* A. S. JUDSON.

VOL. 32, NO. 3, MAY–JUNE 1954. *Thinking Ahead : Business and Government :* J. W. ALSOP. *Challenge of the Guaranteed Annual Wage :* J. L. ALLEN and C. W. RANDLE. *How to Deal with Resistance to Change :* P. R. LAWRENCE. *The Budget Comes of Age :* J. L. PEIRCE. *Let's Get Cost Pricing Out of Our Laws :* R. W. AUSTIN. *Mathematical Programming : Better Information for Better Decision Making :* A. HENDERSON and R. SCHLAIFER. *How Much Should a Company Spend on Research ? :* H. S. TURNER. *Door-to-Door Selling :* V. P. BUELL. *Evaluating the Proposed Labor-Law Changes :* A. H. MYERS.

Foreign Affairs

VOL. 32, NO. 3, APRIL 1954. *Policy for Security and Peace :* J. FOSTER DULLES. *France and the Defense of Europe :* G. MOLLET. *Rise and Fall of the Anglo-French Entente :* A. GERAUD. *The Pivot of History :* C. KRUSZEWSKI. *The Case for Private Investment Abroad :* H. E. STASSEN. *Oil for Peace or War :* H. FEIS. *The Progress of Soviet Science :* J. TURKEVICH. *Democracy Lives in Italy :* R. PACCIARDI. *The New Reign in Saudi Arabia :* H. ST. J. B. PHILBY. *The Tariff in Transition :* P. W. BIDWELL. *Bolivia : Test of Technical Assistance :* C. GOODRICH. *Danger in Kashmir :* J. KORBEL. *The Soviet Grip on Sinkiang :* LI CHANG.

VOL. 32, NO. 4, JULY 1954. *Leadership in World Affairs :* W. A. HARRIMAN. *Puerto Rico and the U.S., their Future Together :* L. M. MARIN. *Violence on the Jordan–Israel Border : a Jordanian View :* J. B. GLUBB. *The Search for Anglo-American Policy :* H. GAITSKELL. *Japan Tackles Her Problems :* J. D. ROCKEFELLER. *The Split between Asian and Western Socialism :* D. J. SAPOSS. *The Political Vacuum in Germany :* K. JASPERS. *The Gold Coast : an Experiment in Partnership :* B. W. JACKSON. *Turkey Joins the West :* G. C. MCCHEE. *Canadians are Different :* M. CHAPIN. *The Residue of Pareto :* C. BRINTON. *Finland Stands Guard :* J. H. WUORINEN. *Antarctic Claims :* J. W. HERON.

Social Research

VOL. 21, NO. 1, SPRING 1954. *Essentials to Peace :* G. MARSHALL. *Soviet Economic Growth :* N. JASNY. *Mill and the Problem of Freedom of Thought :* H. M. MAGID. *Impressions from Berlin, 1953 :* E. J. GUMBEL. *Stability in Late Capitalism : a Survey :* H. NEISSER.

Review of Social Economy

VOL. XII, NO. 1, MARCH 1954. *The Principle of Personal Responsibility :* K. E. BOULDING. *Some Reflections on the Economic Aspects of "Depersonalization" :* F. BAERWALD. *The Worker as Person :* B. W. DEMPSEY. *The Responsibility of Man the Investor :* J. H. PRIME. *The Manager as a Person :* J. L. HAYES. *Economic Progress Under the United Nations :* SISTER M. THOMASINE.

Journal of Farm Economics

VOL. XXXVI, NO. 2, MAY 1954. *Problems of a Farm and Home Planning Program :* D. D. BROWN. *Farm Planning—a Trial Operation :* R. G. WHEELER and J. D. BLACK. *The Republican Department of Agriculture :* C. M. HARDIN. *Sources of our Increasing Food Supply :* H. F. BREIMYER. *Resource Return and Productivity Coefficients :* E. O. HEADY and R. *Resource Return and Productivity Coefficients :* E. O. HEADY and R. SHAW. *Underemployment of Labor in Southeastern Agriculture :* C. E. BISHOP. *Flexibility and Diversification in Western Kansas :* E. N. CASTLE. *Comparison of Farm Management Service Farms and a Random Sample :* A. G. MUELLER. *Resource Productivity and Development Policy in Greece :* G. COUTSOUMARIS.

Economic Geography

VOL. 30, NO. 2, APRIL 1954. *An Approach to a Theory of Economic Geography :* H. H. MCCARTY. *The Hashemite Kingdom of the Jordan : a Study in Economic Geography :* S. VAN VALKENBURG. *Great Lakes–Overseas : An Expanding Trade Route :* H. M. MAYER. *Population Pressure and National Resources : Some Observations upon the Italian Population Problem :* M. J. WISE. *Land Reform in Southern Italy :* R. E. DICKINSON.

Land Economics

VOL. XXX, NO. 2, MAY 1954. *Cost-of-Capital Techniques Employed in Determining the Rate of Return for Public Utilities :* L. W. THATCHER. *The Role of Government in Influencing Changes in Housing in Baltimore :* M. HOFFMAN. *Plantation Agriculture in the United States : Seventeenth to Twentieth Centuries :* P. S. TAYLOR. *Rural Zoning in Minnesota : An Appraisal :* C. H. STOLTENBERG. *Land Reform in Bolivia :* E. FLORES.

The Journal of Accountancy

VOL. 97, NO. 3, MARCH 1954. *Statistical Sampling Applied to Ageing of Accounts Receivable :* R. M. TRUEBLOOD and R. CYERT. *Authoritative Accounting Guide for Nonprofit Institutions :* R. S. JOHNS. *Accounting*

for Time Charges in a Public Accounting Practice : M. R. REICH. *Capital-Gains Aspects of Oil and Gas Transactions :* J. F. Y. STAMBAUGH. *The Auditor's Report on Municipal Revenue Bonds :* W. F. MORGAN. *New Internal Revenue Service Rules for Taxpayers' Rulings :* D. C. ALEXANDER. *The Theory and Practice of Accountants' Workpapers :* S. CHAN. *Internal Control Over Inventories in Manufacturing Concerns :* H. C. MCGUIGAN.

VOL. 97, NO. 4, APRIL 1954. *Standards for Admission to the Accounting Profession :* D. M. BEIGHTS. *Treasurers Define the Nature of Advertising Items :* J. K. LASSER. *The Impact of Changing Prices on a Department Store :* D. A. CORBIN. *Five Practical Problems Solved by Public Accounting Firms. Sale of Rental Housing Units : Ordinary Income or Capital Gain ? :* D. REIFER. *Advisory Service to Business : Its Rewards and Hazards :* A. CHRISTEN. *What Manner of Man is the Average Accountant ? :* R. JACOBS and A. E. TRAXLER.

VOL. 97, NO. 5, MAY 1954. *The Practice of Taxes : One Attorney's Point of View :* C. REMBAR. *Putting Idle Cash to Work to Earn its own Keep :* E. J. MANN. *A Review of the Proposed New Internal Revenue Code :* B. HARROW. *Cost : Is it a Binding Principle of Just a Means to an End ? :* S. J. BROAD. *Organizing and Operating a Successful Internship Program :* B. FUTHEY. *Auditing a Limited Partnership Production in the Theater :* W. BARNETT. *One Firm's Approach to its Administrative Problems :* R. S. BOGUE.

VOL. 97, NO. 6, JUNE 1954. *The Role of the Auditor in Defense-Contract Costs. Confirming Brokers' Accounts with Customers on a Test Basis :* C. H. KNOLL. *A Review of the Proposed New Internal Revenue Code :* B. HARROW. *The Distribution of Overhead with Electronic Calculators :* G. G. JEWETT. *Accounting for Changing Price Levels : Recent British Views :* D. SOLOMONS.

Revue d'Économie Politique

VOL. 64, NO. 2, MARCH–APRIL 1954. *L'Économie de l'Union Française d'Outre-Mer.*

VOL. 64, NO. 3, MAY–JUNE 1954. *Le secret de la prosperité américaine :* W. E. RAPPARD. *Esquisse d'une théorie analytique de l'évolution économique :* J. DAYRE. *Une réformation de la théorie de la concurrence pure :* J. AUBERT-KRIER. *Les physiocrates et le circuit économique :* J. R. BOUDEVILLE.

Revue de Science et de Législation Financières

VOL. XLVI, NO. 2, APRIL–JUNE 1954. *Homage to Gaston Jèze (1869–1953) from Abroad :* E. DA SILVA, C. S. SHOUP, F. NEUMARK, B. GRIZIOTTI. *In Defence of the Tax on Energy :* M. CLUSEAU. *Public Investments in Turkey :* A. ERGINAY. *The Influence of Taxation on Current Savings :* M. LAURÉ. *The Rehabilitation of Indirect Taxation :* M. DUVERGER. *The Interests on the Public Debt in the National Income :* B. DUCROS. *Public Finance and Alcohol :* G. TIXIER. *Financial Responsibility of Public Accountants and the Decree of 9th August 1953 :* P. VELLAS.

Bulletin de l'Institute de Recherches Économiques et Sociales

VOL. XX, NO. 3, MAY 1954. *La Belgique en 1953.*

VOL. XX, NO. 4, JUNE 1954. *La conjoncture économique de la Belgique :* M. WOITRIN. *Statistiques économiques courantes.*

Revue de l'Institut de Sociologie

NO. 4, 1953. *Sciences, Techniques et Société, à la lumière de l'histoire des Sciences :* J. PELSENEER. *Le social et l'individuel dans la science du langage :* M. LEROY. *Le Logement :* E. ESCH, E. S. KIRSCHEN, and J. POELMANS. *Hommes et bêtes : Action réciproque—Première partie : L'Équation personnelle :* R. AMY.

Schmollers Jahrbuch

VOL. 74, NO. 2, 1954. *Soziologie als Lebenskunstlehre :* O. KÜHNE. *Gedanken zu einer Berufsethik der Betriebe :* J. JOHANNESSON. *Über die Angleichung der Währungen in West- und Mitteldeutschland im Falle der Wiedervereinigung beider Gebiete :* R. MEIMBERG.

VOL. 74, NO. 3, 1954. *Statistische Sozialforschung : Werdegang und Gegenwartsprobleme :* C. LORENZ. *Die Hauptpunkte der Keynes'schen Theorie : Versuch einer kritischen Würdigung :* E. MÄRZ. *Erscheinungsformen und Wesen der Imperialismus :* J. GUMPERT.

Die Weltwirtschaft

NO. 1, 1954. *Weltwirtschaftliche Überlick. Länderberichte. Marktberichte. Branchenberichte Gründe und wirtschaftspolitische Konsequenzen der deutschen Überschusssituation :* W. GATZ. *Das "cash budget" im Bundeshaushalt der Vereinigten Staaten :* R. BINDER.

Wirtschaftsdienst (in German with English Air Mail Digest)

VOL. 34, NO. 4, APRIL 1954. *Industrial Fairs :* L. L. ROGGENBUCK. *"The German Export Danger" as the British See it. The Problem of Trade with Turkey. The Problem of Germany's Balance of Payments Surplus :* H. LOHMANN and E. T. NEVIN. *Finland's Foreign Trade and Currency Problems :* A. VON GADOLIN. *Industrialisation in Eastern Europe. The Shipchandlery Trade in the Federal Republic :* H. MORGENBESSER.

VOL. 34, NO. 5, MAY 1954. *The Real Prospects of East–West Trade. Marginal Notes on the Problem of "Under-developed" Countries :* N. KOESTNER. *The Automobile Industry in the Federal Republic :* H. EICHENHOFER.

VOL. 34, NO. 6, JUNE 1954. *New Transport Bills Discussed. We must not Discredit our own Policy. The Problem of Remunerative Housing :* J. HEUER. *Housing Construction and Housing Needs in the Federal Republic :* E. VON LUCADOU.

Wirtschaft und Statistik

VOL. 6, NO. 4, APRIL 1954. *Das Sozialprodukt im 2 Halbjahr und im Kalenderjahr 1953. Die Vorräte in der Wirtschaft 1951 bis 1953 :* O. SCHÖRRY. *Die Umsätze und ihre Besteuerung :* K. HERRMANN.

VOL. 6, NO. 5, MAY 1954. *Zahl und Art der Einkommensbezieher in den Haushaltungen :* K. HORSTMANN. *Der Verbrauch in Arbeitnehmerhaushaltungen im Jahr 1953 :* P. DENEFFE.

Jahrbücher für Nationalökonomie und Statistik

VOL. 166, NO. 2, APRIL 1954. *Kapital und Geld in klassicher und moderner Sicht :* M. KRÖLL. *Sinn und Ausdruck in der sozialen Formenwelt :* G. WEIPERT.

Weltwirtschaftliches Archiv

VOL. 72, NO. 1, 1954. *The Concept of Money :* J. PEDERSEN. *Die Tätigkeit der Reichsbank von 1876 bis 1914 :* K. R. BOPP. *Econometric Models and Welfare Maximisation :* H. THEIL. *The Concept of Energy in Economics :* S. D. ZAGOROFF. *Bemerkungen zu Bombachs Modell des wirtschaftlichen Wachstums :* M. J. BECKMANN.

Zeitschrift für die Gesamte Staatswissenschaft

VOL. 110, NO. 2, 1954. *Der Unternehmer in der Volkswirtschaft :* W. WEDDIGEN. *Der Zirkulartausch : Eine Kreislaufanalyse :* M. KRÖLL. *Mensch und Sach : Zum Problem des Eigentums :* H. DOMBOIS. *Die Bundeskompetenz zur Regelung des Wasserhaushaltswesens :* F. GIESE. *Wahlsoziologische Probleme des Nationalsozialismus :* S. S. NILSON.

Bayern in Zahlen

VOL. 8, NO. 3, MARCH 1954. *Überblick über die Bevölkerungsentwicklung in Bayern während der letzen 50 Jahre :* W. MAIER. *Die Eheschliessungen der Ausländer in Bayern von 1946 bis 1952 :* J. FILSER. *Die übertragbaren Krankheiten in Bayern 1953 :* C. MÜHLE. *Bayerns Nutzvieh Ende 1953 :* J. BUCK. *Interzonenhandel Bayerns im Jahre 1953 :* J. LEIPNER. *Der Reiseverkehr über die Auslandsgrenzen Bayerns während des Jahres 1953 :* J. LEIPNER.

VOL. 8, NO. 4, APRIL 1954. *Bayern als Grenzland :* L. LEIBERICH. *Bayerns Verwaltungsgebietseinteilung 1840 bis 1952 :* F. ZOPFY. *Die Wanderungen in Bayern im Jahre 1953 :* W. MAIER. *Der bayerische Weinbau im Jahre 1953 :* F. HELLER. *Die Ausfuhr Bayerns im Jahre 1953 :* J. LEIPNER. *Die bayerische Binnenschiffahrt im Jahre 1953 :* J. LEIPNER. *Weihnachtsbeihilfen für Hilfsbedürftige :* E. SCHMIDT.

Vierteljahreshefte zur Wirtschaftsforschung

NO. 2, 1954. *Zur konjunkturellen Situation :* A. WISSLER, I. RIECKENBERG and H. MARTELL. *Die Ergebnisse der vierteljährlichen Volkswirtschaftlichen Gesamtrechnung für die Bundesrepublik : Erstes Quartal 1954 :* F. GRÜNIG and H. SCHIMMLER. *Die Erzeugungs- und die Geldwirtschaft der sowjetischen Besatzungszone im dritten Jahre des Fünfjahrplanes :* H. KOLBE and H. MEIER.

Europa Archiv

VOL. 9, NO. 7, APRIL 1954. *Sechs Jahre Benelux :* H. UMRATH. *Politik des Reisens ? Eine Untersuchung über die Bedeutung von Auslandsreisen für die Schaffung eines Europabewusstseins : II : "Austausch" und Europabewusstsein.*

VOL. 9, NO. 8–9, APRIL–MAY 1954. *Das Problem der europäischen Sicherheit auf der Berliner Viermächtekonferenz 1954 : I : Entwicklungsstadien des europäischen Sicherheitsproblems 1943 bis 1953 :* W. CORNIDES; *II : Die Verhandlungen über das Sicherheitsproblem auf der Berliner Konferenz von 1954 :* W. BÖDIGHEIMER. *Die Oesterreichverhandlungen auf der Berliner Konferenz von 1954, eine Uebersicht :* H. VOLLE and E. WALLRAPP.

VOL. 9, NO. 10, MAY 1954. *Menschenrechtsschutz und Europäische Integration :* F. BREITNER. *Europas Flüchtlings- und Bevölkerungsprobleme in der Sicht des Europarats :* P. FISCHER.

VOL. 9, NO. 11, JUNE 1954. *Die Diskussion über die gegenwärtige Rechtsstellung des Saarlandes :* E. MENZEL.

Schweizerische Zeitschrift für Volkswirtschaft und Statistik

VOL. 90, NO. 2, JUNE 1954. *Das ökonomische Problem des technischen Fortschritts :* J. NIEHANS. *Die westeuropäischen Industrieverbände und das Problem der Exportstimulierung :* H. HEROLD. *Les caractéristiques économiques des grandes entreprises de distribution :* H. PASDERMADJIAN. *Die Wertbeständigkeit in der Lebensversicherung : Eine Erwiderung :* C. GASSER. *Tautologisches und Ideologisches : Bemerkungen zu einem Aufsatz von Erich Preiser :* H. ALBERT. *Statistik der Geheimsphäre : Methodologische Bemerkungen zum neuen Kinsey-Report :* A. SCHWARZ.

Aussenwirtschaft

VOL. 9, NO. 1, MARCH 1954. *Betrachtungen zur Aussenwirtschaftspolitik :* H. BACHMANN and A. ROSSHARDT. *Die langfristige Exportfinanzierung in der Schweiz :* H. BACHMANN and E. GSELL. *Zölle oder Kontingente ? :* E. KÜNG.

Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung

VOL. XXVII, NO. 3, MARCH 1954. *Die wirtschaftliche Lage in Österreich. Die Auswirkungen der ersten Liberalisierungsetappe. Der Ausländer-Fremdenverkehr Westeuropas.*

VOL. XXVII, NO. 4, APRIL 1954. *Die Konjunkturlage im Frühjahr 1954. Die wirtschaftliche Lage auf einzelnen Gebieten. Der Bundeshaushalt im Jahre 1953.*

VOL. XXVII, NO. 5, MAY 1954. *Die wirtschaftliche Lage in Österreich. Statistische Übersichten : Österreichische und internationale Wirtschaftszahlen.*

De Economist

VOL. 101, NO. 4, APRIL 1954. *Over de theorie der economische politiek :* J. TINBERGEN. *Enige problemen samenhangend met het vormen van een gemeenschappelijke markt in Schuman-Europa :* J. WEMELSFELDER. *Economische en sociale kroniek :* W. J. v. d. WOESTIJNE.

VOL. 101, NO. 5, MAY 1954. *Condities voor monetair evenwicht :* F. DE ROOS. *De Nederlandse concurrentiepositie op de West-Europese en Noord-Amerikaanse invoermarkten :* F. HARTOG. *Bedrijfsgrootte en verkaveling in de Nederlandse landbouw :* R. A. DE WIDT. *Economische en sociale kroniek :* W. J. v. d. WOESTINJE.

Skandinaviska Banken Quarterly Review

VOL. XXXV, NO. 2, APRIL 1954. *Conditions for Progress :* P. JACOBSSON. *Economic Planning and Cheap Money Policy 150 Years Ago :* A. MONTGOMERY. *The Impact of Pension Funds on the American Capital Markets :* R. S. MURRAY.

Giornale degli Economisti e Annali di Economia

VOL. XIII, NO. 1–2, JANUARY–FEBRUARY 1954. *Un nuovo Procedimento di Soluzione delle Equazioni e dei Sistemi alle Differenze Finite :* G. DEMARIA. *Nota sull'uso delle Equazioni alle Differenze Finite non Omogenee :* V. DOMINEDÒ. *Alcuni Problemi di Equilibrio Monetario :* I. GASPARINI. *Dazi Generali ad Valorem all'Importazione e all'Esportazione : della loro simmetria con riferimento anche ad altre imposte :* G. PARRAVICINI. *Intorno al Metodo degli Intervalli di Confidenza ed alla Teoria dei Testi per Ipotesi Statistiche secondo J. Neyman ed E. S. Pearson :* B. COLOMBO.

VOL. XIII, NO. 3–4, MARCH–APRIL 1954. *A Proposito di una recente Opera sulla Imposizione degli Incrementi Patrimoniali :* A. SCOTTO. *Sull'unificazione ed il Rinnovamento della Scienza Economica :* E. ZACCAGNINI. *Per una Storia delle Dottrine Economiche : lo "Schmollers Jahrbuch" :* T. BAGIOTTI. *Economia della Finanza Pubblica :* G. U. PAPI. *Cicli Storici e Cicli Economici :* S. E. DE FALCO.

Rivista Italiana di Economia Demografia e Statistica

VOL. VII, NOS. 2, 3, 4, APRIL–DECEMBER 1953. *Considerazioni intorno ai movimenti numerici delle popolazioni umane :* G. SENSINI. *A proposito di una ricerca sull'andamento della mortalità nelle età senili :* B. DE FINETTI. *Alcuni dati provvisori sulle cause congiunte di morte in Italia :* B. BARBERI. *Su alcuni aspetti della dissomiglianza e della concordanza tra variabili statistiche, con applicazione alle distribuzioni degli sposi secondo l'età :* T. SALVEMINI. *L'ora della nascita e della morte :* S. SOMOGYI. *Indagine sulle nascite plurime : La misura statistica della multiparità :* V. AMATO. *E' possibile la rivalutazione dei capitali nella assicurazione-vita ? :* R. CACCIAFESTA. *La distribuzione di X'e di una sua verifica sperimentale :* L. VAJANI. *Sulla determinazione, all'epoca del bilancio, delle riserve matematiche di una compagnia di assicurazione sulla vita :* F. EMANUELLI. *Le sommazioni mobili per colonna :* O. CAPOCCIA. *Equazione logistica applicata allo sviluppo delle Ferrovie :* N. QUARTO.

Banca Nazionale del Lavoro Quarterly Review

VOL. VI, NO. 27, OCTOBER–DECEMBER 1953. *The 1951 Census of Industry and Trade in Italy : Some Preliminary Results :* H. BARBERI. *Problems of E.P.U. and Italian Commercial Policy :* G. CARLI. *The Regional*

Approach towards the Expansion of World Trade : G. U. PAPI. *The Italian Economy : Growth Factors and Bottlenecks :* B. FOA. *The Historical Development of Anglo-Italian Trade :* S. B. SAUL.

Review of the Economic Conditions in Italy (Banco di Roma)

VOL. VIII, No. 3, MAY 1954. *Investment in Public Works for Economic Stability :* G. DI NARDI.

Italian Affairs

VOL. III, No. 3, MAY 1954. *Comments on the Yugoslav Administration in Zone B of the Free Territory of Trieste. Personalities of the New Italy. The State Budget. Methane : a New Source of Wealth for Italy. Post War Agricultural Development in Italy. The Italian Artisan.*

Critica Economica

No. 2, APRIL 1954. *Nostro Paese. La C.E.D. e l'economia italiana :* A. GIOLITTI. *L'imposta sulle Società nel disegno governativo :* F. ANTOLINI.

Revista de Economia

VOL. VI, No. 4, DECEMBER 1953. *Acerca da Previdência Nacional :* E. C. VIEIRA and J. MOURA. *Princípios fundamentais da banca moderna :* A. R. PEREIRA. *Notas sobre a economia de Angola :* U. NASCIMENTO.

Economic Bulletin of the National Bank of Egypt

VOL. VII, No. 1, 1954. *Lessons in Industrialization. Egyptian Industry's Ailments. Deflation. End in Sight ? Convertibility for Non-Residents : Egyptian Industry Reviewed.*

Kobe Economic and Business Review

1, 1953. *Present Day Significance of Free Ports :* G. SHIBATA. *Development of Devaluation Problem in Post-war Japan :* K. MIYATA. *Japan's Trade with South and South-east Asian Countries—a Statistical Analysis :* F. KAWATA. *The Exchange Control Policy in Post-war Japan :* M. FUNITA. *On the Official Statistics of Foreign Trade in the Post-war Japan :* H. KATANO. *On Business History :* T. INOUE. *Problems of Regional Industrialization in Japan :* M. BEIKA. *A Research of Wage Income in Post-war Japan :* N. NOSE. *Revaluation in Japan :* S. WATANABE. *Last-in, First-out Inventory Method under the Japanese Tax Law :* M. MASUZAKI.

Osaka Economic Papers

VOL. II, No. 2, MARCH 1954. *Critical Notes on the Theory of Interest :* Y. TAKATA. *Anti-Monopoly Law and Elimination of Excessive Concentration of Economic Power Law in Japan—Comparison between Anti-Trust Laws of Japan and those of the United States :* K. MESAKI. *Capital Accumulation and Reproduction :* T. ICHITANI. *Current Problems of Local Finance in Japan :* K. KINOSHITA. *Some Laws of Complementary and Substitutive Goods :* M. MORISHIMA.

Kyoto University Economic Review

VOL. XXIII, No. 1, APRIL 1953. *System of Shipping Theory :* S. SAWA. *Dobb's Theories of Economic History :* H. HORIE. *Rousseau's position in the History of the Peasantry :* K. KAWANO.

VOL. XXIII, No. 2, OCTOBER 1953. *Notes on the Analysis of Expected and Realized Monetary Flows :* M. BABA. *A Tentative Non-linear Theory of Economic Fluctuations in the Purely Competitive Economic System :* S. ICHIMURA. *Involuntary Unemployment Explained by Over-determinateness :* N. KAMAKURA. *Some Economic Reasons for the Marked Contrast in Japanese and Chinese Modernization :* C. D. SHELDON.

Statisztikai Szemle (Hungarian text)

JANUARY 1954. *The Objects and Methods of Statistics :* P. KUVSHINNIKOV and B. SMULEVICH. *Defects in Metallurgical Statistics :* G. BÁCS. *The Main Index-Numbers in Hospital Statistics :* A. KLINGER. *Control of the MTS Reporting System in 1953 :* I. SZEKULESZ and L. ZOLTAI.

FEBRUARY 1954. *Last Year's Volume of "Statisztikai Szemle" :* I. HUSZÁR. *The Present State of the Discussion Among Soviet Statisticians on the Notion, Objects and Methods of Statistics :* F. GYULAY. *For an Improvement in Statistical and Economic Work. Statistics of Industrial Accidents :* K. MILTÉNYI. *Contributions to the History of Hungarian Statistics :* I. MÉSZÁROS. *Problems of Accounting Quick-wearing Tools of Small Value :* Z. DEMETER. *Some Words on the Journal "Statisztika Értesitö" :* T. HORVÁTH.

MARCH 1954. *The Concept of Statistics :* J. RÉDEI. *Determine and Utilise Reserves for the Lowering of Production Costs in Building :* K. VINOGRADOV. *Problems of Teaching Industrial Statistics :* O. LUKÁCS. *The New Tasks of Soviet Trade Statistics :* S. PARTIGUL. *Statistical Work in the Railway Section of the Ministry of Communications, Posts and Telegraphs :* L. NAGY. *For a Simplification of Calculations to Increase the Accuracy of Cost of Production Statistics :* L. TÜÜ. *Falsification of the Index of Industrial Production in the United States :* Z. KONESSY. *Accounting and Statistical Discipline on State Farms :* I. NAGY.

Voprosy Ekonomiki (Russian text)

No. 12, 1953. *On Production and Consumption Under Socialism :* K. OSTROVITYANOV. *The Programme for the Further Development of Food Industry Production in the U.S.S.R. :* I. STOZHILOV. *On the Sale of the Output of Collective Farms Located near Towns :* E. RUDAKOVA. *Reserves for the Further Upsurge of the State Farm Economy :* I. KANTYSHEV. *The German Democratic Republic—A Stronghold of the Peace-loving Strength of the German People :* M. SOBINOV. *The Operation of the Law of Value in the Chinese People's Republic :* SUE MU-TSIAO. *The Economic Upsurge of the Rumanian People's Republic :* M. OPRISAN and Ş. ARSENE. *Divergencies between the U.S.A. and Britain in the Sphere of External Payments :* P. CHERNYSHOV.

No. 3, 1954. *The Role of Economic Science in Communist Construction. The Economic Development of Soviet Ukraine :* A. OMAROVSKY. *Problems of Profits and the Turnover Tax in the U.S.S.R. :* A. BACHURIN. *On the Development and Strengthening of the Economic Ties between M.T.S. and Collective Farms :* V. VENZHER. *Problems of Raising Agricultural Technique and the Many-sided Development of the Communal Economy of Collective Farms :* P. KOTOV. *Livestock Development in Moscow Area Collective Farms :* N. PUZANCHIKOV. *Soviet Trade—the Basic Form of Consumer Goods Distribution under Socialism :* V. LOPATKIN. *Inflation and the Process of Capitalist Accumulation :* I. TRAKHTENBERG. *Results of the Discussion on the Definition of the Economic Effectiveness of Capital Investment in U.S.S.R. Industry.*

No. 4, 1954. *For a Further Upsurge of Socialist Agriculture. The Forms of Economic Ties Between Town and Country Under Socialism :* I. VYAZMIN. *Questions of the Development of the Economic Laws of Socialism :* A. SAZANOV. *On the Higher Technique of Socialist Production :* N. NEKRASOV. *Some Problems of the Economic Improvement of Flax-growing Collective Farms :* A. MERZLOV and A. TERYAEVA. *The Communal Economy of the "Red October" Collective Farm :* P. PROZOROV. *Problems of French Security :* V. LYUBIMOVA. *The Struggle of the People of Guatemala for National Independence :* G. TIKHONOV. *The Arbitrariness of British Colonisers in British Guiana :* YU. KOVROV.

No. 5, 1954. *An Increase in Grain Output is the Most Important Task of the National Economy :* L. GREKULOV. *The Economic Significance of the Union of the Ukraine and Russia :* P. KHROMOV. *On the Specialisation of Local and Co-operative Industries in the Urals :* A. EFIMOV. *From Experience of the Ramen Machine and Tractor Station :* I. SHIRYAEV.

Economic Laws in the Conditions of New Democratic China : TSYAN SUE-MO. *Commodity Production in the European People's Democracies :* I. DUDINSKY. *Taxation in Capitalist Countries—or the Working Classes Robbed by the Monopolists :* V. SOLODOVNIKOV. *How U.S. Unemployment Statistics are Falsified :* A. KATS.

Planovoe Khozyaistvo (Russian text)

No. 2, 1954. *Eliminate Errors and Shortcomings in Agricultural Planning. M.T.S.—the Main and the Deciding Factor in the Development of Collective Farm Production :* V. KHALTURIN. *Increase Machine and Automatic Equipment Production for the Food Industry :* N. PETROV. *Reserves for the Economy of Ferrous Metals in the National Economy :* I. TARASOV. *On Accelerating Construction and the Commissioning of Basic Funds :* I. IVANOV. *The Use of Plastics is an Important Reserve for Economy in the National Economy :* E. EFIMOV. *Planning Cultural Construction :* V. ZHINOV and F. KRAVCHENKO.

Vestnik Statistiki (Russian text)

No. 1, 1954. *Statistics in Lenin's Works :* T. KOZLOV. *Problems in the Analysis of Industrial Production Costs :* D. VAYNSHENKER. *"Business" Statistics :* I. SOSENSKY. *The Impoverishment and Ruin of Rural Workers in Capitalist Countries :* L. LVOV. *Shortcomings in Statistics of Automobile Freight Carriage. On the Improvement of Planning and Accounting Expenses of Catering Enterprises. Discussion in the Central Statistical Administration of Petrov, "Course of Economic Statistics."*

Finansy I Kredit S.S.S.R. (Russian text)

No. 3, 1954. *For a Simplification and Reduction of the Cost of the State Apparatus. Tasks of Financial Organs in State Revenue Operations :* F. UPYUPIN. *Cost Accounting and Profitability in Socialist Economy :* V. PERESLEGIN. *Ways to Strengthen Financial Control of M.T.S. Work :* S. NEDELIN. *Construction Accounts under Extended Contracts :* P. PODSHIVALENKO and N. SHUMOV. *Long Term Credits to Local Industry :* V. DYDIN and M. TSATKINA. *The Budget of the Ukrainian Capital :* V. ABRAMOV. *How to Calculate the Directors' Fund in the 1953 Annual Accounts :* S. RYUMIN. *The State Budgets of the People's Democracies in the Service of Building Socialism :* D. BUTAKOV.

Plánované Hospodářství (Czech text)

No. 3, 1954. *The Publication of the First Volume of Marx's Capital in the Czech Language :* O. ROTH. *Problems of Agricultural Price Fixing :* I. RUBIK. *Public Health Planning :* V. SHUSTOV. *Experience of the Prague Regional Planning Commission :* J. KRATOCHVIL.

No. 4, 1954. *Peaceful Construction in the U.S.S.R. and the European People's Democracies. The 1954 State Budget and its Connection with the Development of the National Economy :* V. KREYSA. *For Further Technical Progress in the Coal Industry :* H. KRASNIKOVSKY. *Public Health Planning :* V. SHUSTOV.

Gospodarka Planowa (Polish text)

No. 3, 1954. *The Fourth Year of the Six-Year Plan. Agricultural Mechanisation and the Increase of the Productive Resources of Agriculture :* J. GRYSIAK. *The Tasks and Organisation of Co-operative Flat Construction :* L. KEDZIERSKI. *Timber Pickling and the Economy Campaign :* B. ZYSKA. *Labour Security and Hygiene and the Improvement of Its Planning in the Textile Industry :* T. JUŚKIEWICZ.

No. 4, 1954. *Regional Land Classification and Agricultural Production Planning :* M. STRZEMSKI. *Responsibilities of State Farms in the Campaign to Raise Production :* Z. KARCZEWSKI. *The Development of Collective Farm Production and Changes in Village Life in the Wroclaw Voivodship :* J. MARSZAŁKOWICZ. *Small Industry's Tasks in Urban and Rural Catering :* W. ZAMBRZYSKI. *The Development of Refrigeration as a Factor in the Elimination of Waste and the Improvement of Supply to Consumers :* W. ZAMBRZYCKI. *East–West Trade :* J. WERNER.

No. 5, 1954. *The State Plan is an Inviolable Law. Factory Collective Wage Agreement as a Factor in Realising Production Plans :* H. POP-LAWSKI. *Prospects for Ferrous Metallurgy :* S. LOWINSKI and J. ZALEWSKI. *Problems in Reaching the Plan for the Cotton Industry :* W. RADZIKOWSKI. *The Importance of Drainage and Irrigation in the Development of Agricultural Production :* A. OBUCHOWSKI. *The System of Ex-works Prices and the Responsibilities of Purchasing Agencies :* K. SZONERT.

Ekonomist (Serb text)

No. 6, 1953. *Peasant Purchasing Power Before and Since the War :* D. ĆOBELIĆ. *Some Considerations on the Contemporary Capitalist Enterprise :* K. MITRESKI. *The Development and Draft Plan of Yugoslav Industry in 1954 :* R. NIKETIĆ.

No. 1, 1954. *A Contribution to a General Definition of a Co-operative :* M. VUCKOVIĆ. *The Share of Yugoslavia and of Italy in the Commercial Traffic of Trieste :* V. PERTOT. *Yugoslav Foreign Trade Since the War :* M. PEROVIĆ.

No. 2, 1954. *Some New Elements in the Position of Economists :* M. MACURA. *Purchasing Credits in Our Economy :* M. ĆIROVIĆ. *U.S. Foreign Trade at the Cross-roads :* D. TODOROVIĆ. *State Intervention and American Agriculture :* V. MILENKOVIĆ.

Planovo Stopanstvo (Bulgarian text)

No. 7–8, 1953. *Marxist–Leninism in Action :* V. CHERVENKOV. *Industrial Development in the First Five Year Plan :* A. TSVETKOV and V. DONKOV. *For an Improvement in Control and Planning :* B. BOEV. *For the Full Use of Machinery in the Coal Industry :* B. KECHKOV. *Economy of State Materials—An Important Task for the National Economy:* V. VAKANOV. *Commodity Production and the Law of Value under Popular Democracy :* M. CONSTANDINESCU.

No. 9, 1953. *Speech of 8 September 1953 :* V. CHERVENKOV. *For a Further Improvement in Industrial Planning :* KH. BOYADZHIEV. *Planning the Intake of Scientific and Technical Personnel into Higher Educational Institutions :* T. AVRAMOV.

No. 10, 1953. *Karl Marx and His Theory of Accumulation :* A. SUNKOV. *Every Co-operative and State Farm Should Assure its Own Fodder Supplies:* I. NAYDENOV. *For an Improvement in Rural Co-operative Trade :* KH. KHADZINIKOLOV.

No. 11, 1953. *The Banner of the Great Socialist Revolution is Unconquerable. The National Income and its Distribution in Bulgaria :* N. VULEV. *Local and Co-operative Industry—an Important Source of Output :* N. RANGELOV and V. SAVOV. *The Basis for Calculating the Wages Fund :* N. TODOROV.

No. 12, 1953. *Speech at the Third Co-operative Farm Conference :* V. CHERVENKOV. *The Preparation of Young Skilled Workers an Important Factor in Building Socialism in Our Country :* G. ATANASOV. *The Introduction of Graphs in the Cyclic System of Coal Mining :* V. MECHKOV. *For a Wide Use of Model Blueprints :* B. BOEV. *Agricultural Planning :* G. GAPONENKO.

Probleme Economice (Rumanian text)

No. 1, 1954. *The Ideas of Lenin Illuminate the Way to Increased Welfare :* I. CHIȘINEVSCHI. *The Problem of Form and Content of Various Economic Categories under Socialism :* D. TRIFONOV. *The Mobilisation of Internal Reserves in Metallurgical Plants :* L. RADU. *For an Increase of Consumer Metalware Production in Heavy Industry :* R. LAZĂR. *Transport Planning in Rumania :* P. LUPȘE. *The Role of Advanced Technique in the Further Development of Agricultural Production in Rumania :* F. CONSTANTINESCU. *The Domination of Foreign Monopolies in the Oil Industry of Bourgeois-Landlord Rumania :* GH. BADRUS. *The Reduction of Trading Costs :* I. BOGDANOIV.

No. 2, 1954. *For a Continued Development of the Food Industry :* A. MOLDOVEANU. *The Introduction of a Régime of Strict Economy in Light Industry :* A. AVACHIAN and O. BERNSTEIN. *Aspects of the Increase of Commercial Production in Rumanian Agriculture :* E. DAN and C. MURGESCU. *The Importance of Studying Consumer Demand in Socialist Trade :* A. SOBARU. *Collaboration and Mutual Aid between the U.S.S.R. and Other States of the Democratic Camp :* M. HOROVIȚ. *The Aggravation of Conflicts on the Capitalist World Market :* A. SÎMBOAN. *The Methodology of Industrial Labour Productivity Calculations :* V. DIMITRIU.

No. 3, 1954. *The System of Contracts and Purchases—An Important Means of Stimulating Livestock Production :* D. BRUMFELD and I. MÎZGAREÂNU. *Some Fundamental Principles in the Long-term Planning of Production and Investment in the Food Industry :* E. TRATTNER. *The Attainment of Financial Index-norms, an Important Task for Industrial Enterprises :* A. TĂNASE and I. URSACHE. *In Connection with Certain Lectures on Capitalist Public Finance :* N. CONSTANTINESCU. *The Domination of Monopolies in the U.S.A. :* T. ȘATELES. *State Social Insurance Funds :* A. GHEORGHIU.

No. 4, 1954. *The 1954 State Budget :* D. PETRESCU. *Liquidate the Lag in Animal Husbandry :* A. RAMANOVICI. *The Evolution of the Participation of Co-operatives in State Purchases and Contracting :* S. KIRALY and A. VICOL. *The Expansion of Accumulation in Socialist Agriculture :* E. SOLLERTINSKAYA. *The Struggle for a Reduction in Cost-prices and Strict Economy in Soviet Industry :* V. DIMITRU. *Planning and Profit Calculation in Enterprises with a Variegated Product-Mix :* R. LUCA. *A Just Application of the New Amortization Regulations :* I. IȚICOVICI. *Social Insurance : An Important Factor in Raising the Workers' Standard of Living :* L. SAVU. *The Methodology of Industrial Labour Productivity Calculation—A Comment :* E. SCHLESINGER.

NEW BOOKS

British

BUTLIN (S. J.). Foundations of the Australian Monetary System 1788–1851. Melbourne : Melbourne University Press (London : Cambridge University Press), 1954. 9″. Pp. v + 727. 57*s.* 6*d.*

[To be reviewed.]

CAIRNCROSS (A. K.) (Ed.). The Scottish Economy. A statistical account of Scottish life by members of the staff of Glasgow University. Social and Economic Studies, II. London : Cambridge University Press, for the Department of Social and Economic Research, Glasgow University, 1954. 9½″. Pp. xv + 320. 30*s.*

[To be reviewed.]

CAMERON (B.). The Determination of Production. An introduction to the study of economizing activity. London : Cambridge University Press, 1954. 9½″. Pp. ix + 101. 18*s.*

[To be reviewed.]

CHAMBERLIN (E. H.) (Ed.). Monopoly and Competition and their Regulation. Papers and proceedings of a conference held by the International Economic Association. London : Macmillan, 1954. 9″. Pp. v + 549. 36*s.*

[To be reviewed.]

CLARK (C.). Welfare and Taxation. Oxford : Catholic Social Guild (125 Woodstock Road, Oxford), 1954. 7½″. Pp. 80. 3*s.* 6*d.*

[Reviewed in this issue.]

DONNISON (D. V.). The Neglected Child and the Social Services. A study of the work done in Manchester and Salford by social services of all kinds for 118 families whose children came into public care. Manchester : Manchester University Press, 1954. 9″. Pp. v + 152. 12*s.* 6*d.*

[The subject of this book is the work done by the various statutory and voluntary services in Manchester and Salford in connection with problems of child neglect. It is based on detailed case-studies of 118 families. The author has some interesting suggestions to make about the vexed question of co-ordination between the many organisations which are often concerned with the same family. He does not favour the creation of yet another body to wield some sort of overall authority. Instead he proposes that opportunities should be provided more informally for one of the existing agencies or social workers to assume special responsibility for the more difficult cases, by agreement with the other parties involved. "Other visitors would not abandon the family altogether but would henceforth visit as little as possible and take no action without first consulting the person in charge. Which service would be chosen to assume responsibility for any given family would depend on which worker appeared to be in the best position to help."]

EINZIG (P.). How Money is Managed. The ends and means of monetary policy. Harmondsworth : Penguin Books, 1954. 7″. Pp. 368. 2*s.* 6*d.*

[To be reviewed.]

HENRY (J. A.). Sixty Years North of the Limpopo. The story of the coming of the Standard Bank to Rhodesia and Nyasaland, with some account of its early days there. Cape Town : The Standard Bank of South Africa, 1953. 10″. Pp. 45.

[This contains an account of the origins and subsequent development of the activities of the Standard Bank of South Africa in Rhodesia and Nyasaland. Some picturesque details are included of the circumstances in which the Bank's work was carried on in its early days.]

FEDERATION OF BRITISH INDUSTRIES. Exports in a Buyer's Market. Report of the F.B.I. Export Sales Conference, 1953. London : Federation of British Industries, 1953. 8½″. Pp. 46. 3*s.* 6*d.*

[This contains an account of the proceedings of a conference on export sales organised by the Federation of British Industries. The discussion dealt with five aspects of the question : export opportunities, the organisation of export business, relations between exporter and importer, the export sales force and export promotion.]

FEDERATION OF BRITISH INDUSTRIES. The World Bank. Report on a visit to the International Bank for Reconstruction and Development, December 1953. London : Federation of British Industries, 1954. 8½″. Pp. 32. 2*s.* 9*d.*

[This is a report on a visit to the International Bank for Reconstruction and Development made by a delegation from the Federation of British Industries in December 1953. The report describes the general nature of the Bank's operations, paying particular attention to British participation in undertakings financed by the Bank and possible means of expanding this.]

HICKS (URSULA K.). British Public Finances, Their Structure and Development, 1880–1952. The Home University Library. London : Oxford University Press, 1954. 7″. Pp. v + 225. 6*s.*

[To be reviewed.]

HOOKER (A. A.). Grain Futures, An introduction to the U.K. markets. London: Hooker, Hampson & Reynolds (Baltic Exchange Chambers, 24 St. Mary Axe, London, E.C.3.), 1953. 6″. Pp. 16. 1*s*.

[The author describes the technicalities of the grain market and sets forth the case for futures dealing as a socially useful activity.]

INCORPORATED ACCOUNTANTS' RESEARCH COMMITTEE. Register of International Research in Accounting. London: Oxford University Press, for the Incorporated Accountants' Research Committee, 1954. 8½″. Pp. 68. 7*s*. 6*d*.

[This register is the first of a series which it is hoped will appear at regular intervals in the future. Accounting for the purpose of the register is understood in a broad sense, and full particulars are given of the scope and state of the research projects recorded.]

INSTITUTE OF COST AND WORKS ACCOUNTANTS. Employee Remuneration and Incentives. London: Institute of Cost and Works Accountants, 1954. 9½″. Pp. 70. 7*s*. 6*d*.

[A survey of the various types of wage-incentive schemes in use in British industry. The authors discuss the advantages and disadvantages of each and the conditions to which it is best suited. The forbidding format of the book, with its close print and short, numbered paragraphs, should not be allowed to distract attention from the large amount of useful material which it contains. From the economist's point of view its value might perhaps have been enhanced had the authors chosen to expand somewhat their brief references to the extent to which the various methods are actually in use in different industries.]

MOOR (O.). How to Reduce Absenteeism by Positive Planning. London: Blick Time Recorders, 1954. 7½″. Pp. 34. 2*s*. 6*d*.

[The author is the chairman of a firm which supplies time-recording equipment. He quotes estimates to suggest that avoidable lateness and absenteeism are responsible for an annual loss in production in Great Britain of some £300 million, and then goes on to give an interesting account of a variety of ways in which the problem may be tackled.]

Newspaper Reading by University Students. A Survey carried out by S. Moos, A. Laing, A. J. Obder, and P. A. Bromhead. Durham: Department of Social Studies, the Durham Colleges in the University of Durham, 1954. 9″. Pp. 55. 2*s*. 6*d*.

[This is the report of an inquiry which has already attracted a good deal of attention in the Press. It is based on a study of the newspaper-reading habits of a sample of students in the Durham Colleges. Particulars are given of numbers of each of the daily and Sunday newspapers read and bought, stated reasons for preferring one paper to another, comparison of term-time and vacation reading, differences between men and women students and between those reading arts subjects and the natural sciences, and so on. A surprising finding is the small extent to which serious weeklies are read by students, notwithstanding their apparent preference for the more serious class of daily paper.]

PANKHURST (R. K. P.). William Thompson (1775–1833), Britain's pioneer socialist, feminist, and co-operator. London: Watts, 1954. 8″. Pp. v + 228. 15*s*.

[To be reviewed.]

POLAK (J. J.). An International Economic System. London: Allen & Unwin, 1954. 8½″. Pp. vii + 179. 21*s*.

[To be reviewed.]

PREST (A. R.) assisted by ADAMS (A. A.). Consumers' Expenditure in the United Kingdom 1900–1919. Studies in the National Income and Expenditure of the United Kingdom, No. 3. London: Cambridge University Press, 1954. 12½″. Pp. xiii + 196. 42*s*.

[To be reviewed.]

SCHUMPETER (J. A.). Economic Doctrine and Method. London: Allen & Unwin, 1954. 9″. Pp. 207. 15*s*.

[To be reviewed.]

STRAUSS (E.). Sir William Petty. Portrait of a genius. London: The Bodley Head, 1954. 8½″. Pp. 260. 25*s*.

[To be reviewed.]

TOYNBEE (A. and V. M.) (Eds.). Survey of International Affairs 1939–46. Hitler's Europe. London: Oxford University Press, for the Royal Institute of International Affairs, 1954. 10″. Pp. v + 730. 63*s*.

[To be reviewed.]

TUCK (R. H.). An Essay on the Economic Theory of Rank. Oxford: Basil Blackwell, 1954. 8½″. Pp. 52. 7*s*. 6*d*.

[To be reviewed.]

WALRAS (L.). Elements of Pure Economics, or the theory of social wealth. Translated by William Jaffé. London: Allen & Unwin, for the American Economic Association and the Royal Economic Society, 1954. 9″. Pp. 620. 42*s*.

[To be reviewed.]

Indian

DAS (N.). Men Without Work. An essay on unemployment. Eastern Economist Pamphlets, No. 21. New Delhi: The Eastern Economist, 1953. 9″. Pp. 44. Rs. 1.

[In this interesting and well-argued pamphlet, the author considers the chief categories into which unemployment in India can be divided and suggests suitable short-term and long-term remedies for the problem. He points out that rural and urban unemployment are closely related to each other, since it is the decline of village industry and the pressure of population on the land which induces migration to the towns. He quotes some depressing figures showing that while the urban population increased by nearly half between 1941 and 1951, there has been scarcely any appreciable increase in factory employment, at least since 1947. While not disputing that shortage of capital lies at the heart of the problem, Dr. Das calls attention to the anomaly that even such industrial capacity as exists has recently not always been fully utilised on account of deficiency of demand.]

IYENGAR (S. K.). Confessions of a Village Level Worker. Presidential Address to the Thirty-Sixth All India Economic Conference. Hyderabad: Indian Economic Association, 1954. 9″. Pp. 29.

[In this presidential address to the Indian Economic Association the author criticises what he conceives to be the unrealistic character of much of current economic policy in India. He speaks with particular severity of the failure of policy-makers and administrators to acquaint themselves with the realities of economic life in the less accessible rural areas and to relate their recommendations to these realities.]

MEHTA (S. D.). The Cotton Mills of India, 1854 to 1954. Bombay: The Textile Association (India), 1954. 11″. Pp. 308.

[This beautifully produced volume has been prepared under the auspices of the Textile Association (India). The occasion of its publication is the centenary of the foundation of the Spinning and Weaving Company by Cowasjee Davar in 1854. It represents the results of a great deal of research on the part of Dr. Mehta and his assistants, who have been able to cast new light on many aspects of the history of the industry, particularly in its earlier years.]

MUKHERJEE (R.). The New Czechoslovakia. An Indian sociologist looks at Czechoslovakia today. Bombay: Current Book House, 1952. 8½". Pp. 104.

[A survey of the current political, economic and social conditions in Czechoslovakia. The author is enthusiastic about the ideals and achievements of the present regime. His book is based largely on material collected during a visit to Czechoslovakia in 1949.]

RANADIVE (B. T.). India's Five-Year Plan. What it offers. Bombay: Current Book House, 1953. 9". Pp. 259. 12*s.* 6*d.*

[A critique of the Indian Five-Year Plan and the Planning Commission from the stand-point of the extreme left wing. The author surveys the various aspects of the plan and what has been achieved under it, and loses no opportunity of making clear his conviction that its shortcomings have been due to reluctance to make sufficiently sweeping institutional and social changes.]

SINGH (B.). Economic Planning in India. Bombay: Hind Kitabs, 1953. 9". Pp. 155. Rs. 6.

[The author, who is Professor of Economics and Sociology at Lucknow University, has analysed the principles of the Indian Five-Year Plan. He emphasises that it is unique in its scale, covering about one-sixth of the total world population. In the first two years only 28% of the total planned for the five years has been achieved, which is partly to be explained by delays in starting and in expanding work. A main source of disappointment has been failure to find additional real resources in a country in which under-employment certainly exists. Inflationary pressures have been engendered, partly by overloading of the economy, but partly as a consequence of movements in the terms of trade and the cost of imports.]

American

BACKMAN (J.). Rate Policies and Rate Practices of the United States Post Office. Prepared for the use of the Advisory Council, the Committee on Post Office and Civil Service of the United States Senate. New York: Magazine Publishers Association, 1954. 9". Pp. 215. $1.

[The large deficits incurred by the United States Post Office since the war have recently forced the question of postal rates before the public eye. Professor Backman here narrates the history of postal-rate policy in the United States and makes certain recommendations. He finds that considerable confusion has prevailed in the past with regard to the basic principles and objectives of rate policy. He recommends that the Post Office Department should aim to cover its total costs out of revenue, including in the latter any subsidy out of taxation which particular classes of postal service may be held to deserve in the public interest. At the same time efforts should be made, as they have not been in the past, to ascertain the out-of-pocket or variable costs of handling and delivering each class of mail, and the rates for each class should, unless there is special reason to the contrary, be high enough to cover at least these out-of-pocket expenses.]

BAUMOL (W. J.) and CHANDLER (L. V.). Economic Processes and Policies. New York: Harper & Brothers, 1954. 9½". Pp. 690. $5.75.

[To be reviewed.]

BLANK (D. M.). The Volume of Residential Construction, 1889–1950. National Bureau of Economic Research. Studies in Capital Formation and Financing, Technical Paper No. 9. New York: National Bureau of Economic Research, 1954. 10½". Pp. 97. $1.50.

[The basis of the new estimates of residential construction from 1889 to 1920 which are contained in this monograph was provided by the tabulation of local building-permit data carried out by the Work Progress Administration in the 1930s. The bulk of Dr. Blank's paper consists of a detailed description of the procedure by which the permit data were boiled down into aggregative series. A crucial part in this procedure was played by the application to cities for which data were lacking of the relationship found to exist between population growth and residential construction in the cities for which building-permit data were available. Discussion of the results of the new series is for the most part postponed to a future publication. However, the findings confirm what had already appeared from earlier work, that the building boom and slump of the inter-war period were altogether exceptional in their violence. Indeed, the pattern of building from 1890 till the First World War resembled a low plateau till 1904 followed by a high plateau from then till 1917, rather than a recurring cycle. Interesting figures are also given showing that the boom in the building of hotels and apartment houses in the 1920s was a phenomenon having no real parallel before or since.]

CREAMER (D.), assisted by BERNSTEIN (M.). Capital and Output Trends in Manufacturing Industries, 1880–1948. National Bureau of Economic Research, Studies in Capital Formation and Financing, Occasional Paper 41. New York: National Bureau of Economic Research, 1954. 9". Pp. 104. $1.50.

[This study of changes in the ratio of capital to output in American manufacturing industries will doubtless provide the seeds for many discussions, both with respect to the future characteristics of that economy and to the prospects for development of other economies. Dr. Creamer advances the thesis that the capital ratio in most manufacturing industries rose until about 1919, and then began a decline which has continued until, at least, 1948. Using Census and income-tax data, he has compared the ratios of capital to output for ten years, spread between 1880 and 1948; and in order to compensate for the effects of changing prices, accounting procedures and concepts, he has used a variety of estimates for capital and output. The former appears as fixed, working and total capital measured in reported, current and base-year values, and the likely effects of non-measurable trends in depreciation procedures are also considered. Output is measured as the value of the product and as the value added by the industry. These corrections are sufficient to convince all but the most sceptical reader—the person who would probably be overcome by qualms about the general vagueness of concepts and measurability of capital anyway—of the validity of the thesis. In a brief, but intriguing chapter following the establishment of the declining capital ratio, a comparison is made between the ratios of man-hours worked to output and capital to output. The first series, of course, shows a decline over the entire period, the latter after 1919: the conclusion is reached that in recent decades technical innovations have been oriented towards increasing the efficiency of capital as well as labour, rather than the replacement of labour by capital.]

A Critique of the Randall Commission Report. Prepared by K. Knorr and Gardner Patterson on the basis of a conference held at Princeton University in February 1954. Princeton: International Finance Section and Center of International Studies, Princeton University, 1954. 9". Pp. 65.

[The idea behind this document is a novel and interesting one. A small conference of economists was held at Princeton at the beginning of February 1954 to discuss the report of the President's Commission on Foreign Economic Policy—the Randall Commission—which had then just been published. The present booklet is based on a stenographic transcript of the conference's discussion, edited into consecutive and readable shape. The discussion dealt in turn with the following aspects of the report: the post-war dollar problem, commercial policy, foreign aid, private foreign investment and convertibility, concluding with an assessment of the report as a whole. The discussion cannot be summarised, reflecting as it does a wide range of opinions on a wide range of topics; a document of this sort naturally cannot contain close and consecutive reasoning such as may be expected from the work of a single individual. At the same time a great many interesting points are made, and the sympathetic understanding shown by the participants of the foreign trade problems of the non-dollar world makes the discussion decidedly encouraging reading. The participants were Edward M. Bernstein, Harlan Cleveland, H. Van B. Cleveland, William Diebold, Jr., John K. Galbraith, Theodore Geiger, D. Gale Johnson, Klaus Knorr, Wilfred Malenbaum, Stacy May, Gardner Patterson, Judd Polk, Thomas C. Schelling, Herbert Stein, Robert Triffin, Jacob Viner and Clair Wilcox.]

Defense against Recession : Policy for Greater Economic Stability A statement on national policy by the Research and Policy Committe of the Committee for Economic Development. New York : Committe for Economic Development, 1954. 11″. Pp. 53.

[In the opinion of the authors of this statement, an important part in increas ing the stability of the United States economy can be played by business itsel and by state and local governments as well as by the Federal Government More stable inventory policies and greater attention to long-term trends rathe than to short-term fluctuations in planning capital expenditure are among th chief contributions which it is suggested may be made by business. At th Government level the authors favour chief reliance being placed on automati stabilisers and monetary policy, and they have a number of suggestions to mak about how the efficacy of these two instruments might be increased. They argu that changes in tax rates and public works programmes should in general b reserved for cases where there is evidence that an unusually serious or prolonge recession is in prospect.]

Finding List of Canadian Railway Companies Before 1915. Com piled by N. G. Butlin. Washington, D.C. : Association of American Railroads, and Boston, Mass. : Baker Library, Harvard Graduate School of Business Administration, 1953. 11″. Pp. 31.

[The particulars given for each of the companies are the date of its creation, the province in which it operated and the legal instrument by which it was established. The companies are also divided into aided and unaided.]

Finley (Moses I.). Studies in Land and Credit in Ancient Athens New Jersey : Rutgers University Press, 1952. 9″. Pp. vii + 332 $3.50.

[This is a study of Athenian law and usage with regard to the raising of loans of the security of real property. The chief source material consists of the in scriptions found on ὅροι, stones affixed to property to record the existence of a legal encumbrance on it. The study of these inscriptions, together with supplementary evidence derived from the orators and other sources, raises, as the author explains, some fundamental issues about the nature of commercial relations and ideas in Athens. Professor Finley argues that modern notions about relations between buyer and seller and between borrower and lender are largely inapplicable to Athenian practice. Since the creditor lacked the legal power to force a sale of the hypothecated property, he was obliged to regard this property more as a substitute for the money debt owed to him than as collateral security for it. The transaction represented therefore in some degree a carry-over from a non-monetary economy. Moreover, loans granted on the security of real property appear almost always to have been for purposes of non-productive expenditure. They differed in their fundamental character from the type of loan granted for commercial purposes on the security of ships or their cargoes.]

Jenkins (S.). American Economic Policy Toward the Philippines. Published under the auspices of the American Institute of Pacific Relations. Stanford, California : Stanford University Press (London : Geoffrey Cumberlege), 1954. 9″. Pp. v + 181. 32*s*.

[This is a detailed history and analysis of American economic policy towards the Philippines since the end of the Second World War, viewed against the back ground of economic and social conditions in the islands. Mrs. Jenkins finds much to criticise in recent American policies. In her view the influence of shifting political and strategic objectives has combined with the pressure of agricultural interests in the United States seeking protection against Philippine imports to prevent the working out and implementation of a consistent policy to solve the islands' very real economic difficulties.]

Knight (Sir Henry). Food Administration in India 1939–47. Stanford University Food Research Institute Series on Food, Agriculture, and World War II. Stanford, California : Stanford University Press (London : Geoffrey Cumberlege), 1954. 9″. Pp. 323. 60*s*.

[To be reviewed.]

Macoby (E. E.) and Fielder (F.). Saving Among Upper-income Families in Puerto Rico. A Social Science Research Center Study. Puerto Rico : University of Puerto Rico Press, 1953. 9″. Pp. 165.

[This volume contains a remarkable wealth of information about the saving and expenditure habits of Puerto Rican families with incomes exceeding $2,000 a year—a group comprising about 10% of the island's families. It is based on an elaborate sample inquiry conducted in 1950 along lines similar to those used by the Survey Research Center of the University of Michigan. Particular attention is paid to the form assumed by saving. The strong orientation of this towards investment in real estate and retail trading is considered by the authors to present an important obstacle to the industrialisation of which Puerto Rico stands so much in need.]

Mikesell (R. F.). Foreign Exchange in the Postwar World. New York : The Twentieth Century Fund, 1954. 9½″. Pp. v + 658. $5.

[To be reviewed.]

Neisser (H.) and Modigliani (F.). National Incomes and International Trade. A quantitative analysis. Urbana, Ill. : University of Illinois Press, 1953. 10″. Pp. 396. $7.50.

[To be reviewed.]

Neufeld (M. F.). Labor Unions and National Politics in Italian Industrial Plants. Cornell International Industrial and Labor Relations Reports, No. 1. Ithaca, N.Y. : Cornell University Institute of International Industrial and Labor Relations, 1954. 9″. Pp. 146. $2.

[This is a study of the development and functions of grievance committees in Italian industrial plants from 1900 to the present time. The detailed narrative is more interesting than the rather trite conclusions which the author draws from it. The chief conclusion is that the political attitude of organised labour (and to a less extent of employers also) in Italy is so different from what it is in the United States that there is little prospect in the foreseeable future of grievance committees in Italian industry operating with the same success and with the same co-operative spirit as they have done in America.]

Oliver (H. M.). A Critique of Socioeconomic Goals. Bloomington, Indiana : Indiana University Press, 1954. 9½″. Pp. 191. $3.

[To be reviewed.]

Schickele (R.). Agricultural Policy. Farm programs and national welfare. London : McGraw-Hill, 1954. 9½″. Pp. v + 453. 52*s*.

[To be reviewed.]

Taylor (P. E.). The Economics of Public Finance. Revised edition. New York : The Macmillan Company, 1953. 9½″. Pp. 565. $5.50.

[This book is a revised edition of the volume originally published in 1948 and reviewed by Professor R. C. Tress in the *Economic Journal*, December 1950. The general structure of the new edition is little different from the old. A praiseworthy attempt has been made to incorporate up-to-date factual information and to re-orient the discussion on compensatory fiscal policy so that it fits post-war inflationary conditions rather better. Not much has been done, however, to incorporate recent theoretical material. In general, the strictures raised by Professor Tress against the first edition still hold, and the new edition cannot be regarded as a "must."]

French

CHAMBERLIN (E. H.). La Théorie de la Concurrence Monopolistique. Une nouvelle orientation de la Théorie de la Valeur. Paris: Presses Universitaires de France, 1953. 9″. Pp. 329. 1,200 frs.

[This is the French edition of Professor Chamberlin's notable work *The Theory of Monopolistic Competition*. Professor Perroux has contributed a preface.]

MERCILLON (H.). Cinéma et Monopoles. Le cinéma aux États-Unis: étude économique. Paris: Armand Colin, 1953. 10″. Pp. 199. 700 frs.

[After some general observations M. Mercillon gives a short appraisal of the history of the American film and cinema industry. He then discusses the current position in the United States, Germany and the United Kingdom. M. Mercillon then makes a detailed analysis of the economic structure of the industry in the United States and considers this in the light of oligopoly theory.]

ZALESKI (E.). Les Courants Commerciaux de l'Europe Danubienne. Paris: Librairie XXe Siècle, 1952. 8″. Pp. 564. 2,000 frs.

[In this extensive study of the Danubian area M. Zaleski is concerned not only with the riparian states but also with the general problem of the area lying between Germany and Russia. He takes the economic history of the area from pre-1914 through the early years of the successor States to the Austro-Hungarian Empire to the development of post-depression policies of autarchy. Finally, he considers the current situation in which German domination has been replaced by that of the U.S.S.R. It is M. Zaleski's hope, rather than his expectation, that the disadvantages of isolation or partial isolation from the European and world economies will overcome the cramping influences of Communist ideology.]

Belgian

Premiers Eléments d'une Comptabilité Nationale de la Belgique, 1948–1951. By Le Groupe d'Études de la Comptabilité Nationale. Brussels: Institut de Sociologie Solvay, 1953. 9½″. Pp. 209.

[This valuable book outlines the problems and methods of constructing the national accounts, and will doubtless prove particularly useful to Belgian students of national-income analysis. At the same time, the authors provide detailed statistics for Belgium, covering the period 1948–51.]

La Situation Économique de la Belgique et du Congo Belge. Edited by the Kredietbank, S. A. Brussels: Kredietbank, 1954. 8½″. Pp. 92.

[This useful little survey of economic conditions in Belgium and the Belgian Congo is amply documented with statistics. The post-war data include statistics for 1952 and partial information for 1953. There is a short summary in English.]

German

FORSTMANN (S.). Neue Wirtschaftslehren, Theorien und Hypothesen. Berlin: Duncker & Humblot, 1954. 9½″. Pp. v + 512.

[This scholastic contribution to the German literature on the New Economics provides some evidence of the author's acquaintance with a good proportion of the seven hundred publications cited at its end. The exposition is extremely abstract, occasionally mathematical and generally intended only for the more advanced and patient readers. A sidelight is cast on German academic life in a preface by Adolf Weber who, in commending the book, notes that already in an earlier work published in 1943 Forstmann had quoted certain Jewish authors with approval.]

HEIMANN (E.). Wirtschaftssysteme und Gesellschaftssysteme. Tübigen: J. C. B. Mohr, 1954. 9½″. Pp. v + 250. DM. 18.

[This book is concerned with the Great problems of life: freedom, liberty, socialism, progress. The larger part of it is already available to English readers in articles that have appeared in *Social Research* and in a number of volumes of essays.]

HOFMANN (W.). Die Volkswirtschaftliche Gesamtrechnung. Berlin: Duncker & Humblot, 1954. 9″. Pp. 217.

[This is a succinct exposition of the methods used in constructing social accounts and their history. Many of the theoretical problems are discussed, including that of the relative advantages of alternative summary measures of the underlying transactions, but little attention is given to the practical problems of obtaining the estimates. There is also a chapter on the deflation of the accounts to obtain estimates of real movements corrected for price changes.]

OPPENHEIMER (F.). Der Staat. Vierte Auflage. Stuttgart: Gustav Fischer, 1954. 8½″. Pp. 138.

[This is a reprint of the late Professor Oppenheimer's work on politics, the first edition of which appeared in 1909 and was in continuous use till 1938. In that year this work, together with many others, became unpopular, and Professor Oppenheimer subsequently settled in the United States where he was able to continue his researches in the social sciences. The book, of course, suffers from its age, but there are obvious reasons for welcoming this reprint.]

Swiss

ZELLER (W.). Die fiskalische Belastung des Motorfahrzeugverkehrs mit besonderer Berücksichtigung der schweizerischen Verhältnisse. Winterthur: Keller, 1954. 8½″. Pp. 149.

[In this primarily empirical study Dr. Zeller compares the taxes paid by motorists in Switzerland with the maintenance and construction costs of the roads they use. He considers various reasons for taxing motorists, that they can bear the taxes (which are in the nature of a luxury tax), that they should cover the full costs of the roads they use, and that they should not be at an unfair advantage as compared with the railways which have to bear the costs of their permanent way. However, no very clear conclusion emerges.]

Italian

ANTONELLI (G. B.). Sulla Teoria Matematica della Economia Politica. With an Introduction by G. Demaria and Notes by G. Ricci. Milan: Malfasi, 1952. 9½″. Pp. 124. Lire 1,000.

[This is a reprint of a paper by a neglected mathematical economist, first published in 1886. There is an introduction by Professor Demaria and a commentary (much longer than the paper itself) by G. Ricci.]

GAMBINO (A.). Questioni di Teoria e Tecnica Monetaria. Padua: Cedam, 1953. 10″. Pp. 129.

[A volume of monetary essays, including one on "Liquidity" and another on "The supply of money as the Achilles heel of the Keynesian system."]

GRIZIOTTI (B.). Saggi sul Rinnovamento dello Studio della Scienza delle Finanze e del Diritto Finanziario. Milan: Giuffrè, 1953. 10″. Pp. 437. Lire 2,000.

[This volume of financial essays opens with a long paper in which Professor Griziotti surveys the development of public-finance studies in Italy over the last half century, a development in which the author himself has taken a leading part as teacher, as writer and as editor of the *Rivista di diritto finanziario*. The other essays, most of which deal with questions of method and with fundamental principles, exhibit the author's characteristic approach of constantly linking the economic aspect of public finance with the legal and political elements.]

LUZZATTO (G.). Studi di Storia Economica Veneziana. Padua: Cedam, 1954. 10″. Pp. 310. Lire 2,000.

[These essays by Professor Luzzatto have been collected and published by his colleagues on the occasion of his retirement from the Venice chair of economic history. The writings included range over the whole period of Venetian history from the eleventh to the twentieth century. After some papers on the port, shipbuilding and shipping, there follows a group of essays on the methods in which capital was raised for overseas ventures; a final group deals with public debt, currency and banking and also with the reliability of fourteenth-century economic statistics.]

Swedish

WOLD (H.). A Study in the Analysis of Stationary Time Series. Second edition, with an appendix by P. WHITTLE. Stockholm: Almqvist & Wiksell, 1954. 10″. Pp. v + 236. Sw. kr. 38.

[To be reviewed.]

Spanish

SARDÁ (J.). Uniones Aduaneras y Uniones Economicas. Madrid: Bibliteca de Ciencias Socialies, 1953. 7½″. Pp. 233. 60 pesetas.

[The first part of this book is devoted to an account of nineteenth-century experience with partial or complete economic unifications: the Zollverein, the Austro-Hungarian and Swiss Customs Unions, and the economic unifications of Italy. The second part deals with more recent times and contains discussions of the incorporation of Austria and Czechoslovakia into the German economic system in 1938–40, of Benelux and of recent steps towards European economic unification, including the European Payments Union. The appendices include a brief essay on the theory of economic union and a full bibliography of recent writings on the subject.]

Official

BRITISH

FERGUSON (S. M.) and FITZGERALD (H.). Studies in the Social Services. History of the Second World War, United Kingdom Civil Series, edited by Sir Keith Hancock. London: H.M. Stationery Office and Longmans, 1954. 10″. Pp. ix + 367. 22*s.* 6*d.*

[To be reviewed.]

GENERAL REGISTER OFFICE. Census 1951, England and Wales. County Report, Middlesex. London: H.M. Stationery Office, 1954. 13″. Pp. 69. 20*s.*

GENERAL REGISTER OFFICE. Census 1951, England and Wales. County Report, Essex. London: H.M. Stationery Office, 1954. 13″. Pp. 117. 25*s.*

[These are the second and third of the County Reports of the Census to be published. Both Middlesex and Essex have increased their population substantially since 1931, in contrast with the County of London, where the population has declined. The number of persons per room has declined between 1931 and 1951 from 0·84 to 0·75 in Essex and from 0·80 to 0·74 in Middlesex. As in the country as a whole, this decline is almost exclusively the result of the increase in the proportion of the population living in smaller households, the latter being on the average housed at a lower density. Little change is shown over the last twenty years in the number of persons per room in households of given size.]

CANADIAN

RESTRICTIVE TRADE PRACTICES COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. Report Concerning an Alleged Combine in the Distribution and Sale of Gasoline at Retail in the Vancouver Area. Ottawa: Department of Justice, 1954. 9½″. Pp. 165.

[This is a factual report similar in style to others recently published by the Restrictive Trade Practices Commission. The Commission is not expected by its terms of reference to recommend prosecution or non-prosecution, but on the basis of its finding that the allegation of a combine was substantiated, it makes a number of suggestions with regard to remedies which it considers to be desirable and practicable in the present case.]

RESTRICTIVE TRADE PRACTICES COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. Report Concerning Alleged Instances of Resale Price Maintenance in the Sale of China and Earthenware. Ottawa: Department of Justice, 1954. 9½″. Pp. 79.

[This report concerns alleged attempts at resale price maintenance on the part of a Canadian firm which acts as agents for British manufacturers of pottery. The desire of the firm that the suggested resale prices should be observed by merchants is said to have been due to their view that "price uniformity is necessary to avoid what is termed 'confusion' in the sale of goods classed as a prestige line of pottery."]

AMERICAN

The Federal Reserve System, Purposes and Functions. Third Edition. Washington, D.C.: Board of Governors of the Federal Reserve System, 1954. 8″. Pp. 208.

[This is the third edition of a handbook, expository rather than critical in character, designed to describe the general principles of operation of the Federal Reserve System. It may be recommended as a lucid and up-to-date introduction to the subject.]

Income Distribution in the United States by size, 1944–1950. A supplement to the Survey of Current Business. Washington: United States Department of Commerce, 1953. 11½″. Pp. 86. 65 cents.

[The figures here presented and commented upon are intended to be the first of a regular series which will evidently become a standard reference. The basic tables are comparatively brief, and most of the space is occupied by descriptions of methods and sources and commentary on the results. Figures are given of the size-distribution of income before tax in 1944, 1946, 1947 and 1950. Post-tax figures are calculated for 1950 only. Separate tables are given of income distribution among the three categories, non-farm families, farm operator families and unattached individuals. A striking finding is the lack of any significant change between the four years studied in the pattern of distribution, as measured by the percentage share of total family income received by successive fifths of consumer units ranked by size of income.]

TENNESSEE VALLEY AUTHORITY. The Use of the Earth for the Good of Man. Washington, D.C.: U.S. Government Printing Office, 1954. 9″. Pp. 82.

[A popular illustrated summary of the report of the Tennessee Valley Authority for the year ending June 30, 1953.]

DUTCH

CENTRAL PLANNING BUREAU. Central Economic Plan 1954. The Hague: Central Planning Bureau, 1954. 9½″. Pp. 46.

[The Netherlands is one of the very few countries of Western Europe which continues to work out each year a central economic plan and to use it as a basis of economic policy. The English version of the 1952 Plan was so generally welcomed that the 1954 Plan has again been translated. In 1952 the forecast

suggested certain difficulties ahead which might have to be remedied by possible government measures, the effects of which on the economy were predicted. In the 1954 Plan no such difficulties are foreseen, and no " alternatives " are therefore analysed.]

INTERNATIONAL

EUROPEAN COAL AND STEEL COMMUNITY. Report on the Situation of the Community at the beginning of 1954. Luxembourg: The High Authority, European Coal and Steel Community, 1954. 9″. Pp. 61.

EUROPEAN COAL AND STEEL COMMUNITY. Address delivered by M. Jean Monnet, President of the High Authority, before the Common Assembly at the opening of the extraordinary session of January 1954. Luxembourg: The High Authority, European Coal and Steel Community, 1954. 8″. Pp. 18.

EUROPEAN COAL AND STEEL COMMUNITY. Second General Report of the High Authority in the Activities of the Community (13th April 1953 to 11th April 1954). Luxembourg: European Coal and Steel Community, 1954. 11½″. Pp. 144.

[These three informative and interesting documents are largely complementary. The first two deal chiefly with outlines and general principles, while the last provides a detailed statistical survey of prices and trade during the year as well as an extended account of the High Authority's own activities. The later date of the last of the three documents enables its authors to take a rather more optimistic view of certain matters which were found disquieting at the beginning of the year. In particular, some success seems to have attended the efforts of the High Authority to overcome the difficulties it experienced during 1953 in bringing about genuine competition in the steel market.]

INTERNATIONAL LABOUR OFFICE. Minimum Wages in Latin America. Geneva: International Labour Office (London: Staples, for the International Labour Office), 1954. 9½″. Pp. 184. 6*s*.

[A brief comparative analysis introduces the detailed survey of national systems that occupies the bulk of the book. It is suggested that while even in present conditions the enforcement of minimum wage-rates is capable of having a valuable effect in preventing exploitation of labour in enterprises where the level of productivity and profits would enable adequate wages to be paid, productivity is in general so low in Latin American countries that " the future of minimum wage legislation . . . is bound to be closely linked with the progress of their economic development."]

INTERNATIONAL LABOUR ORGANISATION. Workers' Housing Problems in Asian Countries. Geneva: International Labour Office, 1953. 9½″. Pp. 177.

[Standards of housing, particularly in towns, have in many parts of Asia deteriorated even below their pre-war level on account of war damage, population increase, townward migration and various other causes. This report analyses the nature and causes of the problem and describes measures currently taken by governments and other bodies in order to improve the situation. Chief perhaps among the many valuable recommendations made in the report is that priority should be accorded to the construction of short-life dwellings, since the factors of production employed in their construction—mainly unskilled labour—are in abundant supply. Construction of more permanent dwellings is in direct competition with other forms of investment, and cannot therefore proceed very rapidly.]

UNITED NATIONS. Demographic Yearbook, 1953. New York: United Nations Statistical Office and Department of Economic Affairs, 1954. 11½″. Pp. 441. 47*s*. 6*d*.

[In accordance with its now established practice of concentrating each year on a particular aspect of demographic statistics, the yearbook in its present issue contains statistics on population, births, deaths, marriages and expectation of life. The figures on expectation of life are the result of new compilations. There is also a full bibliography of sources of demographic statistics. No figures are included this year on migration, marital status, fertility and a number of other topics which have been covered in certain of the previous issues.]

UNITED NATIONS. Economic Survey of Asia and the Far East, 1953. New York: United Nations Department of Economic Affairs, 1954. 11″. Pp. 161. 11*s*.

[In its present issue this report contains for the first time surveys of economic developments within the individual countries comprising the region. These country surveys occupy most of the space of the report. In the introductory discussion of the situation in the region as a whole, particular attention is given to the problem of securing finance for national programmes of development—a problem rendered more acute by the decline in the prices of many of the chief exports of the region in the last few years.]

UNITED NATIONS. The International Flow of Private Capital, 1946–1952. New York: United Nations Department of Economic Affairs, 1954. 9″. Pp. 61. 3*s*.

[This interesting survey may be considered as a sequel to a previous United Nations publication, *International Capital Movements during the Inter-War Period*, noted in the ECONOMIC JOURNAL, March 1951. Much useful statistical material has been gathered from a variety of sources, and is subjected to an illuminating analysis. Although the volume of private capital export in 1946–52 greatly exceeded that of the 1930s, the pattern of post-war lending has more resembled that of the little that did take place in the 1930s than it has that of the 1920s. The finance of public utilities by international private lending, which was once the mainstay of international investment, has now virtually ceased, and public agencies, especially the International Bank, have become the only foreign source of finance for such undertakings. The flotation of loans by governments for sale to private investors abroad has likewise virtually dried up. Direct investment, particularly in petroleum and other extractive industries, has been the chief class of private international investment since the war. Little private capital has been attracted to the poorest and most over-populated countries, and foreign investment in manufacturing has been chiefly confined to countries that are already fairly wealthy and offer sizeable domestic markets. In the opinion of the authors, both the amount and the character of private international investment since the war have been decisively influenced by the anxiety of investors to ensure the transferability of the return on their investments in a world of balance-of-payments disequilibria and inconvertible currencies.]

UNITED NATIONS. Statistical Yearbook, 1952. Prepared by the Statistical Office of the United Nations Department of Economic Affairs. New York: United Nations, 1954. 11½″. Pp. 578. $6.

[This Yearbook has now established a more or less standardised format, and the chief respect in which the present issue differs from its predecessors is in the inclusion in many of the tables of countries for which statistics were formerly not available. Most of the series are taken back to 1933.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. The State of Food and Agriculture 1953: Part II—Longer Term Prospects. Rome: FAO, 1954. 11″. Pp. 83. 5*s*.

[This report is based on national estimates or plans of food production in 1956/57. Particulars are given of the prospects of increasing production of different commodities and in different regions, and the various technical, economic and other obstacles to increased production are discussed. As would be expected, the estimates quoted foreshadow considerable increases in output, and in some cases these increases are of such a magnitude as to threaten to exceed demand at current prices by a substantial margin. In the past, however, government forecasts of agricultural production have proved to be strongly biased in the direction of excess, and for this reason, as well as others, the authors do not regard the prospect of surpluses developing as more than a possibility. However, " nothing could be more damaging to future agricultural progress than the emergence of burdensome surpluses in the next few years," and the authors therefore recommend that urgent attention be given to devising policies to cope with agricultural surpluses should these become a reality.]

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THE ECONOMIC JOURNAL

DECEMBER 1954

UTILITY AND ALL WHAT?[1]

SOME three years ago I ventured to put together, for the benefit of those whom I called my fellow-idiots, a very amateurish Child's Guide to some of the then recent writings on the broad range of subjects which I described as Utility and All That. Since that date much more has been written on these themes; some of this I have read, some tried to read and failed, some I have realised it would be useless for me to attempt. But I am still eager to hear what is being thought and said about these matters, and I thought I would take the opportunity of my visit here to open a discussion about them, even though, as anyone who has read my previous paper will know, I am in no position to do so authoritatively, or even perhaps intelligently.

Let me say at once that I do not think my own standpoint has changed much, if at all, since that earlier paper was written. In his comment on Boulding's contribution on Welfare Economics to the second American *Survey of Contemporary Economics*,[2] Samuelson launches a characteristic shaft at "a few utilitarians, drunk on poorly-understood post-Newtonian mathematical moonshine." Let me hasten to fit that delightful cap on my own head before anyone is kind enough to do it for me.

I

There seem to be three sub-tracts of this large area where the kettle of discussion has still been boiling pretty vigorously. The first is the pure theory of consumer's choice under conditions of certainty. Very pure, in the hands of the dominant schools, has this theory now become—little more, indeed, than an attempt to express the logical implications of the assumption that the consumer acts consistently in accordance with an invariable scale of preferences. As regards the terms in which the theory is to be

[1] A paper read to the Sheffield University Economics Society, February 27, 1954: Section II has been partly re-written.

[2] P. 38.

expressed, Little's attempt to retreat into pure behaviourism,[1] and to get rid of the idea of the consumer as trying to maximise something, has not, I think, caught on. The heads of the two main sub-schools—the partisans respectively of Concealed Indifference and Revealed Preference—continue to exchange mutual compliments on the elegance of one another's methods, and mutual assurances that there is no inconsistency between their several procedures and results; but each retains, naturally enough, a predilection for his own approach. Hicks delivered some lectures at the London School of Economics in 1951, the text of which I have seen and am permitted to allude to as long as I explain that the treatment in his forthcoming book will not be found to conform to it in all respects. In one of these lectures he in effect said that Samuelson's horse Revealed Preference was a wonderful performer on the flat, but was unable to jump fences.

Samuelson, on the other hand, points out that Hicks's horse Indifference Analysis requires certain luxury foods called continuity assumptions which his own hardier animal can do without; and about a year ago,[2] I suppose in response to Hicks's challenge, he succeeded in putting his horse over a fence. It turned out not to be a very high fence, being none other than the simple proposition that generally—not always, mark you, but generally—a fall in the price of a commodity, everything else remaining unchanged, will lead to an increase in the amount of it demanded. Still we know now that the animal can lift its body off the ground, even though it gets no continuity-cake to sweeten its oats.

I need hardly add that neither animal is admitted to need the smallest admixture of *cardinality*-cake with its oats. Now I have never permitted myself to question this conclusion—the conclusion namely (to drop my race-course metaphor) that in order to explain the ordinary behaviour of consumers in the market, it is not necessary to suppose that utility possesses cardinal, as distinct from merely ordinal, magnitude. That issue, in my judgment, only becomes acute in later connections. And yet, even in the present connection—individual consumer's choice under conditions of certainty—there seems to be something more to be said about it.

[1] Let me acknowledge here, as I ought to have done in my previous essay, the guidance I received from Mr. Charles Kennedy (*Oxford Economic Papers*, January 1950, pp. 124–5) in laying stress on the peculiar twist given by Little to the word "choice."

And let me mention here also the excellent review of Little's book by Mr. Kingsley Laffer in the Australian *Economic Record* for December 1951, pp. 213–29, with a large part of which I find myself in cordial agreement.

[2] In *Economica*, February 1953, pp. 1–9.

First, let me tell you a little story. When I tried, in *Utility and All That*,[1] to give an acceptable summary of the theory of revealed preference, I listed, on what seemed to be good authority, among its assumptions the assumption that "there is no collection of available goods for which, in some situation in respect of income and prices, [the consumer] will not reveal a preference over some other collection of goods." This assumption, I explained, was necessary to ensure the consequences ensured in other formulations by the law of diminishing utility and the law of diminishing marginal rates of substitution. Mr. Houthakker, who kindly vetted my text, shook his head gently at this passage, and said that if I retained it I must explain that when I said this state of affairs was assumed, what I meant was that we agreed to confine our attention to situations of which it was true. My unruly instinct was to reply, "Why the hell should I agree to do anything of the sort, unless I know already, from introspection of myself and observation of others, that a law of diminishing absolute marginal utility exists?" But I am very humble in the presence of Mr. Houthakker, and I did as I was told. I wonder if I need have done. For I have been delighted to come across, in a recent writing by a convinced and eminent ordinalist, Mr. K. J. Arrow,[2] the following nostalgic passage about the justification for the assumption commonly made that—to put it briefly—indifference curves are always convex throughout towards the origin. A common justification, he says, is that given by Hicks,[3] namely that for every commodity bundle there is a set of prices and an income-level for which that bundle will be demanded. "It may be doubted," he goes on, "that this assumption is really empirically verifiable, and in any case it is an assumption of a totally different logical order from that of utility maximisation itself. The older discussions of diminishing marginal utility as arising from the satisfaction of more intense wants first make more sense, although they are bound up with the untenable notion of measurable utility. However, their fundamental point seems well taken."

But Arrow is not the only distinguished economist whom the extraction of the tooth of cardinality has left with an ache in the gums. You may remember that in my paper,[4] basing myself on what I believed to unimpugnable mathematical authority,[5] I pointed out in simple language that repudiation of cardinal utility

[1] P. 20.

[2] *An Extension of the Basic Theorems of Classical Welfare Economics*, Cowles Commission Papers, New Series, No. 54, p. 529.

[3] *Value and Capital*, pp. 23–4. [4] *Utility and All That*, p. 18.

[5] *Inter alios*, Bowley, Allen, Hicks and Lange.

involves surrender of the claim that the consumer can compare *differences between situations*, as contrasted with comparing situations, in respect of their utility. This is a surrender which most ordinalists appear to be quite happy to make; but not so Lionel Robbins, who in the course of his generous review [1] of my paper dismisses my argument as a *non sequitur*, and claims that he *is* able to compare differences of preference without involving himself in a numerical scale. Hicks, appealed to as arbiter, has now [2] come down on my side on what I regard as the essential point. Unfortunately he then goes on, as it seems to me, to confuse the issue by taking advantage of Robbins's somewhat *outré* illustration —the ranking of expensive works of art—to re-make the old point that when we have to do with acts of expenditure which are large in relation to total money income, money ceases to serve as a satisfactory external measuring-rod of utility, and we have no other available. That is true, but as it seems to me irrelevant to the point at issue.

But I must not crow prematurely over Robbins, for I must now draw your attention to another recent development, of which, when he wrote his review of me, he was presumably unaware, or he might have called it to his aid. In my former paper I ventured at one point to ask a somewhat ironic question. " Will the semantic snarl [about ordinalism and cardinalism] " I asked, " perhaps be resolved by a semantic dodge? Will someone perhaps announce the face-saving discovery that all along the word ' ordinal ' has carried the connotation not only of being ordered but of being ordered in an orderly manner, *i.e.*, with a divisible space between any two ordered points? " Apparently, this is exactly what has happened. Boulding, in a footnote to his article already mentioned,[3] citing one C. L. Coombs, alludes to utility as an " ordered metric " magnitude; " we can not only order the alternative choices in a rank of preferences, but we can order the intervals between successive alternatives." " Come, come," I hope you will cry out, " that is black magic—a bare-faced attempt to have the best of both worlds." But now here is Mr. Charles Kennedy of Oxford [4] arriving apparently at a very similar position, and bringing up a very big mathematical howitzer, no less than Bertrand Russell, in support. Utilities themselves, so his argument runs, are indivisible and non-addable; and the concept of marginal utility is bosh. Nevertheless, the distances between

[1] *Economica*, May 1953, pp. 99–111.
[2] *Second Survey of Contemporary Economics*, p. 10, n. 11.
[3] *Economica*, May 1954, p. 155.
[4] " Concerning Utility," in *Economica*, February 1954, pp. 48–56.

pairs of *magnitudes* of utility can be subjected to a mysterious process called " relational " addition or subtraction. So having murdered marginal utility to please the rigid ordinalists, we can quietly slip into his place *not* the wretched Hicksian changeling of a law of diminishing marginal rates of substitution between an infinity of different commodities, but an actual law of diminishing distance between magnitudes of utility, and can then proceed exactly as we used to do before.

On the strength of an earlier article of his, to which I shall allude again presently, I had written to Kennedy offering to send him the club tie of my Cardinal Club. In kindly affording me a preview of his later article, he offered me instead a place in his rival establishment, possessing, so he claimed, all the same amenities, but not insisting on the same initiation rites. After careful reflection, I have felt obliged to decline; for, fortified by a letter from that excellent mathematician and economist Professor Charles Carter, I still seem to find myself free from the fundamental trouble which appears to have driven Kennedy to found his highly peculiar establishment. He, apparently, cannot permit himself to conceive of two utilities being merged (Carter's word) together to form a single whole—for him they can simply, so to speak, be laid side by side.[1] Hence the need for his detour through his queer " relational " world. Rough and woolly (Carter's word again) as I know my own valuation processes to be, I feel no need to follow Kennedy in his journey, nor see any reason to believe that if I did so my valuations would gain in clarity and crispness.

And now, before leaving this sub-tract of the individual consumer under conditions of certainty, let me call one more witness [2] in defence of my own obstinacy. In an important recent paper on Complementarity,[3] which I must admit myself to be very far from having assimilated, I find the distinguished mathematical economist Professor Georgescu-Roegen taking a very tolerant attitude towards the cardinality of utility, and giving equality of attitude towards the cardinality of utility, and giving equality of treatment to the Edgeworth–Pareto definition of complementarity

[1] *Op. cit.*, p. 49.
[2] There is yet another witness whom I might call, but I hesitate to do so lest he should embarrass me by proving too much! In an article in the *Quarterly Journal of Economics*, August 1952, pp. 366–84, that noted *Scottish metaphysician* Professor *Marcus Fleming* claims to establish the cardinality, not of utility but of welfare, by means of an intricate argument which he regards as being equally valid whatever view is taken of the nature of welfare—even, for instance, if it is conceived as consisting exclusively in loving-kindness.
[3] *Southern Economic Journal* (U.S.A.), July 1952, pp. 1–20.

which assumes it and the Hicks–Allen definition which does not—indeed, in effect, giving primacy of treatment to the former. For, says he in a footnote,[1] " evidently the point of view that measurability of utility is not necessary anyhow for a theory of consumers' equilibrium still largely prevails. It is, however, very weak scientifically. Could we refuse to take account of animals with more than two feet, on the ground that two feet only are necessary for walking ? " It is on the note struck by this homely metaphor that I should like to bring this section of my remarks to an end. I cannot help thinking, and in this too I acknowledge gratefully a stiffening received privately from Professor Carter, that in this field of consumer's choice under conditions of certainty there has been a good deal too much hacking about with Occam's razor. It is not, I have agreed, until we reach other pastures that the issue of the measurability of utility becomes of great practical importance. But the primary business of the economist is to understand the world, not to set it right; and it still seems to me to accord better with what we know about ourselves and other people to suppose that the consumer goes about equipped with a law of diminishing absolute marginal utility from individual commodities and from real income in general than to suppose that he goes about clad in a ready-made network of innumerable marginal rates of substitution. The fact that the latter hypothesis, the more complicated of the two psychologically, happens to be the more economical logically,[2] affords no guarantee whatever that it is the nearer to the truth.

II

The next region in which the kettle of discussion still seems to be boiling vigorously is that concerned with the behaviour of people when faced with choices involving uncertainty. I shall not linger very long here, for alas ! much of the steam emitted floats well above my head. An admirable guide for the idiot to the whole region, though one which makes considerable demands upon him, and though I do not agree with every word that is written in it, is Arrow's essay *Alternative approaches to the theory of choice in risk-taking situations*.[3] I shall confine myself to those

[1] *Loc. cit.*, p. 2, n. 7.

[2] At Mr. Baumol's suggestion, I have substituted these words for those which I used in my lecture, namely " the neater mathematically." For indeed, as Hicks has admitted (*Economica*, May 1954, p. 157), the ordinal set up appears to be by no means mathematically neat.

[3] Cowles Commission Papers, New Series, No. 51 (1952).

treatments which are content to deal in terms of measurable probability, and which accordingly have a bearing on the subject I have just been discussing—the measurability of utility.

Here the position seems to be this. Two pairs of eminent mathematical economists, Messrs Neumann and Morgenstern and Messrs Friedman and Savage—I shall allude to them henceforth as N and M, and F and S—have in recent years been maintaining that a plausible account of the way people behave in the face of uncertainty is to say that they act as if they were trying to maximise the mathematical expectation of utility, *i.e.*, the average of the several utilities promised by the several possible outcomes of their action, each utility being weighted by the probability of its occurrence. I do not think either pair of authors maintains either that people always act in this way, or that, when they do, it is always as a result of elaborate conscious calculations; like many other economic theories, the theory is put forward as an account of *reasonable* behaviour, to which actual behaviour in the mass may be supposed to approximate. If the theory is valid, it can be shown to require, in a way that the theory of choice under conditions of certainty does *not* require, that the utilities of which the expectation is thus averaged are measurable things, *i.e.*, that once we have decided on a scale and a point to start from, they must be expressed by a particular series of cardinal numbers. To repeat the very simple illustration given in my previous paper, if a man cannot make up his mind between the certainty of event B and an even chance of events A and C, that means that to him the difference of utility between A and B is equal to the difference of utility between B and C; if the chance were 2 to 1 in favour of A, that would mean that the utility difference AB is one-half the utility-difference BC; and so on. *Pace* Mr. Kennedy, we are back in a cardinal world.

But is the theory sound ? Let me begin by recording that that famous inquisitor Professor Samuelson began by urging certain technical objections to it, which he has since withdrawn [1] as a result of having persuaded himself to swallow a little pill which he calls " the strong independence axiom." What this appears to mean, roughly speaking (I am not attempting to be watertight), is that if a man prefers an even chance of A and C to an even chance of B and C, we can be sure he prefers A to B; his ordering of A

[1] *Utility, Preference and Probability* (abstract of paper read at conference on " Les Fondements et Applications de la Theorie du Risque en Econométrie," March 1952. Cf. also " Probability, Utility and the Independence Axiom," in *Econometrica*, 1952, pp. 670 ff.).

and *B* is not " contaminated " by bringing *C* into the story. That certainly seems to me to slip down the throat all right. It also seems to me that Samuelson is somewhat too coy about the way his admission brings back cardinality into the picture; but I agree with what I take to be his view that this rather esoteric point is not really the heart of the matter, and that we must dig deeper.

Does the theory find room for the familiar phenomena of fair (or nearly fair) gambling and insurance? We all know Marshall's answer [1]—plenty of room for insurance but none for gambling. This is because in Marshall's hands the theory is combined with a law of diminishing marginal utility of income, from which it follows straight away that an even chance of, say, £50 or £100 is a less efficient generator of mathematical expectation of utility than a certainty of £75. Marshall therefore calls gambling an " economic blunder "; but it is not at all clear that he is entitled to do so, for he goes on to admit that the pleasure associated therewith may exceed the loss of expected utility, and he falls back in the end on the moral judgment that this pleasure is of an unwholesome kind. In any case the theory becomes in his hands a theory of—in some sense—*proper* behaviour rather than of representative actual behaviour.

I do not think the attitude of N and M differs greatly from that of Marshall. They are aware that their theory leaves something out, and at the end of the appendix to the second edition of their book [2] they hold out a hope that their treatment may some day be extended to include it; but so far as I am aware they have not yet seen their way to make the extension.

F and S,[3] on the other hand, claim to have incorporated gambling firmly within the four walls of the theory by dropping the assumption of a continually decreasing marginal utility of income. A fairly poor man, so the argument runs, living in a tract where this marginal utility *is* decreasing, will take out insurances and eschew small gambles like a good Marshallian; but he sees some way ahead of him, so to speak, a tract wherein, as he lifts himself into a new social class, the marginal utility of income will increase. For him therefore to make a bold gamble whose successful outcome would land him in this tract may be perfectly consistent with the theory. A quite rich man, on the other hand, who has left this tract behind him or never trodden it, while he will also take

[1] *Principles*, pp. 135, 843.

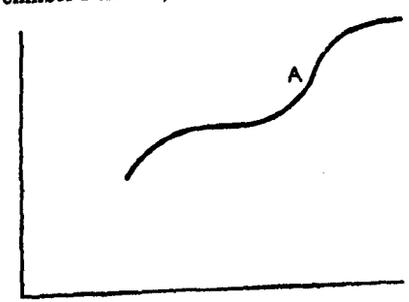
[2] *The Theory of Games and Economic Behaviour*, 2nd edition, p. 632.

[3] " The Utility Analysis of Choices Involving Risk," in *Journal of Political Economy*, 1948, pp. 279–304; reprinted in A.E.A. *Readings in Price Theory*, pp. 57–96.

out insurances, will not be attracted by gambles of any kind—for him the marginal utility of income is again decreasing.[1]

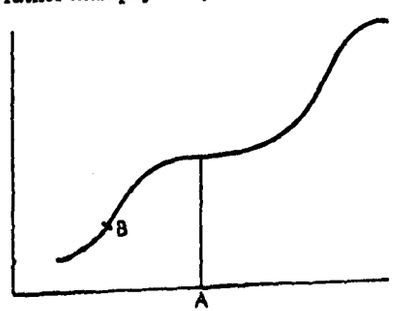
More recently Mr. H. Markowitz [2] has produced an ingenious variant of the F and S hypothesis according to which, for every individual *whatever his place in the income-scale*, the marginal utility of income appears as increasing for small additions to his customary income and decreasing for larger ones, while for small *deductions* from his customary income it appears also as increasing and for larger ones as decreasing.[3] Thus the Markowitz man will always take out insurances, while the F and S man will not do so when he is on the " climber's tract "; and the Markowitz man will always be ready for a *small* flutter, which the F and S man seldom is.[4]

[1] Thus the representative curve of *total* utility of income is supposed to be of this shape (*A* = " climber's tract ").



" The Utility of Wealth," in *Journal of Political Economy*, 1952, pp. 151–8.

[3] Thus for every man, *A* being his actual income, the curve of *total* utility of income is like this. The inflexion *B*, which seems to me the most dubious of the three, may be interpreted as meaning that the man will stand the chance of a *frightfully* large loss rather than pay a *large* insurance premium.



[4] I have a certain tenderness for the Markowitz variant, because forty years ago, feeling rather revolutionary, I suggested that, since everybody feels he could very easily do with a bit more money than he has got and only with difficulty with any less, the curve of marginal utility of income must be regarded as kinked ⌞ at the point of existing income; only to find myself outdone by a very " orthodox " economist, Sir Sydney Chapman, who was, I think, the first to champion the notion of increasing marginal utility over a certain range. See my *Study of Industrial Fluctuation*, p. 135, and Chapman in *Economic Journal*, 1912, pp. 25–35.

Let us suppose for the moment—I do not want to pre-judge the question—that we can accept either the F and S or the Markowitz hypothesis, or perhaps some other variation on the same theme. The question still arises, does that dispose of the whole issue? In other words, was the law of diminishing utility of income the sole obstacle to our accepting the principle of maximisation of mathematical expectation of income as an all-embracing explanation of representative action, or at least of rational action, in the face of uncertainty? I do not believe that it was. Let us allow ourselves for the moment to suppose the marginal utility of income to be *invariable*, so that there is no discrepancy between the mathematical expectation of income and the mathematical expectation of utility derived therefrom. It seems to me probable that we should still find some people taking a pleasure in facing uncertainty and others a displeasure, Mr. *A* still preferring the certainty of £75 to an even chance of £50 or £100 and Mr. *B* the reverse. In framing something which is much more important than our theory of fair gambles, namely our theory of business enterprise and profits, we should still have to take this diversity of attitude into account. And we should still, I think, do well to pay special heed to the old suggestion that, without positing more inconsistency than it is decent for human nature to display, we should expect to find the representative man approximating more closely in his business life to Mr. *A* the lover of certainty, even though in his leisure hours he sometimes puts on the motley of the gambler Mr. *B*. Thus, even on our provisional assumption of an invariant marginal utility of income, we might well find that, in his business life, an uncertain prospect yielding an expectation of say £80 or £90 was needed to make him turn his back on a certainty of £75.

For this reason, *i.e.*, because they ignore the pleasures or pains of uncertainty-bearing *per se*, I am less excited than, as a member of the Cardinal Club, I should wish to be by the additional evidence in favour of cardinalism which has been turned out by the N and M and F and S machines. But what I find it hard to see is why F and S themselves, who, as I have said, claim to account for the phenomena of gambling without having recourse to those pleasures or pains, should be so concerned to proclaim that their results carry "no welfare implication at all," [1] even for the individual.

[1] "The Expected Utility Hypothesis and the Measurability of Utility," in *Journal of Political Economy*, 1952, p. 473. Likewise Mr. Alchian, in his useful contribution to this debate (*American Economic Review*, March 1953, pp. 27 ff.), commits himself to the view that "the utility discussed in this paper has literally nothing to do with *individual, social or group* welfare, whatever the latter may be supposed to mean" (*loc. cit.*, p. 50, my italics). Mr. Baumol's similar disclaimer (*ibid.*, May 1953, pp. 415–16) is at least followed up by a welcome concession that "old-fashioned cardinal utility is neither meaningless nor pointless if not taken too literally." Mr. D. Ellsberg's objection (ECONOMIC JOURNAL, September 1954, p. 549) to admitting the relevance of the N and M analysis to the evaluation of welfare seems to depend rather on an epistemological argument about the relation between "concepts" and "operations" which I am probably not competent to appraise but by which on first reading I feel far from convinced.

I am very doubtful whether they have produced the baby they say they have produced, though if I thought they had I should welcome him with open arms. *They*, having as they believe produced the baby, are inclined to treat him as a little illegitimate of no account in the world, and even to apologise for calling him by his true and honourable name Utility, for fear of suggesting that he is of some normative interest. Surely in this disclaimer they go much too far.

III

With that impertinent remark I reach the third, last and most diffused region of debate, the connection between individual utility and social welfare. I will try to focus my remarks round two questions only. (*a*) Is it sensible to try to distinguish between real income and economic welfare (conceived, of course, like real income, as a flow per unit of time)? (*b*) Is it sensible to try to distinguish between economic welfare and welfare in general?

(*a*) According to Boulding,[1] "the attempts which have been made to define a concept of 'real income' which should be in some sense independent of its distribution have been generally abandoned." I think he had better wait till he sees Hicks's new book before he makes too sure. I do not wish to make light of the index-number difficulties which arise when we attempt to correct movements of aggregate money incomes for changes in prices; but it seems to me that these difficulties are frequently marginal, and that there is hardly any branch of economic analysis which cannot be reduced to chaos if we insist on taking them too tragically. Over a very large range of cases it seems to me that statements such as "the real national income has increased, but its distribution has changed for the worse" are likely (whatever the grounds on which we suppose ourselves to be basing the second half of the judgment) to make quite good sense.

It is, I think, Little's refusal to distinguish between objective

[1] *Second Survey of Contemporary Economics*, p. 13.

real income and the flow of welfare [1] that has laid him open to the formidable attack by Mr. Kennedy [2] of which I must now try to give you a simplified account. You will remember Little's criterion for judging whether one economic situation B is better than another economic situation A. B is better than A, he says, if there is a situation A', reachable from A merely by redistributing money income, and such that (i) distribution is roughly the same as at B and is judged to be at least no worse than at A, and (ii) everybody is better off at B than at A'. Now this, says Kennedy, will not do. The logical sequence involved—B is better than A', A' is at least no worse than A, therefore B is better than A—implies that A' is judged to be no worse than A because distribution is judged to be no worse at A' than at A. This means that the plain man, or Mr. Malenkov, or the Archangel Gabriel, or whoever is supposed to be in charge of the proceedings, is, in comparing A' with A, either ignoring everything except distributional considerations—ignoring total utility considerations, let us express it—or is capable of weighing up total utility considerations against distributional ones and striking a balance. In either case, says Kennedy, there seems no reason why he should not be able to do directly, as between B and A, what he is implicitly assumed to be doing as between A' and A; the circuitous route through A' turns out to be completely otiose and unhelpful.

In correspondence with Kennedy I tried to put up a case in Little's defence; but I was bowled out. For Little is difficult to help. It would seem that, if he is going to treat A and A' as equivalent except for the scheme of distribution in force, he must be assuming that *something* more fundamental than the total of money income has remained unchanged between A and A' when the distribution of that flow is changed; but it is by no means clear what that unchanged something is. From the fact that what he says *is* changed is "the distribution of welfare" one is tempted to infer that what he thinks is unchanged is the total of welfare; but that will not do, for, in the case where distribution is judged to be actually better at A' than at A, it seems clear that he would have to say that the total of welfare has increased. Nor will he permit us to say, as I think Hicks would, that what is unchanged is real income, conceived of as something different from welfare.

On his own principles I can see no escape for him; the graven

[1] *A Critique of Welfare Economics*, pp. 11–12, 273.

[2] "The Economic Welfare Function and Dr. Little's Criterion," in *Review of Economic Studies*, No. 52, pp. 137–42.

image which he has set up in place of all those he has cast down seems to fall with a loud crash to the ground. But the whole trouble vanishes if only we allow ourselves to think of economic welfare and real income as different things, the magnitude of the former depending not only on the magnitude of the latter but on its distribution. That, however, of course implies the making of inter-personal comparisons of utility, and that in turn—though Little, as I noted in my previous essay, does not seem to realise it [1]—implies, so I still believe, taking a cardinal view of the nature of utility.

(*b*) I come to my last question—may I, or may I not, be allowed to keep that distinction between economic welfare and other kinds or forms of welfare which I have ventured to underline by coining for the former the fancy word ecfare? Professor Robbins, in his review of my paper, says that I must not; and he has no difficulty in illustrating, what has always been admitted, the difficulty of drawing a clear line. But let me explain again briefly why I should like to keep the distinction if I can. It is because I think the economist, on the basis of judgments which are judgments of fact and not of value, can hope to make useful statements about some, though not all, of the consequences for human happiness of economic changes, *including changes which entail or consist in a change in the distribution of income.* Now Robbins makes it quite clear that he does not believe this. He thinks that about this latter type of change *no* statement can be made which does not involve an appeal to extra-economic considerations such as justice or political workability.[2] I am bound to say that this still seems to me a defeatist view, and one which belittles unduly the *specific* contribution which the economist can hope to make as an (official or unofficial) counsellor. The extreme positions to which it can give rise if pressed to its logical conclusion are well illustrated by the pessimistic contribution of Professor Reder to the new American Survey.[3] "Welfare economics," he says, "is in a very unhappy state"; and, a little later, "considerations of the welfare implications of envy make it impossible even to say that welfare will be increased by everyone having more of every commodity." How much better, surely, to assert as a plain matter of fact that *economic* welfare undoubtedly *will* be increased in this

[1] Cf. Arrow in his review of Little, *American Economic Review*, December 1951, p. 928: "Presumably the equivalence of two income distributions means that in some sense the *relative* utilities of different individuals are the same in the two situations. This implies, as far as I can see, the existence of some measure of utility which possesses an interpersonally comparable cardinal significance."

[2] *Loc. cit.*, p. 109. [3] *Op. cit.*, pp. 34–6.

event; and *then* to call in the Archbishop of Canterbury to smack people over the head if they are stupid enough to allow the increased happiness which might be derived from this plain fact to be eroded by the gnawings of the green-eyed monster! And I cannot at present persuade myself that such a common-sense distinction between the economic and the not is fatally undermined by the fact that the Archbishop draws a salary and that his gaiters embody scarce resources which might have been devoted to an alternative use.

D. H. ROBERTSON

Trinity College,
Cambridge.

SOCIAL ACCOUNTING IN RELATION TO ECONOMIC THEORY

I

1. IN recent years national-income analysis has become linked with the concept of "social accounts." [1] These accounts form a double-entry system of recording economic transactions in terms of which the economy of a nation can be studied as a whole made up of related parts. By taking the elementary transactions of an economic system as the starting point, they show how complex concepts, such as the national totals of income, product and expenditure, can be built up from simpler and more familiar constituents and how these concepts are related to one another. It is a formal property of accounts that they balance, *i.e.*, that their two sides are equal, and this lends itself to display in diagrams. If a rectangle is taken to represent an account and it is arranged that no lines enter the top or bottom, the lines from the two sides of the rectangle represent the receipts and payments of an account. If further, each line is made to go from the right-hand side of one rectangle to the left-hand side of another, this will demonstrate visually the fact that in a double-entry system a payment from one account is a receipt by another. This article presents diagrams, drawn up on this basis,[2] of the structure of accounts underlying the official statistics of national income and expenditure in the United Kingdom. Before describing the diagrams in detail, however, a general examination will be made of the relation between social accounting and economic theory, which will lead on to a study of

[1] In British national-income publications, social accounts appeared for the first time in the White Paper on National Income and Expenditure of the United Kingdom 1938 to 1946 (Cmd. 7099). With one interruption they have appeared every year since, though the form of presentation has varied. A good example of the influence of social accounting on national income concepts is provided by the O.E.E.C. report, *A Standardised System of National Accounts*, issued after a conference in Paris in 1951, attended by national-income experts from the participating countries and international organisations. The report has two objects: (i) to draw up a set of standard tables for providing detailed information; (ii) to provide a simple accounting system. The systematic definition of the various items in the standard tables is made to revolve around the accounting system.

[2] For a description of other national-income diagrams see "The Diagrammatic Representation of National Income Flows," by R. C. Tress, *Economica*, November 1948. See also "Alternative Presentations of the Social Accounts," by H. C. Edey and A. T. Peacock, *Accounting Research*, January 1951.

the principles which appear to underly the particular system of social accounts in use in the United Kingdom.[1]

2. Social accounts have been well described as "a meeting point for economic theory and practical measurement."[2] But although in origin social accounting was an application of economic theory, the form of this application and its development has been governed as much by considerations of what it is practical to measure as by the needs of economic theory. Social accounting[3] and economic theory are closely related but nevertheless independent systems of thought. Both are concerned with the same phenomena; both try to reduce the complexity and variety of economic behaviour to simple categories that can be conveniently used for purposes of analysis and interpretation. But they approach the task differently.

3. Social accounting is a system of description and not of explanation. It deals with the outward and visible signs of economic activity, not with inner motives or laws of behaviour. Its object is to provide a framework for classifying, summarising and providing a quantitative record of the countless individual transactions coming within the sphere of economic activity. The particular way in which the framework is constructed will depend on the uses for which it is intended, but the general method followed is that of constructing a complex of different types of transactions between different types of accounts. Social accounting has developed mainly as a record of actual transactions. Its distinctive feature has therefore been its objectivity. But it has become accepted practice to include a number of imaginary transactions. For example, an imputed rent is added to the income and expenditure of owner-occupiers, income-in-kind is added to the cash wages of employees, and the value of self-consumed produce is added to the income and expenditure of farmers. This shows that it is only a dominant, and not a necessary, feature of social accounting that it confines itself to what can be measured in a strict, objective sense. It is ready to step out-

[1] The views expressed in this article are the personal views of the writer only.

[2] Richard Stone, Appendix to *Measurement of National Income and the Construction of Social Accounts*, report of the sub-committee on national-income statistics of the League of Nations Committee of Statistical Experts (p. 113). This report is the earliest, and still the most interesting and profound, analysis of the problems of social accounting. The debt of this writer to the report and to its author is gratefully acknowledged.

[3] The term "social accounting" is used in this article to denote the theoretical system of concepts, definitions and rules of measurement governing a consistent set of statistics of national income and expenditure.

side these confines, if there are grounds for believing that it improves the usefulness and significance of the results. This does not mean that it goes beyond the boundary of practical measurement. It means, however, that it introduces concepts that are measurable only if special rules, or conventions are adopted for their measurement.

4. A digression will be made at this point in order to clarify the way in which the words "objective" and "measurable" are being used here. For something to be measurable "objectively," there must be no room for disagreement about what constitutes measurement. What has to be measured must be something that can be directly observed—for example, the amount paid by employers to employees for the hire of their services. If, however, one tries to measure the income-in-kind received by employees, there is room for argument about what should or should not be included. No objective measurement can be made. Strictly speaking, concepts such as income-in-kind should not be treated as "measurable." It seems desirable, however, to include as "measurable" concepts which, even though not capable of objective measurement, meet the following conditions: (i) that they have been defined clearly enough to enable unambiguous rules to be formulated for their measurement, (ii) that the suitability of these rules, for the purposes for which the concept is used, is commonly accepted, (iii) that only objective information is needed to apply the rules, and (iv) that there exist practical means of obtaining this information. It is in this extended sense that the term "measurable" will now be used. In this sense, however, there is a considerable element of judgment as to whether a concept is, or is not measurable. It should not be thought that "measurability" has any precise meaning.

5. For guidance on what concepts will give significance to the description of economic transactions and will help to explain why they take place, social accounting must look to economic theory. Unfortunately, from this point of view much of economic theory suffers from two defects: (i) it is expressed in terms that are not measurable, in the sense described above, and (ii) it cannot easily be alternatively expressed in terms of transactions between different types of account. The difficulty is not just that there are two systems of thought, but that the terms of the one cannot always be translated into the terms of the other and, worse still, that the two systems sometimes use the same term to mean different things. Take, for example, the concept from economic theory of the "entrepreneur maximising his profit." In describ-

ing the facts of the actual world it is not possible to identify accounting entities performing the economic function of entrepreneurship or to record the transactions connected with the exercise of this function. The term " entrepreneur," in other words, cannot be translated into a normal system of social accounting, nor can the term " profit " in the sense of the reward for entrepreneurship. What can be identified is a particular business unit, *e.g.*, a company or a person working on his own account, and the transactions of such units connected with production. It is the balance of these transactions, or the surplus on production account, that in social accounting is termed " profit." This approach differs from that of economic theory in two respects. First, it is the business unit itself, and not the owner or risk-taker connected with it, that is taken as the entity for analysis; the two are only the same in the case of a person working on his own account. Second, it is the transactions connected with production, not with entrepreneurship, that are recorded.

6. This example shows economic theory at a disadvantage. Social accounting is justified in departing from a theory that has not adapted itself to the facts of modern economic life and the separation of the shareholder from business management. A theory that does not help to explain the nature and significance of economic events taking place in the real world has no practical use. But one should not jump from this unexceptionable statement to the conclusion that economic theory should confine itself to concepts that are measurable. There are some factors which play an important part in the explanation of actual events and yet are by nature such that it is very difficult to observe them directly or measure them. Changes in taste and changes in price expectations are two examples. A complete theory of explanation, on econometric lines, would be able to relate the changes in taste and expectations to measurable factors and to omit any reference to psychological factors. In the absence of such a theory, however, it is still useful to have a theory expressed in non-measurable terms. Indeed, one can go further. Even if there was an econometric theory, it might be clumsy and awkward to handle. For explaining economic events it might be better to work with a simple theory using non-measurable concepts. Behaviourism is not always the best form of psychology for explaining human behaviour. In trying to understand the course of economic events it is important to be aware of all hypothetical possibilities. It is one of the functions of economic theory to provide such hypotheses, to speculate about them and analyse their implications.

7. The statistics provided by a social accounting system should be a stimulus to economic theory. They present in a clear and intelligible form : (*a*) some of the facts of economic life to be explained; (*b*) facts which help to explain other facts which do not appear directly in the system. The needs of economic theory therefore have an important bearing on the form of presentation. This aspect of the relation between economic theory and social accounting will be considered in more detail later on. There is, however, another aspect which will be considered first. Economic theory is concerned not only with why events happen in the way they do, but also with what they signify. It has a normative, as well as an explanatory, function. From this point of view, social accounts in their traditional form have a number of limitations.

8. From their name, it might be surmised that social accounts could be used as a guide to " social " action and that they would show the gain by society from economic activity, and the relative worthwhileness of different uses of resources, in the same sense that business accounts show a firm's profit or loss from different activities. But this is not so. The accounts are drawn up from the point of view of each accounting entity, not of society. For example, certain costs are included in government expenditure when in fact they are either intermediate services, which should be included among business costs, or are " regrettable necessities " such as defence expenditure. This line of criticism might be regarded as applying more to the particular way in which so-called social accounts are normally kept than to the technique of social accounting as such. By means of imputed transfer payments government expenditure on goods and services could be allocated, as thought fit, to the costs of producers, the purchases of consumers or treated as a dead loss.[1] Other differences between private and social costs, as in the familiar example of the smoke nuisance, could be handled in the same way.

9. But the attempt to make social accounts conform to the needs of normative economic theory could not stop here. Other defects would have to be put right. Thus, no payments of the kind made in the actual world, and hence appearing in a normal system of accounts, represent pure income in the sense required by economic theory. Nor, as a rule, do the payments represent the return on a single factor of production, if the classification of factor

[1] This would give practical effect to the concept of the government as agent of the community. The official national-income statistics in the United Kingdom have an example of a " transfer in kind "—namely, expenditure on school meals. Persons are treated as receiving a transfer income equal to the cost borne by local authorities, and this cost then appears as part of consumers' expenditure.

rewards adopted by economic theory is adopted. A further complicated set of imputations would be necessary to adjust for this. Likewise, no identifiable payments can be taken to represent "consumption" in the strict sense. Consumption, even of goods that can be used only once, does not take place when the goods are bought. More important is the fact that most goods can be used more than once, and consumption of them takes place over the period they are in use, and not at the time of purchase. Consumers' expenditure, in other words, is a different concept from personal consumption. Again, expenditure on capital account is a different concept from capital formation.[1] Finally, a general difficulty runs through all the estimation of aggregates. In order to be able to attach significance to them in terms of economic theory, it is necessary to be able to assume that, at the margin, a pound spent on purchasing the services of different factors of production or the different types of goods and services produced, represents the same amount of productive effort or economic satisfaction. But the conditions of perfect competition cannot be assumed.

10. No systematic effort has yet been made, either by devising new types of account or by extended use of the device of imputation, to close the gap between social accounting and economic theory. As a special exercise it would have great interest, but it is doubtful whether it would make the social accounts more useful for practical purposes. Some theoretical distinctions, it might be found, could not be met at all. Apart from this, the system of accounts and transactions designed to bring out the concepts of pure economic theory would not be suitable for understanding actual economic events nor for providing information on which the events might be influenced or forecast. It would involve an excessive amount of imputation of a rather special kind. Some forms of imputation, as where, for example, a rent is imputed to an owner-occupier, can be regarded as filling out an awkward gap in the flow of actual payments and receipts and making the nature of the actual world clearer without altering it.[2] If, on the other hand, expenditure is in effect transferred from one spender to another (as would be the case, for instance, if expenditure on combating the smoke nuisance was to be treated as part of the

[1] Apart from the exclusion of capital gains and losses, there is, for example, the difficulty of expenditure on transferring the ownership of existing assets. This is expenditure on capital account, but hardly capital formation.

[2] The amount of filling out required may vary considerably as between a developed industrial economy and an under-developed, agricultural economy.

costs of the activities of those causing the nuisance), or if notional amounts are deducted from accounting profit for items not part of the reward for pure entrepreneurship and these entered under a different heading, the structure of actual transactions is radically changed and the nature of the world made to appear in a new and unfamiliar form.

11. The results might be very revealing and point a valuable moral. It does not follow from the fact that imaginary transactions have to be included, for which there can be only an arbitrary basis of *measurement*,[1] that the results lose meaning. Indeed, they may gain meaning, from the point of view of economic theory, precisely because they disregard the actual flow of transactions and include special measurements. But if one is concerned to analyse how actual events do happen, and not what they ultimately signify, it is necessary to have a system limited very closely to actual happenings. Traditionally, social accounting has been confined to such a system.

12. The fact that social accounting is limited to what is measurable does not mean that it is purely descriptive in the sense that it does no more than summarise the transactions of different economic entities as reflected in their own accounting records. Different bodies keep their accounts in different ways, and if social accounting did not go beyond plain description, it would be impossible to form a consistent set of accounts for the transactions of all bodies together. It is necessary to formulate a standard accounting system. This means that all units of economic behaviour are treated not only as though each had a set of accounts of the same kind, but also as though each followed the same rules for recording *transactions in them*. This is as much a fiction as those to be found in pure economic theory. It might be termed the fiction of the "accounting man," as opposed to that of the "economic

[1] The transactions are imaginary in the sense that no trace of them as such can be found either by looking at flows of money between payer and receiver or by examining book entries in their accounts. They can still be measured, however, either by comparing them with the value of similar transactions that can be observed or by taking the value of a certain group of observed transactions as being itself the measure (as when expenditure is transferred from one spender to another). The limitation, however, is that the measurement cannot be checked against objective fact in the same way as the measurement of actual transactions, for which the records of either payer or receiver can be used. Errors of estimation apart, these two independent records should give the same measure of the value of a transaction. With imputed transactions, on the other hand, whatever the value given to them, there will automatically be consistency between the accounts of payer and receiver; the same amount is attributed to each. The estimator, therefore, has a free hand to exercise his judgment. The results cannot avoid being subjective.

man." Moreover, with a limited number of possible categories into which to fit the manifold variety of transactions in the real world, a standard system must involve arbitrariness in marginal cases. Nevertheless, for three reasons it can be claimed that the characteristic virtue of social accounting is that it is objective and descriptive.

13. The first is that imaginary transactions are included in only a few cases. From this it follows that the transactions recorded in the standard social accounts can be obtained by reclassifying what can be found in the records kept by those concerned.[1] In the second place, the social accounts are comprehensive within the chosen field of observable transactions. All transacting entities and all types of transactions are included. In measuring, say consumers' expenditure, literally everything on which consumers can spend their money is in principle included in the measurement, and the same holds true of any other total. Thirdly, the concepts on which the standard accounting system is based are familiar concepts used in everyday life, familiar that is to say in the sense that the concepts of " income " or " profit " are familiar, while that of " entrepreneurial reward " or " economic rent " are not.

14. The claim of social accounting to be descriptive is not to be taken too far. Some of the concepts used, such as stock appreciation and replacement cost depreciation, owe their place in the system as much to the belief that they improve the economic significance of basic accounting data as to the belief that they are familiar concepts likely in practice to influence business decisions.[2] In addition, all of the concepts are used with a precision that is lacking in everyday life. Since ordinary man may keep his accounts differently from the " accounting man " of social accounting theory, the value of social accounts for studying actual economic behaviour cannot be taken for granted. There are three further reasons for doubt on this score. The first is that some of the factors affecting economic behaviour, even of a strictly economic kind, cannot be expressed in the form of transactions, and so have to be left out of the accounts. For example, changes in wealth arising from a change in the market value of a person's holding of securities, or other assets, are not included as part of

[1] The amount of reclassification may be considerable. Witness the difference between the social accounting and Exchequer versions of the Government's accounts.

[2] It is clear, however, from many chairmen's speeches that business-men are familiar with the concepts and that the concepts influence their decisions. Social accounting is not out of line with the business-man, but with orthodox accounting practice.

personal income, although the extra expenditure that may result is, of course, included.

15. The second reason is that the distinctions drawn in social accounts do not necessarily correspond with those that might be shown by econometric analysis to produce the most stable relationships of behaviour. Consider, for example, the distinction between taxes on income and taxes on capital. The econometric approach would be to decide how much of the total of tax payments was paid out of income and how much out of capital by testing for the proportion that produced the most stable consumption function. The social accounting approach, on the other hand, would be, in the first place, to treat the payment of a particular tax as a whole and not apportion it. In the second place, it would decide whether or not a particular tax was a tax on income by considering, in effect, how " accounting man " would record it, if he was to keep separate accounts for his current and capital transactions. The way in which a tax-payer would treat the tax in his accounts is, of course, intimately connected with the way in which he would react to changes in the tax. But the level of a person's spending is affected by other things than income, and it is conceivable that he will spend as much as before, even while conscious that a tax has reduced his disposable income. Moreover, the same tax-payer at different times, and different tax-payers at different times, might be deemed to treat a tax in the same way in their accounts and yet react differently to changes in it. The " accounting man " is thus a convenient fiction introducing an order and stability in the classification of taxes that would be quite impossible if the classification was based strictly on the actual behaviour of tax-payers.

16. The third defect of social accounting from the point of view of studying economic behaviour is that no satisfactory means has been found of incorporating expectations or of measuring forced saving, unintentional investment in stocks or windfall profits. There is only room for *ex post* concepts. It is, of course, possible to fill in a complete set of accounts for a future period. This would represent an attempt to estimate what the *ex post* figures will be when what is now the future has become the past, and adjustments have taken place to remove any inconsistencies between present *ex ante* plans. If *ex ante* plans could be measured, the extent of the inconsistency would be shown by the inability to construct a consistent set of accounts, but not the manner and processes through which the inconsistency would be resolved. Although the entries in a set of social accounts measure flows

through time, they all relate to the same period of time. The interdependence between the different items in the accounts is, therefore, a matter of definition; it is static. The accounts do not show the income of one period as the result of expenditure in a previous period nor the expenditure of a future period as the result of present incomes. In short, they do not show dynamic relationships nor the way in which the economy moves from one state to another. The best that can be done is to group and classify transactions in ways that there is reason to believe will help in revealing relations that hold true as a matter of experience, and not just as a matter of logic. With knowledge about the empirical relations between the items in the accounts, it is possible to make forecasts of the items that are not only formally consistent, but consistent also in the light of what is known about the behaviour of the economic system.

17. Social accounting, it might be said, has the defects of its virtues. In order to fit everything into a comprehensive system and to remain objective, it is forced to adopt a rigid, uniform approach. It has to concentrate on what is accounting-wise, and this often means what is merely legally distinct, as opposed to what is economically distinct. It differentiates between what is discernibly different because of some definite, objective characteristic rather than between what is subject to variation from different economic causes or forms the basis of different economic decisions. The result is a system that is not explicitly designed to conform to the needs either of pure economic theory or the pure study of economic behaviour. It is a compromise. This does not alter its value, but it is important to recognise clearly its more humble character as that of a foundation on which to build more refined forms of economic analysis and that special adaptions are needed for special purposes.[1] Social accounts in their present form are not a skeleton key for turning the lock of every economic problem of interest and importance. But they succeed in providing a comprehensive picture of the economy in terms of clear and familiar ideas and a firm base for detailed statistics of national income and expenditure. The value, both of the broad picture and the detailed statistics, to those responsible for making practical decisions of economic policy in government and business circles has been proved by experience.

[1] The nature of these special applications depends on the nature of the economic theory they are intended to illustrate. As will be shown later, social accounts in their present form are an application of Keynesian general theory. The future development of social accounting waits on the development of a new and equally illuminating macro-economic theory.

II

18. The precise nature of a particular social accounting system can best be described in terms of: (*a*) the types of account which each transacting entity is treated as keeping and the rules for determining which types of transaction are recorded in a particular type of account; (*b*) the types of transaction separately distinguished; (*c*) the groups into which transacting entities are combined. It is under these three headings that an analysis will now be made of the system underlying the official national income statistics in the United Kingdom.

19. The types of account reflect Keynesian ideas. There is first of all a production account to record current transactions related to production. For any particular unit of economic behaviour, or transacting entity, the surplus on this account measures the gain from productive activity. For the economy as a whole it measures the domestic product. This, together with net income from abroad, gives the national income, the amount available for consumption and investment; in other words, the Keynesian equation of $Y = C + I$.[1] The next type of account is an income and expenditure account, or "appropriation" or "current" account—the name varies according to the group of transacting entities concerned. This account records the receipt and current disposal of income, and the surplus on it measures saving; in other words, it gives $Y = C + S$. Next comes a capital account to record the receipt and disposal of saving; for the economy as a whole it yields the equation $I = S$. Finally, to close the system for an open economy there is an external, or balance of payments, account for recording any transactions with the rest of the world.

20. Transactions are divided according to whether they involve: (i) purchases and sales of goods and services; (ii) transfers of income resulting from the ownership of financial claims; (iii) taxes or transfers resulting from the compulsory powers of government; (iv) grants or voluntary transfers for no *quid pro quo*; (v) transfers of the ownership of financial claims; (vi) transfers between two accounts of the same entity. Each of these main types of transaction, however, is differentiated according to the types of account between which it takes place. Thus, sales of goods and services from a production account to an income account are current expenditure; sales to a capital account are

[1] For an open economy, it will include investment abroad.

capital expenditure; sales to the rest of the world are exports. Again, taxes are divided between taxes on expenditure, taxes on income and taxes on capital, depending on whether they are paid to the Government from a production account, an income account or a capital account. Similarly, grants can be current or capital, and current grants from the income account of the Government to a production account are subsidies.

21. The types of transaction are further differentiated according to the group of transacting entities performing the transaction. For example, current expenditure on goods and services is divided between expenditure by persons and by public authorities. However, the question of separate accounts for separate groups of entities will be discussed later. First, it will be shown how consolidated accounts for all entities together can be used to reveal the basic relationships between national income, product and expenditure. Consolidated accounts are the accounts obtained if all transactions between individual accounts of the same type are eliminated, so that only transactions between one type of account and another are left. The first diagram displays the full system of transactions between the four types of account on this basis. The second diagram shows a simplified form of this system. The third diagram shows how the consolidated income and expenditure account can be built up from separate accounts of this type for separate sectors.

22. The novelty of these diagrams, compared to other national-income flow diagrams, is that they follow strictly the principle of making rectangles represent accounts. The lines in the diagrams join the rectangles only at the sides, so that the lines entering the left-hand side (receipts) are equal in value to the lines leaving the right-hand side (payments). The vertical heights of each rectangle have been made roughly proportional to the sum of receipts (= payments) recorded in the account represented by the rectangle. The diagrams offered here attempt to obtain completeness, in the sense of showing separately all the different types of transaction distinguished in the official statistics, while preserving accuracy and clarity. They do not claim to be simple in the sense that they require little intellectual effort to be understood and made use of. But the idea behind the diagrams of making rectangles strict representations of accounts is in itself a simple one.

23. From Diagram 1 it can be seen that the receipts of the consolidated production account are sales to income account (current expenditure on goods and services), sales to capital account (capital expenditure on goods and services), sales to the rest of the world or the accounts of non-residents (exports) and subsidies. The latter reduce the amount of the costs of production which a producer has to bear himself. They have the opposite effect of taxes on expenditure, which reduce the amount a producer can keep from his sales receipts. The payments of the consolidated production account consist of purchases from the rest of the world (imports), provisions for depreciation and also for stock appreciation (if the increase in value of stocks from replacing opening stocks at higher prices is included as a receipt) and taxes on expenditure. The excess of receipts over payments represents the gain from productive activity, if the economy is considered as one fully integrated firm. This gain, or "value added," is the income of the factors of production,[1] and takes the form either of payment to hired factors or of profit.[2]

24. The various receipts and payments of the consolidated income and expenditure account can likewise be traced out by reference to Diagram 1. The balancing item of this account is saving, which is carried forward as a receipt to the capital account. Other sources for the financing of gross investment are shown on the receipts side of this account, and the payments side shows gross investment, including investment abroad. All transactions with the rest of the world are shown as *receipts* or payments by the consolidated account for non-residents. Since all the accounts relate to the same period of time and each payment is matched by a receipt, the diagram is a closed network. The lines on the extreme right of the diagram link up with those on the extreme left.

25. Diagram 1 represents a "full" system of consolidated accounts in the sense (*a*) that each type of transaction is shown separately, (*b*) that receipts have not been deducted from payments of the same type, or vice-versa, and (*c*) that all receipts are shown on the left-hand side of the accounts and all payments on the right. Diagram 2, in contrast has been simplified to the extent (*a*) that some types of transaction have been amalgamated, (*b*) that there has been some "netting" (*e.g.*, income paid abroad

[1] It can be readily seen that the definition of this income, and hence of the national income, depends directly on what is "productive activity" or on what is a "factor of production." It depends, for example, on questions such as whether domestic servants are productive and housewives not.

[2] To conform with the presentation of the official statistics of national income and expenditure in the United Kingdom, the residual error is shown as a form of income. This is not meant to imply that the income figures are more subject to error than the expenditure figures.

has been deducted from income received to give net income from abroad), and (*c*) that there has been a transfer of some items from one side of an account to the other (*e.g.*, purchases abroad are shown as a payment on the right-hand side of the production account in Diagram 1 and as a negative receipt on the left-hand side of the account in Diagram 2). It can be readily seen by comparing the two diagrams that the change is only one of arrangement, not of substance. The object is to display more directly the relationship between income, product and expenditure.

26. In Diagram 2 the consolidated production account is now in the form :

Sales ($A + C + D$) *less* purchases (E), *plus* subsidies less taxes on expenditure (B).
= Value added at factor cost including depreciation
= Gross domestic income ($G + R + H$)

27. The consolidated income and expenditure account, on the receipts side, is now in the form :

Net domestic income ($G + R$) plus net income from abroad (F)
= National income

28. The connection between the payments side of the income account and a conventional table of national expenditure can also be demonstrated. By inspection of the capital account and the account for non-residents, it can be seen that :

$$\begin{aligned} L + H &= C + M \\ L &= C + M - H \\ K + L &= C - H + M + K \\ &= C - H + D - (E + N) + F \end{aligned}$$

Hence it follows that :

$$J - B + K + L = J - B + C - H + D - (E + N) + F$$

or National income ($G + R + F$) = current expenditure on goods and services (J) *plus* net domestic capital formation ($C - H$), *plus* exports (D), *less* imports ($E + N$), *plus* net income from abroad (F), *plus* subsidies less taxes on expenditure (B).

29. The relation between expenditure and income can be seen more simply and directly by comparing the left-hand sides of the production account and the income account. If an amount (N), representing that part of the total import bill which is bought directly from abroad out of the income account, is added to (A) and a corresponding amount deducted from (E), the left-hand side of the production account, together with net income from abroad (F) becomes equivalent to the left-hand side of Summary Table 1 (the Gross National Product table) in the United Kingdom national income Blue Book. This can be seen from Diagram 2 to be equal to the left-hand side of the income account, together with depreciation (H). It is equivalent to the other side of the Gross National Product table in the Blue Book.

30. It is useful at this point to turn aside from the description of the diagrams to consider the nature of the consolidated accounts and their relation to the different ways of grouping transacting entities into "sectors." The consolidated accounts are essentially accounts for the main economic activities of production, consumption and capital formation. In a simplified accounting system a particular group of transacting entities might be associated with one or other of these activities—for example, "enterprises" with production and capital formation, and persons and government with consumption. But this leads to artificiality, which it is the object of social accounting to avoid. Some services which it is desirable to include as part of the national product cannot be identified with the activities of an "enterprise" in any meaningful sense of that term. The services in question are those directly performed either by one person to another (*e.g.*, the services of domestic servants) or by persons to government (*e.g.*, the services of civil servants). There are other persons, *e.g.*, doctors and sole-traders, a part of whose activities, but only a part, can be compared to those of enterprises. Their productive activities can be distinguished from their other activities by setting up a production account for them. But to go a step farther and to treat them, in their capacity as producers, as separate transacting entities is possible only if their gain from productive activity can be divided between the amount retained in their businesses and the amount paid over to themselves as consumers. To treat the whole amount as being paid over is no solution at all; it is the same as treating the amount as a transfer between two accounts of the same entity. In practice, this is all that can be done. Similarly, there is no difference between treating government trading activities as part of an enterprise "sector" or the government sector as regards the income accruing to the government; the profits, or losses, accrue in full. To treat non-corporate enterprises as part of the sector of which institutionally they are an integral part, instead of as part of an imaginary enterprise sector, is an act of realism that requires no extra information.

31. A separate enterprise sector also means that the capital transactions of persons and government have to be given special

treatment. Those which result from their activities as producers have to be divided from the rest. For example, the capital account of the Government would have to include an item " investment in government enterprises " [1] and exclude any capital formation or change in the financial assets and liabilities of these enterprises. They would appear instead in the capital account of the enterprise sector. For Government enterprises this would be possible, since these have at least a separate accounting existence. For personal enterprises, however, it would be impracticable. It would involve making a distinction which did not exist in the real world.

32. For model building and the construction of a matrix of transactions,[2] and also perhaps for elementary instruction in the ideas of social accounting, the simplification of a single enterprise sector provides certain advantages. Examination of the accounting system underlying the official statistics of national income and expenditure in the United Kingdom shows, in contrast, a different design. All transacting entities are treated as keeping each type of account. Hence for each " sector " into which the individual entities are grouped there is at least conceptually a sector account of each type. In other words, each sector can engage in each of the activities of production, consumption and capital formation. Instead of grouping transacting entities into sectors according to their association with a particular economic activity, they are grouped according to clear and distinct differences of status and the existence of separate sources of adequate information about their transactions.[3] The advantage of this design is that natural

[1] This problem is tackled in an unusual way in the United Nations report, *A System of National Accounts and Supporting Tables* (Studies in Methods, Series F, No. 2), by means of " capital transfers " from households and the Government to the enterprise sector. Since the amount of the transfer is limited to the amount of investment in fixed assets and stocks by households and government, the financial transactions recorded in the capital account of the enterprise sector are not those of all enterprises, but only those of corporate enterprises. As an added confusion the notional capital transfers just described are included with real capital transfers, such as payments by the Government of war-damage compensation.

[2] Some examples are given in " Simple Transaction Models, Information and Computing," by Richard Stone, *Review of Economic Studies*, 1951/52, Vol. XIX (2), No. 49.

[3] At present, the three main groups are : (i) corporate trading bodies—this is subdivided between companies and public corporations; (ii) public authorities—this is subdivided between Central Government and local authorities; (iii) persons —this includes private non-profit-making bodies, such as charities, colleges, clubs, foundations, etc. If adequate information about personal income and expenditure could be regularly obtained direct from persons, there would be an opportunity for subdividing the personal sector. Ideally, sectors would be chosen to encompass all transacting entities reasonably alike in economic behaviour.

entities, such as persons, do not have to be divided between different sectors. In other words, it is more realistic.

33. The fact that in this type of accounting system there is no enterprise sector as such, and no one sector for capital formation, does not prevent production or capital formation from being shown as a whole. This can be done by means of consolidated accounts for the whole economy. The entries in these accounts can be analysed by industry or in any other way that provides useful information. Indeed, an analysis by sector does not necessarily have to be made at all. The United Kingdom system is conceptually complete, but it is not statistically complete. For example, it is implied that there is a separate production account for each sector, but details of such an account are given only for public corporations. A sector analysis of production, however, is of no particular interest. The official statistics do provide a sector analysis of capital formation and capital grants, which enables the net lending and borrowing of each sector to be obtained as a residual, but an analysis of this residual by types of financial transaction is given only for the Central Government and public corporations. A further line of advance of considerable practical interest and importance would be to analyse the financial flows between sectors, and thus to show the channels through which saving becomes the finance of capital formation.[1]

34. The official statistics do provide details of the income and expenditure accounts of each sector. The object of Diagram 3 is to display visually the system of transactions between each of these sector accounts and : (*a*) the accounts of the same type of each other sector; (*b*) accounts of a different type. The diagram is in fact an analysis of the transactions taking place within the consolidated income and expenditure account shown in Diagram 2. It will be noticed that the lines entering and leaving the rectangle, representing this account, are identical with those entering and leaving the boundary of Diagram 3. Once inside the boundary, the lines are divided into separate strands to show separately the transactions of the three main sectors of the economy. The income strands on the left-hand side are unravelled in two stages showing the redistribution between sectors of income received either from domestic production or from abroad. They then pass to a third stage showing the final disposal of income by each sector. The expenditure lines for each sector are

[1] For such a study it would be necessary to have a separate sector for financial institutions.

then combined and leave the boundary on the right-hand side in the form in which they appear in Diagram 2.

35. The first section of Diagram 3 shows the considerable redistribution of the original income of factors of production caused by the ownership of financial claims and the dividends and interest paid on them.[1] The payments and receipts are routed through a common pool. This device has two uses, one statistical, the other conceptual. Statistically it obviates the need (which existing information cannot meet) to divide the amount paid or received by a sector between the separate amounts paid to or received from each other sector and abroad. Conceptually it provides a home for certain otherwise homeless "special reserves." If the saving of corporate trading bodies is to be reckoned after deducting the amount *provided* for dividends and interest and the saving of other sectors is to be reckoned after including the actual amounts received (*i.e.*, *paid*), there is a hiatus. A part of domestic saving cannot be allocated to a particular sector. Additions to dividend and interest reserves are, therefore, allocated to a fictional sector. The same device is followed for additions to tax reserves for the same reasons.[2]

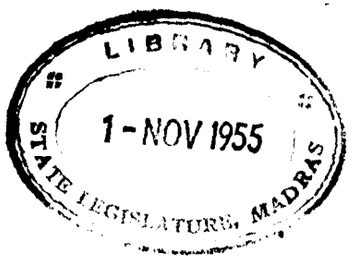
36. The lines entering the first section of Diagram 3 from the left represent the national income, considered as the sum of the different incomes of the factors of production and of income from abroad. The total value of these lines plus the value of the line entering from the right—public debt interest (T)—is necessarily equal to the value of the lines leaving the right of the first section and entering the left of the second section. They represent the national income *plus* public debt interest, when this total is considered as the sum of the incomes of the different sectors of the economy before redistribution by public authorities. The second section shows the redistributive effect of taxes on income and current grants by public authorities. The lines leaving the right-hand side of this section represent the national income, considered as the sum of the different amounts of income finally available to the different sectors for current expenditure on goods and services, current grants to abroad and saving. For public authorities there is a further source of income in the form of taxes on expenditure and a further kind of expenditure in the form of subsidies. The value of the lines finally leaving the right-hand side of the diagram is national expenditure at market prices; deducting line (B), which enters instead of leaves the right-hand side, gives the expenditure at factor cost. Thus, the net national income, the value of the lines on the left of the diagram, is linked to the net national expenditure at factor cost, the value of the lines on the right.

[1] Holders of financial claims are not treated as factors of production. From the point of view of the United Kingdom accounting system, the factors generating the national income are: (i) labour; (ii) domestic business units (which in terms of economic theory supply a combination of capital and entrepreneurship); (iii) capital assets abroad, fixed and financial.

[2] It should be noted that "tax reserves," in the sense used in the official national-income statistics of the United Kingdom, consist in part of money legally due to the Government. This element would not exist if government income was reckoned as though all taxes were paid punctually. But for the greater part they consist of amounts notionally set aside on the assumption of unchanged tax rates. The government has no legal claim to them; but the tax-payer cannot prudently regard them as part of his free reserves. Belonging nowhere, they are allocated to a sector with no existence.

D. K. BURDETT

London.



THE REDUCTION OF FLUCTUATIONS IN THE INCOMES OF PRIMARY PRODUCERS: A CRITICAL COMMENT

THE recent article in this JOURNAL by P. T. Bauer and F. W. Paish on "The Reduction of Fluctuations in the Incomes of Primary Producers" is a striking illustration of the contemporary climate of opinion about economic policy.[1] Here is a particular class of interventions with the free market the effects of which have been, they conclude, "on balance . . . to reduce both output and consumption, and thereby to reduce the world's standard of living."[2] Yet they shrink from the obvious implication of their devastating criticism of existing stabilisation schemes —that the free market should reign and government activity should be restricted to making the market freer and more effective. Instead they recommend a different gadget involving government intervention "to reduce fluctuations in incomes of particular groups of producers."

The particular plan they recommend does not in any meaningful sense stabilise the "incomes" of primary producers. In the variant they regard as best, it affects at most only cash receipts and not income, and it affects even cash receipts only because of imperfections in the capital market in the areas concerned. In other variants it adds to the uncertainties to which producers are subject by requiring them to participate in artificial lotteries in addition to the natural lottery involved in growing crops. If their plan seems superficially appealing, it is, I believe, primarily because the mathematical form in which it is expressed serves to conceal its economic substance. Accordingly, I shall try to give an alternative description of the essential elements of their plan in strictly economic terms.

In the variant they regard as best, their plan would apply to each producer individually, and would be based on the actual prices at which the products are marketed. The economic essence of the plan is that each producer would be paid for his current year's crop in two forms: for a specified fraction of his crop he would be paid in cash; for the balance of his crop he would be paid in n promissory notes (or their equivalent, such as credit entries on the books of the administering authority), one falling

[1] ECONOMIC JOURNAL, December 1952, pp. 750–80. [2] *Ibid.*, p. 765.

due in each of the succeeding n years, and each with a face value of $\frac{1}{n}$th of the value of the balance of the crop. For simplicity, let n be one, and let the fraction of the crop paid for in cash be one-half. Then the plan is to pay the producer half the value of his crop in cash, half in the form of a promissory note due one year from date. His cash receipts each year from the authority therefore equal half the value of his current crop plus half the value of his crop the preceding year. No essential change is introduced by changing the fraction paid in cash or by lengthening the period over which payment of the balance is spread.

Clearly, this plan does not affect the producer's "income" in any meaningful sense of that much-abused term, except in so far as the promissory notes carry a rate of interest different from the market rate; if they carry a higher rate of interest, the producer is subsidised the difference; if they carry a lower rate of interest, he is taxed the difference. For the rest, the plan affects solely the form in which the producer receives his income and possibly the time pattern of cash receipts. And with a perfect capital market it would not even do this, for the producer could always sell his promissory notes for cash. This plan is more accurately described as a plan for compulsory lending or as a plan for reducing fluctuations in cash receipts than as a plan for reducing fluctuations in income.[1]

These comments are for a plan that is begun without any initial compensation to the producer for receiving part of his proceeds in the form of promissory notes. Bauer and Paish apparently intend to give the producer in cash at the inception of the plan, not only the specified fraction of the value of his current crop, but also an amount equal to the value of the promissory notes that would have come due this year had the plan been in operation during the indefinite past. The effect of this method of starting the plan is to combine compulsory borrowing with the compulsory

[1] If a man is paid once a week, it is clearly not reasonable to say that his income is zero six days a week and equal to his cash receipts on the seventh. If the pay period is changed, and he is paid twice as much bi-weekly, surely his income is unchanged (minor interest effects aside). Similarly, Bauer and Paish would clearly not say that the primary producer has no income except on the day or days of the year on which he is paid for his annual crop. By the same reasoning, income in any year is not equal to cash receipts of that year; income is equal to expected or average cash receipts (less average expenses); any excess of actual cash receipts over expected receipts is a return of capital; any deficit, an amount that can be withdrawn from accumulated assets without reducing capital. More generally, income refers to a flow that can be maintained indefinitely, barring capital losses. On all this, see, for example, J. R. Hicks, *Value and Capital* (Oxford, 1939), pp. 171–88.

lending implicit in the rest of the plan: the initial amounts paid to the producer are a loan to him from the administering authority. This loan can be regarded as remaining outstanding for the duration of the scheme. Whether any particular producer is a net creditor or net debtor will then vary from year to year according as the total value of the promissory notes he has outstanding exceeds or falls short of his initial loan from the authority. If no interest is charged or paid, he loses on this account if he is a net creditor, gains if he is a net debtor.

For practical reasons, Bauer and Paish believe that it might sometimes be necessary or desirable to base the amount paid to the producer in cash on account of his current year's crop on an estimated price and estimated quantity marketed rather than on the actual price received and actual quantity marketed. Any error in the estimates would be corrected by appropriate changes in the face value of the promissory notes. So long as the accounts are kept for each producer separately, the only effect of this change is to convert the fraction of the value of his current crop that the producer receives in cash, and hence also the fraction he is compelled to lend, into a random variable: the fraction received in cash equals the initially specified fraction times the ratio of the estimated value of the crop to its actual value. In the simple numerical example discussed above, if the estimated value equals the actual value, the producer receives one-half in cash and one-half in a promissory note, as before. If the estimated value is one-half the actual value, the producer receives one-quarter in cash, three quarters in a promissory note. If the estimated value is double the actual value, the producer receives all in cash, nothing in a promissory note; and so on.[1] In this variant, the plan involves not only compulsory borrowing and lending, but also compulsory participation in a lottery which determines how much the producer is compelled to lend. But aside from minor interest effects, the plan still has no effect on the producer's income from his crops.

The final, and least satisfactory, variant of the plan applies when it is not feasible for the administering authority to keep accounts with each individual producer separately. Bauer and Paish then recommend that the authority adjust the amount of

[1] Let P_t be the market price in year t; $\bar{P}_t$, the estimated market price; q_t, the output of the individual producer; $\bar{q}_t$, the estimated output of the individual producer. Then in the simple example used, of the total value of year t's crop, the producer receives $\frac{1}{2}\bar{P}_t\bar{q}_t$ in cash in year t; $P_tq_t - \frac{1}{2}\bar{P}_t\bar{q}_t$, in the form of a promissory note, or in cash the next year. The fraction received in cash in the current year is clearly $\frac{1}{2}\frac{\bar{P}_t\bar{q}_t}{P_tq_t}$.

cash paid to the producer per unit of output in each year so that each producer receives the specified fraction of the (estimated) value of his current output in cash and producers as a whole receive the total value of the promissory notes falling due in the year in question, where this total sum is computed as before. By this plan, each individual gets a fraction of this total sum equal to the fraction his output is of total output in the year when the notes fall due, rather than, as before, equal to the fraction his output was of total output in the year when the notes were issued. Put differently, how much he ultimately realises for his current crop depends not only on the size of that crop but also on what happens in the future to his share of total output. In the simple numerical example discussed above, the producer receives in the first instance half the estimated value of his current output in cash. The difference between the total value of his current output and this sum is the amount that would be due him next year if an individual account were kept—call this the "face value" of his (hypothetical) promissory note. If his share of total output is the same next year as this, he will receive the face value of his promissory note on account of this year's crop. If his share in total output is twice as large next year as this, he will receive twice the face value; if his share in total output is half as large next year as this, he will receive half the face value and so on.[1]

[1] In addition to the symbols of the preceding note, let Q_t be the total output of the area covered by the plan in year t, and $k_t = \frac{q_t}{Q_t}$, that is, the fraction of the total crop produced by the individual producer in question. Let us neglect deviations between actual and estimated output, *i.e.*, suppose output to be completely known before the amount to be paid in cash each year per unit of output is determined. Keeping to our simple example, the individual receives in cash $\frac{1}{2}\bar{P}_tq_t$ in year t on account of his crop in year t. In year $t+1$ he receives an additional amount determined partly by his crop in year $t+1$, partly by the difference between the total value of the crop for all producers in year t and the total amount paid in cash on account of that crop in year t. According to the formula suggested by Bauer and Paish, this additional sum would, in our simple example, be given by:

$$(1) \qquad \frac{P_tQ_t - \frac{1}{2}\bar{P}_tQ_t}{Q_{t+1}} \cdot q_{t+1} = k_{t+1} \cdot Q_t(P_t - \tfrac{1}{2}\bar{P}_t)$$

If the plan had been applied to each producer separately, the amount of the promissory note (the additional amount received in cash in year $t+1$ on account of year t's crop) would have been:

$$(2) \qquad P_tq_t - \tfrac{1}{2}\bar{P}_tq_t = q_t(P_t - \tfrac{1}{2}\bar{P}_t)$$

The ratio of (1) to (2) is:

$$\frac{k_{t+1}}{k_t}$$

Again, these formulæ can be readily generalised.

As is shown by this analysis, the statements in the text are strictly valid only if there is no difference between actual and estimated output. Any such differences add an additional element of chance.

In this variant, then, the plan does affect the producer's income: in addition to being compelled to lend part of the value of his crop he is compelled to gamble on whether his share of total output will go up or down; if it goes up, he wins an additional sum; if it goes down, he loses. As Bauer and Paish point out, this distribution of prizes seems rather perverse for a scheme intended to reduce fluctuations in income. More important, it clearly has undesirable effects on incentives to produce; these are made to depend not only on expected future prices, but also on past prices in a way that would itself be a source of increased fluctuations in income.[1]

The plan proposed by Bauer and Paish for compulsory lending and borrowing and compulsory participation in lotteries, even in its least satisfactory variant, may well be preferable to existing schemes for stabilising the incomes of primary producers. Their plan is arbitrary, introduces unnecessary uncertainty and has undesirable effects on incentives, but at least it is actuarially

[1] The plan introduces a "cobweb" effect based on rational pursuit of maximum returns rather than on a particular method of estimating future prices from past, as in the usual cobweb. Suppose, for example, that the demand for the crop is inelastic, so that a small crop yields a large return and conversely, that the simple plan used in the text for illustrative purposes is in effect, so that n equals 1 and one-half of the value of the current crop is received in cash, that prices and quantities estimated by the administering authority equal actual prices and quantities, and that, except for the initial year, producers estimate future prices and quantities perfectly and can produce precisely the amount they want to, so that in the absence of the plan equilibrium would be immediately attained the year after the initial year. Suppose output to be abnormally low in the initial year, *i.e.*, the demand price to be greater than the relevant long-run supply price. The effective demand price for any given output to the producer for the subsequent year is then equal to the sum of two components; half the ordinate of the demand curve plus half the ordinate of a rectangular hyperbola going through the point on the demand curve describing the first year's price and quantity. Since the demand curve is assumed to be inelastic the equilateral hyperbola will be flatter than the demand curve where they intersect, so the effective demand price is clearly above the actual price at which the output can be sold for outputs greater than the initial year's output. In consequence, given perfect foresight (but no collusion), the appropriate output for producers is larger than the equilibrium output without the plan. But the realised price is now less than the supply price for the corresponding output, so the next year, output will be curtailed. But by the same reasoning as above, the effective demand price for the subsequent year will be less than the actual price for outputs less than the second year's output, so next year's output will be lower than the equilibrium output without the plan, and hence next year's price above the equilibrium level and so on indefinitely. The price fluctuations may, of course, converge; the important point, however, is that the plan introduces a source of price and income fluctuations that would be absent without the plan.

If the demand for the crop is elastic, but all other assumptions of the preceding paragraph are retained, the realised price will not first fall too low, then rise too high and so on. But neither will it go directly to the equilibrium value. Instead, it will approach the equilibrium value from above, each year being closer to the equilibrium value. So, again, the plan introduces an additional source of year-to-year changes in income.

fair and cannot be used as an indirect means of taxing or subsidising producers (minor interest effects aside). But is it at all clear that their plan is better than straightforward reliance on a free market? Is it better than letting producers decide for themselves what investments they want to make and what lotteries they want to engage in?

Bauer and Paish attribute an impressive list of advantages to their plan. In part, these "advantages" consist simply of the absence of the disadvantages of existing stabilisation schemes. For the rest, they are all based on the implicit assumption that producers spend on current consumption their entire cash receipts; that is, that the propensity to consume out of cash receipts is unity and that consumption is unaffected by the ownership of assets or by the relation of cash receipts to current "income" in any more fundamental sense or to "usual" or "expected" cash receipts. Eliminate this assumption and the alleged advantages are eliminated as well. Perhaps the assumption is a correct factual description of behaviour in underdeveloped areas. Perhaps it is true that, as Bauer and Paish assert, "small producers are unlikely to have the self-restraint and foresight to set aside in good times sufficient reserves to cushion the effects of worse ones, or, even if they have, may be debarred from doing so by social customs and obligations."[1] If it is, the appropriate solution is surely to improve the capital market, to make available opportunities for voluntary lending and borrowing, and to persuade producers that there may be some merit in "taking thought for the future" and "saving for a rainy day." If the producer's foresight can be relied on in planning production in response to market conditions, as Bauer and Paish clearly suppose, why is it impossible to rely on his foresight in planning his consumption?

More important, suppose that despite the availability of a good capital market, we fail to persuade the producer to show more "self-restraint and foresight," that he knowingly insists on letting his consumption vary with his cash receipts in a manner that seems to us undesirable. Is it clear that there is any justification for state intervention to compel him to behave differently? Is not freedom a more attractive social philosophy than paternalism, even for underdeveloped areas?

MILTON FRIEDMAN

University of Chicago.

[1] Bauer and Paish, *op. cit.*, p. 766.

THE REDUCTION OF FLUCTUATIONS IN THE INCOMES OF PRIMARY PRODUCERS FURTHER CONSIDERED

In an article which appeared in the Economic Journal of December 1952 we proposed a new method for reducing fluctuations in incomes of primary producers, and reviewed at some length the operation of the West African marketing boards. This article has elicited three published comments in the Economic Journal, by Miss P. Hill, Miss P. Ady and Professor Milton Friedman respectively.[1] The principal purpose of this article is to reply to these contributions. In Section I we discuss Miss Hill's and Miss Ady's comments, which cover broadly similar ground and reflect a similar approach. Section II deals with Professor Friedman's note, while in Section III we examine certain wider issues of income and price stabilisation.

I

In spite of the sharpness of their tone, Miss Hill's and, to a smaller extent, Miss Ady's comments reveal a certain amount of common ground between us. Although Miss Hill starts off by attempting to excuse the prolonged retention from West African producers of a large part of the proceeds of their crops by urging that the boards' expectations of an early world slump were shared up to the Korean war by practically all economists [2] (these views were perhaps not quite so widely held as she seems to imply), she seems to end up by accepting our view that some at least of the boards have shown an undue reluctance to part with their funds, and that the local ordinances might well be amended to oblige them to do so over a period. Further, she would apparently support for this purpose the imposition of a formula, such as the one we proposed, and emphasises our contention that such a procedure would have the advantage of distinguishing payments to producers from the use of the funds for other purposes.[1]

Even Miss Ady, whose comments are in general more critical than those of Miss Hill, thinks that the boards would find useful the employment of moving average formulæ, though she thinks these should be regarded as no more than a guide and that their results might need modification "in relation to the general economic situation and the particular character of the crop." [2] The purpose of the second reservation is not quite clear, for the differences in nature between different crops could, as we suggested,[3] be provided for by attaching suitably different values to the constants in a basic formula. The first reservation, however, raises a question of general importance, the misunderstanding of which has imported much irrelevant heat into the discussion of the problem of reducing fluctuations in the incomes of primary producers. Miss Hill may be entertaining the same misunderstanding when she writes of the "anti-inflationary argument against raising producers' prices." [4]

This argument, as generally stated, is briefly that it is necessary to prevent exporters of products which have risen in price on world markets from reaping the full benefits of these higher prices because the consequent rise in their personal money incomes would cause internal inflation.

In certain conditions there may well be a case in the national interest for measures to prevent a rise in export prices and in earnings of foreign exchange from having its full immediate effect in raising the aggregate of personal money incomes. There are two fairly obvious instances of such conditions. The first is that of very low elasticity of the supply of imports, brought about, for instance, by war-time controls abroad or by a shortage of shipping. The second instance, mentioned by Mr. B. C. Swerling in a recent article in the Economic Journal [5] is that of a very large but temporary increase in foreign-exchange earnings, the subsequent decline of which may leave a country with a

[1] Polly Hill, "Fluctuations in Incomes of Primary Producers," Economic Journal, June 1953; P. Ady, "Fluctuations in Incomes of Primary Producers: a Comment," Economic Journal, September 1953; Milton Friedman, "The Fluctuations in Incomes of Primary Producers: a Critical Comment," Economic Journal, December 1954.

[2] In so far as this argument is relevant, it is much more a criticism of existing arrangements than of our proposals, since the difficulty or impossibility of forecasting trends strengthens the case for a scheme which is partly or wholly self-adjusting, with the result that normally there can be no prolonged loss of contact with the trend of prices. The more difficult it is to forecast crops or the trend of prices, the stronger is the case for a scheme under which an error in forecasting is compensated soon. This is one of several instances of Miss Hill's criticisms applying more to the operation of the boards than to our proposals.

[1] Economic Journal, June 1953, p. 468, paras. 1(*a*) and (*c*), and p. 470, para. (*f*).

[2] Economic Journal, September 1953, p. 607.

[3] Economic Journal, December 1952, p. 769.

[4] Economic Journal, June 1953, p. 469, para. (*d*).

[5] "Buffer Stocks and International Monetary Problems," Economic Journal, December 1953, p. 787.

structure of wage-rates, production costs and contractual payments appropriate to its temporarily higher real national income, but inappropriate to its subsequent lower level. There is, of course, no justification for the view that the reflection in personal money incomes of a *permanent* rise in the real national income is harmful, provided that imports can rise freely. The initial rise in the money incomes of producers for export, and the subsequent rise in other money incomes as the export producers spend part of their increased incomes on local goods and services, are merely the monetary counterpart of the rise in real income, and are in no way inflationary. The case for intervention on disinflationary grounds must therefore depend either on the inelasticity of supply of imports or on the purely temporary nature of the rise in the national real income.

But what matters here is that the whole question is essentially irrelevant to the problem of reducing fluctuations in producers' incomes. The prevention of inflation is a national problem to be dealt with by the Government as a political decision, and not by marketing boards representing, if anybody except themselves, only one section of the population. Further, the incomes of producers for export are not the only, or indeed often the most desirable, source of finance for the sterilisation of part of the foreign-exchange holdings of the country. There is perhaps something to be said for the view that a man sacrifices less by losing part of a recent gain in income than by losing part of what he has already become accustomed to enjoy. But to throw the whole of the burden of sterilising foreign balances on the shoulders of one particular section of the community, many members of which may be much poorer than some members of other sections, is obviously not the most equitable way of sharing it.

But in any case the degree to which, *in the interests of the community as a whole*, the foreign balances are sterilised, and the way in which the sterilisation is financed, whether out of taxation or out of loans raised from the public, are essentially political decisions, to be taken by Governments with full publicity and opportunities of discussion, and not by marketing boards sitting in private. The arguments of our critics imply that the burden of any necessary deflation should be borne by the producers of export crops, that is by one particular section of the community; and, further, that it should be administered by the marketing boards, that is by organisations established to promote the interests of their constituents by means of short-period price

stabilisation.[1] The whole question of the control of inflation is therefore irrelevant to that of the functions of marketing boards, or to any action reputedly taken in the interests of any one limited section of the population; and its introduction into the discussion throws into relief the advantage of a scheme, such as that proposed by us, which clearly and unambiguously distinguishes the smoothing of fluctuations from other aims of policy.

A point on which both Miss Ady and Miss Hill rather surprisingly disagree with us, and to which Miss Ady in particular devotes considerable space, is the effect of the restriction of prices paid to producers on the supply of primary products for export. Miss Ady is uncertain whether our statement that "government intervention tends to restrict output of primary products . . . in periods of high prices . . . as a result of keeping them (prices) down"[2] means "that output has been reduced or that it has not been as high as it would have been."[3] It is difficult (as everyone who has set examination papers knows to his cost) to be sure that phrases which seem plain enough to oneself will be equally plain to others, but we should have thought that the statement quoted could have borne only the second of Miss Ady's two meanings. We would, however, apologise to Miss Ady that any looseness of expression on our part should have caused her to waste her time in publishing two unnecessary pages of text as well as three wholly irrelevant tables.[4]

Her criticism of the second (and correct) meaning of our state-

[1] The same considerations apply to Miss Hill's suggestion (pp. 470–1) that the operations of the boards have made possible compulsory saving on a large scale, and have also rendered possible the imposition of heavy taxation (additional to the surpluses) on producers. Although this matter is, strictly speaking, irrelevant as an argument in support of the price policies of the marketing boards, it raises important practical issues which are considered in the note appended to this article.

[2] Economic Journal, December 1952, p. 751.

[3] Economic Journal, September 1953, p. 595.

[4] These tables show that in recent years exports of some of the major crops were about the same as in the mid-1930s. Actually this comparative stability of exports after some decades of rapid expansion could be taken to present statistical support for the view that the rate of growth of output has been adversely affected by the payment of low producer prices. But this type of simple statistical argument is useless in trying to establish a functional relationship. On the basis of Miss Ady's argument it would follow that rubber regulation, for instance, had not diminished the output of rubber, as in 1940 (under regulation) exports were much higher than at any time before the introduction of rubber regulation. Yet the effectiveness of restriction was clear from the high price of export rights and planting rights, and from the prompt response of exports to changes in exportable rates of release.

ment, on the other hand, is confined to a single short paragraph, in which she complains that we offer no evidence or argument in support of our statement, which she finds by no means self-evident.[1] Miss Hill makes a very similar comment.[2] That we produced no argument in support of our statement was because we thought that we could assume general agreement with the proposition that supply schedules normally have a positive price elasticity; and that there was no need to emphasise the distinction between a functional and a historical relationship.

It is, of course, possible to imagine examples of completely inelastic or even of backward-sloping supply curves. But these are among the *curiosa* of economics, which apply, if at all, only when producers have little or no opportunity to shift between activities and products.[3] Evidence of such abnormalities among West African export crops would be difficult to find. The draft report of the officially sponsored *Survey of the Economy of the Cocoa Producing Areas of Nigeria*, which we have had an opportunity to see, provides specific evidence that the planting of cocoa-trees is highly responsive to price, or, more precisely, to the relationship between prices of cocoa and those of imported merchandise. This is also the conclusion reached by Miss Ady herself in an earlier article,[4] where she states that "it appears that changes in the magnitude of cocoa exports from the Gold Coast in the period 1930–40 were to be explained by the effect upon planting nine years earlier of changes in cocoa prices. The positive slope of this long-run supply function is indicated in all the methods of formulation."

For the short-term supply of such a crop as cocoa, where many years must elapse between planting and first yields, the elasticity can hardly be very large. But Miss Ady's own testimony would seem to indicate that, even in the short-run, supply cannot be wholly unaffected by price, if, as she states, "In the cocoa boom

[1] ECONOMIC JOURNAL, September 1953, p. 597.

[2] ECONOMIC JOURNAL, June 1953, p. 470 (*g*).

[3] Since even if the supply curve of effort is backward rising, that of individual products is still likely to be forward rising where such shifts are possible.

[4] "Trends in Cocoa Production," *Bulletin of the Oxford Institute of Statistics*, December 1949, p. 396. The article also suggests (p. 392) that the decline in cocoa production in the Gold Coast since the mid-1930s may have been the result of the ageing of holdings as well as of swollen-shoot disease. The decline of yields with the age of holdings after about fifteen to twenty years from planting is also an important finding of the Nigerian Survey. The importance of new planting and re-planting, even for the maintenance of output, is a corollary of these findings, which accord with expectations. This has extremely important implications for price policy.

of 1948–49 everyone became a 'cocoa farmer,' combing the High Forest belt for cocoa stands, indeed for every cocoa tree." [1] The Nigerian Survey also found evidence that even the short-period supply is not completely inelastic, though the elasticity is necessarily very small.

For the other crops, the special conditions of West Africa, so far from providing an exception to the usual case of positive price-elasticity of supply, serve to reinforce the obvious general consideration. There is an extensive margin of production in most areas, and producers can shift readily between different crops and activities. The extension of capacity is necessarily to a large extent a function of price, since the establishment of new capacity and the production of export crops for the market are not profitable in outlying areas unless the price, after covering transport costs, still yields a return more attractive than could be secured from other activity. This elementary analysis is in a general way amply confirmed by historical evidence in West Africa, since if the output of export crops did not respond to prices it would be impossible to explain the rapid growth of these industries. But while the analysis is in general confirmed by the historical evidence, there are obvious reasons why the functional relationship cannot easily be shown by means of statistics. The effects of the functional relationship may be swamped by the operation of other influences, of which the results of general development are likely to be particularly important in emerging economies; and its operation may be obscured by time-lags, which are particularly important in agriculture.

There is, however, one argument of Miss Hill's, on which she lays considerable stress, which offers specific proof of the response of producers to price incentives. This is the response of growers to the differential prices offered by the boards for different grades of cocoa and palm-oil. It is, of course, unfortunate that, in this particular case, the price incentives offered are almost wholly unrelated to ultimate demand, and that the grade differentials find little or no reflection in world markets, so that the "improvement in quality" claimed by Miss Hill has little economic significance and represents a substantial misdirection of effort. Nevertheless, this instance shows that price incentives can bring a rapid re-direction of farmers' activities and, wisely used, could serve rapidly to adapt supply in the direction required by changes in world demand.

The other points of substance raised by Miss Ady and Miss

[1] ECONOMIC JOURNAL, September 1953, p. 606.

Hill are, first, the effects of inaccurate forecasts of output and price on the operation of our formula (Miss Ady); second, the relative merits of smoothing fluctuations in incomes or in prices (Miss Ady); and third, the effects of higher export prices on local prices of foodstuffs (Miss Hill). We shall deal with these in turn.

Miss Ady is quite right in pointing out that, with sufficiently inaccurate forecasts of prices and volumes of output, the use of our formula could conceivably cause greater fluctuations from one year to the next in prices paid to producers than occurred in actual market prices. This danger is inherent in any scheme which seeks to combine the fixing of producers' prices within each crop-year (a feature on which Miss Ady lays the greatest possible emphasis) with the approximate equation of producers' receipts and market proceeds over a period of years. If producers are to receive approximately the net proceeds of their crop over a period of years, it follows that any under- or over-payment in any one year must be adjusted by over- or under-payment in subsequent years. If the accidental under-payment occurs in a year when market prices happen to be unusually high, or the over-payment when they happen to be low, the only effect is that the degree of smoothing is greater than intended. But if the accidental under-payment occurs when market prices are low, or the over-payment when they are high, the degree of smoothing will be less than intended; and if the errors in forecasting are very large indeed, their effect may be more than to offset the element of smoothing and actually to increase the year-to-year fluctuations.

This difficulty does not arise where no effort is made to secure a long-run equation of producers' receipts with market proceeds. If prices can be fixed permanently high (as for instance in the United Kingdom or the United States), at the cost of an unpredictable but probably large subsidy from the taxpayer, or permanently low (as for instance in West Africa) at the cost of an unpredictable but probably large loss of income by the producer, there is no real problem in preventing year-to-year fluctuations in producers' prices. It was for this reason that we expressed surprise that the West African boards, having no real problem to solve, had nevertheless so conspicuously failed to solve it.

We believe that it is unlikely that errors in forecasting prices or output would in fact be so great as to offset the smoothing effect of our scheme and run the risk of intensifying year-to-year fluctuations in producer prices. If, however, it were found that forecasts were so unreliable that they had this effect, it would be for

those responsible for policy to decide whether the much-emphasised advantages of intra-seasonal price stability did or did not outweigh the consequent risk of increasing inter-seasonal price fluctuations. But it must be emphasised that, if reasonably accurate forecasts are impossible, the fixing of stable prices within each season must, under any system, run the risk either of increasing the magnitude of inter-seasonal price fluctuations or of opening up a permanent gap between the market proceeds of the crop and the amounts received by producers.

On the question of whether it is better to attempt to reduce fluctuations in producers' incomes or in producer prices, Miss Ady holds that "whereas stability of incomes may be the desideratum in foreign transactions, in the domestic economy the case for a stable *price* is far stronger." [1] Her reason for preferring to attempt to reduce inter-seasonal price rather than income fluctuations (stability of *intra-seasonal* prices is of course provided for in our proposals) seems to be based on a misunderstanding of our position. We have never suggested that incomes of producers should be maintained regardless of the amount of their output. In the form of our proposals suitable for West Africa and designed to operate on incomes only via prices, any farmer reducing his output would reduce his income for the current year proportionately and would therefore suffer no reduction in his incentive to produce. It is true that if a large number of farmers, by reducing their own outputs, were able to reduce total output perceptibly, the prices they would receive would rise even though world prices did not. But since no individual producer could affect the price by varying his own output, there would be no reason for any one of them to restrict production unless there were some arrangement between them for collective action.

While we are on the subject of stabilisation of prices and/or of incomes, it is worth noting that neither this distinction nor any of the conceptual problems of stabilisation seem to have received any attention either at the time of the establishment of the West African marketing boards, or in the course of their operations. The functions of the boards are stated in purely general terms as securing the most favourable arrangements for the marketing of the products. The ordinances establishing the Cocoa boards do not mention stabilisation at all among the functions of these organisations, while in the ordinances establishing the other boards it is mentioned only casually as one of the several objectives on

[1] ECONOMIC JOURNAL, September 1953, p. 603.

which the funds of the boards may be spent. Thus, not only is stabilisation not defined,[1] but it is not even clear whether it should be regarded as a major function of the boards. In these circumstances practically any policy can be justified or rationalised *ex post* on a number of possibly contradictory or inconsistent arguments. And for the same reason succinct discussion of the policies is rendered difficult because a number of different and often inconsistent arguments have to be examined, each implying quite different aims of policy.[2]

Our own preference for attempting to reduce fluctuations in incomes rather than merely in prices is that violent accidental fluctuations in output with prices constant may have economic and social effects as marked as, though less frequent than, violent fluctuations in prices with output constant. To hold prices stable while output fluctuates may therefore increase instability. As Mr. Kaldor has put it, " In the case of agricultural crops, where it is supply, rather than demand, which is unstable, such price stabilisation schemes must have a destabilising influence on activity." [3]

Miss Hill's objection to the payment of full market prices to producers of export crops is based, among other reasons, on the fear that to do so would give rise to " serious internal distortions " as the result of the rise in prices of locally grown foodstuffs. The causes to which she would attribute such a rise are not very clearly explained, but would seem to be : (*a*) the diversion to export of a larger proportion of crops, such as groundnuts, which are both exported and consumed locally; (*b*) the diversion of resources from growing food for local consumption to growing export crops

[1] Miss Ady (p. 603) disagrees with our definition of the aim of stabilisation as the smoothing of random fluctuations of incomes around the trend. But she does not attempt to provide an alternative aim, nor does she state in what sense, if any, the boards have stabilised prices or incomes.

[2] Thus it has been claimed in numerous official statements by the boards, as well as in ministerial statements in the House of Commons, that stabilisation (undefined) represented the major claim on the boards' reserves. But a recent (1953) official pamphlet by the Gold Coast Cocoa Marketing Board regards expenditure for development purposes a principal achievement of its operations. Combating of inflation; compulsory saving for development; the encouragement of local food production by depressing the price of export crops; the prevention of the emergence of a kulak class (*i.e.*, of a prosperous peasantry): these are a few of the arguments advanced in support of policies instituted supposedly to benefit producers by short-period price stabilisation. By legislation enacted in 1952 the Gold Coast Government has power to direct the Cocoa Marketing Board as regards the disposal of its funds, some of which have already been used for what are essentially general Government purposes.

[3] " Speculation and Economic Activity," *Review of Economic Studies*, October 1938, p. 24.

(this point would seem to be inconsistent with her doubts, expressed elsewhere, about the effects of price on the supply of export crops); and (*c*) the increased demand for local foodstuffs by export producers whose incomes have risen.[1]

Now it is probably true that, failing a large coincidental increase in the local output of foodstuffs, an increase in incomes will lead to an increase in imports, *inter alia*, of foodstuffs; and also that, to make these imports profitable, some rise in local food prices will probably occur. But to proceed from this to the conclusion that producers for export should therefore be prevented from receiving the full value of their product involves a serious *non sequitur*. Even if we were to concede Miss Hill's claim (which observed facts by no means confirm) that " the goods which the producers of export crops most require in larger quantities are cheap tropical foodstuffs of a kind which on the whole do not enter into world trade " [2] this would still not constitute any valid reason for under-paying them, especially as it would imply a condition of great poverty and under-nourishment.

Let us examine in more detail the probable consequences of a sharp rise in incomes of peasant producers of export crops in a country where the tastes of the inhabitants are such that they are reluctant to consume imported foodstuffs. We may divide the inhabitants of such a country into four classes : (1) those who produce export crops only; (2) those who either combine the production of export crops with the growing of local foodstuffs, or grow food-crops which can be either exported or consumed locally; (3) those who can grow only food for local consumption; and (4) those (mainly in the towns) who produce neither local foodstuffs nor export products. Now let us see the effects on these four groups of a substantial rise in prices paid for export products.

The first class will be immediately better off, for their purchasing power in terms both of imports and of local products has increased. The second class will also benefit, though less, since the rise will initially affect only part of their incomes; they may, however, increase their share of the benefit by diverting to export more of their crop or some of the resources hitherto used for producing locally-consumed foodstuffs. Demand for local foodstuffs will therefore rise, output fall and prices rise. This will in due course check the diversion to exports of output and resources. How far food prices will have to rise for this to happen will depend

[1] ECONOMIC JOURNAL, June 1953, pp. 469, para. (*d*), and 470, para. (*h*).

[2] ECONOMIC JOURNAL, June 1953, p. 470, para. (*h*).

on the relative elasticities, but even in the very unlikely case where prices of local foodstuffs had to rise as much as those of exports, the first two classes would remain better off in respect of that part of their incomes which was spent on imports. The third category, who produced only food for local consumption, could not in any case be worse off and, if they spent any part of their incomes on imports, would certainly be better off as the result of the rise in the price of their products. The only category who could possibly be worse off as the result of the rise in export prices is the fourth, those who, living mainly in the towns, produce neither food nor export crops. Here the result depends mainly on three factors—their ability to shift into either food-growing or production for export; their ability to shift their demand from locally-produced to imported goods (which is likely to be greater than that of the rest of the population); and the income elasticities of demand of the rest of the population for locally-produced goods and services other than foodstuffs. On the whole it seems likely that a large number even of urban incomes [1] will rise by as much or more than the cost of living. If this is so, it would seem that the only people really likely to suffer permanently from the rise in the standard of living of the rural population are those with fixed incomes who cannot shift, especially perhaps members of the non-indigenous population whose incomes are fixed from overseas.[2] It is perhaps this effect that Miss Hill has in mind when she refers to " serious internal distortions."

But once again if it is thought desirable to subsidise the consumption of particular groups, this is a general political issue which needs to be discussed as such rather than brought about indirectly under a system supposedly operating in the interests of the producers of export crops. Further, on grounds of equity it would presumably be preferable to finance such a subsidy from general funds rather than indirectly by reducing the proceeds accruing to particular classes of producer, especially since the payment of lower prices affects the entire saleable output of the producers, whether exported or sold locally.

[1] These incomes in West Africa (as in other under-developed countries) are generally appreciably higher than those of the bulk of the rural population, especially of those producing food crops. In West Africa, for instance, the groundnut producers are on the whole far poorer than the urban population. Cocoa producers are much better off, but no cocoa is produced for local sale.

[2] It is a frequent complaint of the European population in West Africa that an increase in the producer prices of export crops tends to raise the wages of domestic servants.

II

Our differences from Professor Friedman are those of premises and approach, chiefly about the functions of government in societies at different stages of development.

The proposals which were made in our article, and which are criticised in Professor Friedman's note, fall into two parts. First there are those for reducing fluctuations in the annual money receipts of primary producers in countries which are sufficiently advanced for records to be kept of the output and sales of individual producers. This form of our scheme, which was described in the article as much for expository reasons as in the hope that it might be adopted in such countries, has certain advantages over the alternative form, suitable for less advanced countries, which operates on prices. We would, however, agree that in advanced countries there is much to be said for leaving producers to make their own arrangements for carrying over part of the incomes earned in good years in order to minimise the fall in their standard of living in bad years. But there is also something to be said for the view that, especially in countries where the incomes of the producers concerned form a large proportion of the flow of money incomes of the community, a smoothing device such as that proposed by us (which both smooths fluctuations in incomes and renders the flow of aggregate income more predictable) may well have important advantages.[1]

The choice is really between two different views on the economic functions of the State. There is room for legitimate difference of opinion about how far a Government should take action which would bring direct material benefits to the present generation of citizens at the cost of reducing the incentives of the population to maintain and develop their powers of private foresight, initiative and self-reliance; or, alternatively, how far it should leave the population to suffer from the effects of their own inadequacies in the hope that, through suffering, they would learn to remedy them. It can, however, surely be common ground that the case for any given degree of paternalism is stronger the less developed and more ignorant the population, and that the fact that some populations could safely be left to learn entirely from their own mistakes would not prove that all could. Even, however, if it were agreed that, in a country where wealth and education are as widely distributed as, say, in the United States, the Government could best serve the long-run interests of its people by

[1] Cf. p. 720 below.

refusing to protect them against the consequences of their own lack of foresight, this would not finally conclude the argument; for it is quite clear that even (or perhaps especially) in such countries no Government has the slightest intention of leaving primary producers, and particularly farmers, to work out their own salvation. Since, therefore, it is quite certain that the Government will insist on intervening, it is surely not inconsistent with the principles even of those economists who think it should not intervene at all to suggest methods by which its intervention may do the maximum of good and the minimum of harm. Would Professor Friedman not agree that if, say, the United States Government's farm programme were along the lines suggested in our article, the result would be preferable, if not to their withdrawal from intervention altogether, at least to any other proposals that have been put forward?

When we come to his criticisms of that version of our proposals which is relevant to a less advanced economy, such as West Africa,[1] we cannot but feel that Professor Friedman shows a very marked lack of understanding of the conditions which exist in such countries. We shall consider only a few aspects of these economies relevant to Professor Friedman's criticisms; they are chiefly different but related facets of two phenomena: first, the comparatively recent emergence of a money economy; and, secondly, the importance of export proceeds as a component element in the flow of money incomes.

In many of the so-called under-developed countries development has been phenomenally rapid and uneven in the last few decades; in particular, there has been a rapid impact of a money economy on a population which has only recently emerged from the subsistence stage, while social institutions, customs and obligations characteristic of (and appropriate to) a subsistence economy still persist and influence economic life. Thus in West Africa even moderately prosperous Africans are frequently under a social obligation to extend liberal and indiscriminate hospitality to hosts of relatives, clansmen and co-villagers; and this is particularly evident when they enjoy a sudden increase in prosperity. This obligation is obviously a legacy of a subsistence economy in which surpluses could not be marketed regularly, and the obligation therefore emerged to distribute them to relatives (often to distant clansmen), guests, retainers and so forth. When anyone who is known to have accumulated a surplus or to be

[1] As in our previous article we take our examples from West Africa, but the argument applies to many other countries with a native peasantry.

enjoying even temporary prosperity is apt to become an involuntary host to a swarm of hungry relations, it is often difficult to set aside a reserve out of temporary prosperity against a future fall in incomes. This is not to say that individual Africans cannot or do not save even in spite of these difficulties. In times of prosperity there is now much African investment in house-building, and in the acquisition of transport and agricultural equipment. The very large cocoa area (over two million acres) is also evidence of the willingness and ability of the Africans to expend effort even if the return is long delayed. But gradual increases in incomes and a reduction in rapid and discontinuous fluctuations are likely to strengthen the sense of continuity, to lengthen the economic horizon of the producers and to promote the habit of saving.

It is developments of this kind, rather than the removal of imperfections in the capital market (as is suggested by Professor Friedman), which are likely to enable the Africans (or any other native peasantry) to build reserves against a rainy day. It is indeed hard to see in what manner the capital market in West Africa could easily be improved to serve this particular purpose. There is already a Post Office savings bank; and there are large solidly established banks with special savings departments.[1]

The population of the West African colonies has in many respects a very imperfect understanding of the operation of a money economy. In particular, it is apt to ascribe price fluctuations, whether of export crops or of imported merchandise, to the decisions and to the malice of the merchant firms, and as most of the larger firms are owned and administered by non-Africans, this often results in serious political tension. Moreover, plausibility is lent to these charges by the fact that there is in West Africa (as in many other under-developed countries) a comparatively high degree of concentration in external trade, with the result that the merchant firms cannot avoid exercising some influence on prices ("to make the market") both of export produce and of imported merchandise.[2] In these conditions frequent and sharp price fluctuations are particularly apt to have unsettling effects

[1] The Africans are, however, reluctant to entrust their savings to banks or other institutions because they fear disclosure of their accounts to their relatives. This serves to strengthen our argument.

[2] This consideration applies to the external trade of most tropical territories, which is mainly conducted by foreign merchants, and in which there is usually a high degree of concentration. The reasons for this are considered in some detail in an article "Concentration in Tropical Trade: Some Aspects and Results of Oligopoly," *Economica*, November 1953.

and to conduce to political tension. The tendency towards such fluctuations has become more marked in recent years, for in the very short period the supply of imports is less elastic than before the war, with the result that wide and unpredictable fluctuations in the flow of money incomes may bring about sharp short-period changes in the local prices of imported merchandise. Measures which would reduce the magnitude of fluctuations in the flow of incomes would therefore help to promote political and social stability and to smooth development in these countries.[1]

These favourable effects would be much reinforced by the greater predictability of incomes which would result from the operation of the proposed schemes; and this applies both to the individual producer and to the economy as a whole. It is, of course, true that the individual producer's share in the total may vary for reasons outside his control, but this is of small importance when compared with the greater predictability (far greater than ever before) of the future flow of incomes.[2] On this score there is a net reduction in uncertainty which would have repercussions throughout the economic life of the countries in which the scheme operated. In this respect there seems to be a clear advantage even as compared with a system in which the individual producers are both able and willing to build up reserves in times of prosperity.[3] We should thus be prepared to claim not merely that the scheme suggested by us would be preferable to the methods

[1] Our proposals relate to the smoothing of fluctuations in incomes of peasant producers only, since we feel that estate producers could be expected to undertake their own smoothing. But there may be circumstances when the application of our proposals to estate producers may also be advantageous. This may be so in circumstances in which the wages of estate workers are highly responsive to increases in the prices of export products, so that a sharp and discontinuous increase in these prices results in correspondingly sharp increases in wages, which it is often very difficult to reverse. Where the total supply of labour is inelastic, and where in times of prosperity smallholders tend to employ some hired labour, estate wages may often rise sharply following even a comparatively short-lived rise in prices.

[2] We recognise that the version of our proposals which operates through prices rather than incomes has the disadvantage that it does not help the producer who has a bad crop in a generally good year, while unduly benefiting the producer who has a good crop in a bad year. We think that this objection is far more than offset by advantages which are very real and important in the sort of economy to which this version of our scheme would be applied.

Quantitative considerations are clearly relevant in this connection. For most of the producers concerned fluctuations in incomes reflect chiefly fluctuations in prices rather than in output. It is exceptional for the output of individual producers to be affected by natural causes in a manner substantially different from that of the general body of producers in a particular territory.

[3] The very important practical advantages of this greater predictability of incomes are listed in our article, ECONOMIC JOURNAL, December 1952, p. 777.

being used at present by the West African marketing boards, but that it would be preferable to complete non-intervention.[1]

Professor Friedman would, we think, be prepared to agree that the functions of government include responsibility for the satisfactory working of the monetary mechanism. We regard our proposals as an extension of that function desirable in the circumstances of economies which in the aggregate include a large proportion of world population, economic activity and international trade.

III

Our foregoing rejoinders are not intended to imply that we think we have said the last word on the difficult and complex question of the smoothing of fluctuations in the incomes of primary producers. On the contrary, we think that there is much more to be said on the subject. But unfortunately much of the discussion, both in the pages of the ECONOMIC JOURNAL and even more elsewhere, seems to have been concerned not so much with the merits of the case under consideration as with its compatibility or incompatibility with particular political ideologies. Only too often the critics give the impression that, if our conclusions do not accord with preconceived ideas about the form of the economic or social system, they must attack them on every possible ground, relevant or irrelevant, often without specifying the aim of the policy desired, or even without making clear whether the remarks apply to the operations of the actual statutory export monopolies or to some hypothetical and undefined ideal. This makes difficult any serious discussion either of the actual operations of the marketing boards or of possible measures for achieving specified aims.

Readers will have noted that neither Miss Ady nor Miss Hill seem willing to state the aims and purposes which should guide the boards, or to define rules for their policies. They appear to be in favour of giving them complete control over the industries subject to them. Though they do not state this explicitly, they seem to envisage these organisations as instruments in these economies for a large measure of socialisation both of peasant production and of saving.

Professor Friedman, on the other hand, objects to some at least of the forms of interference with the free operation of market forces which we ourselves should consider on balance

[1] We have dealt here only with those advantages of the proposed scheme which are relevant to Professor Friedman's criticisms. A fuller list is given in our article, especially pp. 776–80.

desirable in the special conditions existing in certain under-developed countries. In particular, he objects to any compulsory smoothing of fluctuations in producers' incomes and holds that there is no case for compelling producers to smooth their incomes if they do not take steps to do so of their own free will.

Our own position differs both from that of Miss Ady and Miss Hill and from that of Professor Friedman. We should not like it to be thought, however, that we have simply split the difference between their views. Our conclusions have been reached as the result of fairly prolonged and intensive study of the economic, social and political conditions in several primary-producing areas. It is as the direct result of this study that we have become impressed by the benefits which could be derived from the reduction in political tension and from the widening and lengthening of the economic horizon which would result from a scheme which would moderate the sharp and discontinuous fluctuations in incomes and prices.

We do not wish to press this point too much. In particular, we do not want to suggest that, in the absence of such a scheme, primary producers would not save and/or would not increasingly acquire habits of thrift and investment. There is ample evidence to the contrary. But this does not by itself dispose of the case for a damping of the impact on these economies of rapid and discontinuous fluctuations. In our previous article we listed what seemed to us the advantages of our proposed method of smoothing, in comparison particularly with the methods actually in force, but also with complete non-intervention.

In Section II of the present article we have emphasised the advantages of greater predictability of the level of incomes. There would be a further advantage in a system of smoothing by a predictable method, such as that proposed by us, which may be appropriately mentioned in this section, which deals with wider aspects of stabilisation. Such a system of smoothing would reduce the market risks flowing from the dependence of an economy on one (or a few) export crops. The advantages of specialisation obtained by concentration on one or two export crops often lead to increased output and a higher standard of living. Such concentration is, however, often criticised as exposing the economy to considerable risks; and these risks, though frequently exaggerated, can also be real, both for the individual producers and for the economy as a whole. They can, however, be appreciably reduced by a system of smoothing. First, the transmission to producers of price changes in a damped form and the greater predictability of prices a year or two ahead would

facilitate gradual shifts from one crop to another or to other activity. (*It might* also incidentally serve to reduce demands for restriction schemes, or at least their plausibility, by reducing the impact on producers of a sudden fall in prices.) Secondly, it would make possible the accumulation of reserves of foreign exchange at a time of temporary high prices and their subsequent gradual liquidation as prices fell. By spreading risks over time, a system of smoothing would reduce the need for spreading them over a number of different products at the cost of foregoing the advantages of specialisation.

A stabilisation scheme becomes meaningless unless the aim and meaning of stabilisation are defined and kept distinct from such other and quite different aims as, for instance, the control of inflation or the finance of development. Unless these distinctions are observed, practically any policy can be justified in the name of one or other of these objectives. A precisely defined scheme is also necessary if the objective of greater predictability of prices is to be secured. Indeed, a discretionary scheme increases rather than reduces the uncertainty about the future. In addition to the uncertainty of weather, disease and other supply conditions, and of changes in demand, there is the added uncertainty of the reaction of the administrators, *i.e.*, the uncertainty introduced by the difficulty of assessing how changes are likely to be interpreted by those administering the scheme. And this particular uncertainty is enhanced when there is no clearly stated aim of policy.

Above all, unless the policy to be followed and the method of implementing it are precisely defined, the result of the introduction of a scheme is to hand the close control of the economy over to a handful of individuals with almost unlimited power over their charges, who are deprived of alternative channels for the marketing of cash crops.[1]

[1] It is often suggested that official or semi-official representatives can be expected to be guided purely by the interests of those over whom they have charge and that there is no need for any limitation on their discretion. This view is without foundation. It is well known that organisations and institutions tend to become ends in themselves and that deep-seated cleavages of interest develop between managers and administrators of such organisations and their unorganised charges, particularly when the former have statutory monopoly powers and the latter are not only unorganised but illiterate, ignorant and not vocal. But even in the absence of such a cleavage of interests there would be important advantages on at least two further grounds in minimising the discretionary powers of the administrators of the boards: First, there is the otherwise ever-present risk of a loss of contact with the trend arising from the inherent difficulty of distinguishing a fluctuation from a change in trend; and secondly, only a scheme minimising the discretionary powers of the administrators can secure the important advantages of greater predictability of the flow of incomes.

In the absence of a defined and specific mandate, the actual operations of the marketing boards have had the effect of largely socialising peasant production and saving in West Africa (and indeed throughout the whole of British Africa, since this system of marketing covers the principal peasant export crops also in British Central and East Africa, where its operation has been much the same as in West Africa). The operation of the boards has become an important instrument of compulsory saving, which has made almost impossible private saving and investment by important classes of producers, including expenditure on the maintenance and improvement of their holdings and equipment; this may indeed turn out to be the most important aspect or implication of this system of marketing. Again, by prescribing producer prices for the principal cash crops, the boards largely direct production and thus the activities of the peasant producers. They have extensive powers of licensing over intermediaries and processors (powers which are entirely unconnected with stabilisation), who can operate only on the sufferance of the boards. Further, the boards are empowered to, and do, prescribe price differentials divorced from market considerations, and they can ban the export of produce for which there is a market abroad. Such developments are always probable in the absence of a clear definition of objectives and of specified mandates; and this may perhaps explain the reluctance of some of our critics to accept a rigorous and clearly defined scheme.

We do not wish to prejudge the merits of such measures, especially of compulsory saving; but they obviously belong to a sphere of argument and discussion quite different from that of a mere appendage or accidental by-product of stabilisation. If such measures, and in particular the socialisation of saving and of peasant agriculture, are thought to be desirable, they should be introduced on their own merits and not through a back door in the guise of stabilisation. It is only in full and open discussion that an adequate examination of the merits and disadvantages of such far-reaching policies is possible, as well as the assessment of the state of opinion on these issues. Further, if it is ultimately decided to socialise agriculture or saving, measures designed expressly for the purpose are likely to be more effective than action emerging merely as a by-product of other policies.

It is desirable that any scheme for stabilisation or smoothing, in addition to being clearly defined, should attempt to smooth price and income fluctuations over only relatively short periods. It is true that under such a scheme as ours (as distinct from the

present regime of marketing boards) producers as a whole will enjoy approximately the same average incomes over a period of years, though with less violent fluctuations, as under a free-market system; but there is no guarantee (or indeed probability) that individual producers will get back in later years neither more nor less than they themselves gave up in earlier years. This lack of correspondence between personal gains and losses is inevitable in any scheme which reduces fluctuations in prices, and also applies to the reduction in price fluctuations brought about by well-directed private speculation. It may, however, be diminished if the period over which price fluctuations are smoothed is kept short, for the relative outputs of producers are less likely to show large changes in the short run than in the long; in particular, the *composition* of the body of producers is much less likely to change.

The desirability both of defining clearly the period of smoothing and of keeping it short is particularly evident when prices are tending to rise persistently. This is so partly for the obvious reason of the dangerous results of a loss of contact with the trend.[1] But it is reinforced by another consideration which issues from the ambiguities in the idea of stabilisation and the practical uselessness of undefined stabilisation as a guide to policy.

The higher are prices, the larger are the absolute amounts required to maintain them at a given level over a stated period, and therefore a given sum is more likely to appear insufficient as a stabilisation reserve. Surpluses accumulated over a number of years of relatively low prices, and representing large percentages of producer prices at the time of their accumulation, may be held to constitute an insufficient reserve at a subsequent date (by which

[1] Maintenance of contact with the trend of world market prices is particularly important in countries which are large exporters of primary products. Many of these are open systems *par excellence*, with the value of external trade representing a large proportion of the gross national product; and they depend heavily on external trade, both for the maintenance of current standards of living and for the promotion of economic growth. Moreover, the currencies of many of these countries are linked with sterling, or to other major currencies, and the exchange rate cannot be altered easily.

The fear by the participants in the market of the consequences of a loss of contact with the trend is a principal reason for the frequent and sharp short-period price fluctuations in commodity markets which are so often regarded as unnecessary and irrational. Traders are reluctant, or unable, to go against the prevailing sentiment (even if they doubt whether it is solidly based) and to back their own judgment if it differs from that of the market, since loss of contact with the trend might put them out of business. Under the usual stabilisation schemes the danger of such a loss of contact is still present, though it takes a different form.

time prices have risen greatly), even though the fear of a decline had been adduced as a reason for their accumulation. When prices are rising over a number of years it is therefore quite likely (in the absence of a clear definition of stabilisation, or of the period of accumulation) that the producers who received low prices in the early part of the period are called upon to surrender a proportionately large part of their incomes for the creation of reserves which may either be accumulated indefinitely, or used to subsidise much higher producer prices in face of a possible decline. This decline may represent a much smaller proportion of the higher prices than the proportion which the producers have to surrender at a time of much lower prices. And of course the beneficiaries of this process are a group of persons quite different from those who have had to make the sacrifice.[1]

It has been suggested that it is a disadvantage of a scheme such as ours that it proposed the prescription of producer prices on the basis of a moving average of proceeds (that is ultimately by reference to actual market prices) rather than leaving this to the discretion of the authorities; and it is argued that the exercise of human intelligence is likely to secure better results than a formula based on market forces. This type of choice often arises in economic policy. The desirable extent of discretion to be granted to those in charge depends on one's political beliefs; the particular task in hand; the qualifications and attitudes of those in charge; the political maturity of the society; the possible cleavage of interest between the administrators and their constituents; the political and economic power of the different interests (including the access to alternative occupations of those subordinated to the authorities); and so forth. But in the case here discussed our preference for a clearly defined formula does not rest only, or even mainly, on such considerations, important as they are. There are at least two other major considerations. First, only with such a formula is it possible to secure predictability of the flow of

[1] These considerations are not purely hypothetical. In discussion on the price policies of the marketing boards the frequent references to the insufficiency of the large reserves, even after years of accumulation, reflect in part a result of this particular ambiguity of the concept of stabilisation. The following quotation from the Annual Report of the Gold Coast Cocoa Marketing Board for 1950–51 illustrates the point: "Once again, in view of the increase in the world price of cocoa and the consequent increase in the price to the producer, the originally proposed amount for the stabilisation reserve [only part of the total reserves; there are various other reserves such as general reserve, general trading reserve, etc.] of £50 million is considered inadequate and the present aim is to build up the fund to £60 million." A few years earlier the Board has issued a press statement to the effect that it wished to establish a stabilisation reserve of £16 million.

incomes. Second, such a formula serves to define the object of stabilisation. Not only is it desirable to distinguish stabilisation from other objectives of policy (as already stated), but it is also necessary to decide what is meant by stabilisation since unless it is defined it is a purely general omnibus expression capable of several conflicting interpretations. A formula such as ours clearly defines it as a smoothing of random fluctuations around a trend.

It is sometimes argued that producers have no inherent right to the proceeds of their crops, and that accordingly there is no merit in a scheme designed to ensure that they do in fact receive them. The suggestion that producers have no right to receive the full market prices (especially if these are high) is an ethical postulate, which, if desired, can always be realised by means of taxation, including the imposition or raising of export duties, but which has nothing to do with stabilisation or smoothing. In this context an interesting contrast may be noted in the interpretation of the stabilisation of incomes of primary producers in advanced and under-developed countries. In the former stabilisation has come to be interpreted as ensuring that prices or incomes must not fall below a certain level; in the latter, that they should not rise above a certain level. In advanced countries it provides a floor; in under-developed countries a ceiling.[1]

Our previous article dealt primarily with local or national measures of stabilising prices and incomes, and it therefore envisaged discrepancies between local prices and world prices. Such measures will affect world market prices if they cover a significant proportion of world exports and if the elasticity of supply for export of these commodities is appreciable. They would tend to retard the increase in world supplies at a period of rising prices, and to slow down their reduction in times of falling prices.[2]

[1] The practical result of this interpretation of stabilisation in under-developed countries is reflected in the new structure of cocoa export duties announced in the Gold Coast in August 1954 when this article was in the press. This restricts the amount which the Cocoa Board can retain to £180 a ton f.o.b., equal to about one-third of the ruling market price. Any excess over this figure is taken in export duties. The measure is retrospective to April 1954. The new duty restricts the price which the Board can pay to producers to the 1953–54 level of 72s. a load, equal to £134 a ton, which is again about one-third of the commercial value. It was announced that in the Government's view this is the maximum price which producers should receive. This measure is akin to an excess receipts tax at a rate of 100% and limits the proceeds of a large proportion of producers to about £50 a year or less; see also the note at the end of this article.

[2] It is possible that any tendency to retard the increase of supplies would be offset wholly or partly by the encouragement to production resulting from the greater predictability in incomes and from the reduction in the risks of specialisation; but in any case this would not apply to the maintenance of supplies at a time of falling prices.

If the elasticity of supply for export were high [1] and the elasticity of demand low, the effect of the widespread introduction of such schemes might be to increase the instability of world prices, especially at a time to falling prices.[2] The same considerations apply *a fortiori* to the operations of the marketing boards, which also divorce local from world prices, at any rate when world prices are high, and do so for much longer periods and to a much greater extent than is envisaged under our scheme.

These considerations are relevant to the choice of particular values in the formula for particular crops. If a large part of the total world exports is covered by the scheme, it may be desirable to reduce the smoothing element of our formula (*i.e.*, to increase the first term of our formula relatively to the second), and also possibly to reduce the number of years over which surpluses and deficits are to balance. In these conditions the stabilising or smoothing effect of the scheme is reduced, but so is the likelihood of a loss of contact with market prices over a number of years, or of de-stabilisation of world market prices by the operation of national schemes covering a large part of exportable supplies.

As has already been emphasised, different values in the formula may be suitable for different types of crop, depending on such factors as producers' readiness to respond to changes in market prices, the period of gestation, the danger of a country's competitive position as a result of loss of contact with the trend in prices and a number of other factors. In a country which has several major export crops the adoption of different values for the formula and/or the absence of any scheme for one or two commodities may be useful to enable rough comparisons to be made between the effects of different measures of policy.[1]

[1] It might, of course, be argued that where the elasticity of supply (especially of short-period supply) is high, stabilisation measures are unnecessary, since ready response of supply to changes in price suggests that the adjustment to changed market conditions is not likely to inflict a great strain on producers. But it still may have violent effects on the level of other local incomes even if it does not inflict hardship on the producers. Also, if the producers whose elasticity of supply is high represent a small part of total supply reaching the world market, prices may still fluctuate widely, and this may bring about changes in capacity not called for by long-period considerations. Of course, in practice stabilisation schemes are likely to be introduced whether or not they are strictly speaking necessary or desirable.

[2] In the particular case of West Africa these considerations are comparatively unimportant. The short-period elasticity of supply of oil-palm produce, groundnuts and cotton seems to be high, but of these commodities West African supplies are a small proportion of total supplies (including supplies of closely related commodities). The short-term elasticity of supply of cocoa (of which West African supplies are about one-half of total world exports) is low. The long-period elasticity of supply is likely to be substantial, but the rate of new planting is unlikely to be much affected by smoothing over a few years, especially when it is known that reserves would be distributed if prices fell

It has been suggested that our scheme would not be administratively feasible. This, of course, is a familiar argument of those who do not like a particular measure but find it difficult to advance logical grounds against it. Our scheme could be operated perfectly by the present marketing boards, whose operations would then differ from the present system only in that their seasonally fixed prices would be determined by reference to the formula instead of at their own discretion.[2] So far from being administratively impossible, such a method of price-fixing would eliminate possible conflicts of interest between the boards and their constituents, and might serve to avoid political complications, while making it clear that in fixing prices the boards were neither subjected to pressure by the British Government, nor influenced by the desire to strengthen their own position or that of any local political party.

In conclusion we should like to clear up one source of apparent misunderstanding about our scheme. It is not, and by its nature cannot be, intended to perform any of the functions of insurance. Insurance is a method of pooling contributions among the members of a group to indemnify any member of the group who incurs loss through some accident outside his own control. The risks of price fluctuations are not insurable in the accepted sense of the term because they do not fulfil the recognised conditions necessary before actuarial probabilities can be established: the risks cannot be clearly defined, and there are not present a large number of separate events which are independent of one another. Insurance depends essentially on the fact that only one or a few members of the group are likely to suffer accident at any one time. If all members were likely to suffer together, there would be no possibility of the losses of the unlucky being made good out of the contributions of the more fortunate. Our scheme is designed to deal with the exactly opposite contingency; that is to say, with losses which are common to all members of the group. These

[1] In Nigeria, for instance, marketing boards control five major export crops, several of which are produced under closely similar conditions in the same general area (palm oil and palm kernels in the south, cotton and groundnuts in the north), and comparisons between the operations of different formulæ or between commodities subject to schemes and those without would yield instructive results.

[2] In our previous article we suggested that the same result could be achieved by operating a system of export taxes and subsidies without statutory monopoly. This would certainly be administratively much more difficult, and in spite of certain attractions might not prove feasible. But none of these difficulties would apply to the method indicated in the text.

cannot be pooled among the members of the group, for all suffer them at the same time. All that can be done is to spread them over time, so that contributions set aside in good times help to mitigate the losses of the same group when bad times come. So far from it being designed to deal with the losses of particular individuals, not shared by all, our scheme works better the more identical are the experiences of all the members of the group. There is, of course, nothing in our scheme which prevents it being supplemented by a scheme to protect individuals from the results of exceptional misfortune, always provided that the risks are separate from those of other members of the scheme, that they are not subject to the control of the insured and that the necessary data exist for the estimation of their amount and probability. But such a scheme would have to be kept entirely separate from the one we propose, since it is designed to fulfil an entirely different purpose and is subject to entirely different conditions.

NOTE

The topics reviewed in Section I covered the major issues raised by Miss Hill and Miss Ady. A few remarks on some minor points raised by our critics may be in order.

The use of the marketing boards, that is of organs established to promote the interests of producers by price stabilisation, as instruments of compulsory saving has important practical disadvantages chiefly by concentrating the burden on their own constituents. The burden is borne by producers not only through the accumulation of surpluses by the boards, but also through greatly increased export duties; the authorities have been encouraged to raise the rates of these duties because this could be done merely by diminishing the surpluses of the boards without affecting the prices received by producers. The rates of these duties are not only much higher than they were before the boards were introduced, but they are also far higher than they are on the few non-mineral exports not controlled by the boards such as rubber, hides and skins, and timber. On these the export duty is generally around 10% of f.o.b. values which is what they had been on the controlled commodities before the introduction of statutory marketing. At current prices (July 1954) the cocoa export duty in Nigeria is about 45% of the f.o.b. value, and represents about 140% of the price paid to producers, while the export duty on rubber produced in the same area of Southern Nigeria is 7½% of the f.o.b. value, which is almost exactly the rate which applied to cocoa before the introduction of statutory marketing. In the Gold Coast the cocoa export duty is at present over 40% of the f.o.b. value, representing over 150% of the price paid to producers. These figures are of the export duty only, excluding the surplus. These burdens are levied on producers with very modest incomes; the Nigerian survey mentioned earlier found that in 1951–52 one-half of the cocoa farmers surveyed sold 7 cwt. of cocoa or less, and their gross proceeds over the season were not more than £50 or £60 at a time when the producer prices were the highest on record and about 25% higher than the producer prices in the Gold Coast in 1953–54. The producers of other crops have far lower cash incomes still. By contrast the urban population is taxed extremely lightly. In the Gold Coast a salary earner (single man) with an income of £1,000 pays about £15 a year in income tax, *i.e.*, 1½%. The exemption limit is around £250. The disproportionate burden on the producers of export crops is also clear from the following

information. In 1953 gross government capital formation in the Gold Coast was £16 million. In 1952–53 the Cocoa Board's surplus and the cocoa export duty together exceeded £20 million, and in 1953–54 they will almost certainly exceed £50 million.

The concentration of the burden on these producers is one result of introducing compulsory saving as a by-product of stabilisation, and thus not integrating it with the tax structure. Quite apart from considerations of equity, this retards economic growth and the spread of the money economy. It is a risk of compulsory saving that while it increases the proportion of saving out of a given income it might retard the growth of income in various ways, especially by discouraging the extension of agricultural production for the market on the extensive margin of cultivation. This is particularly likely to happen in West African conditions and under the arrangements in force there. A failure to distinguish this aim of policy from stabilisation also obscures the process of compulsory saving, which is not brought home even to the educated members of the community, a disadvantage in these countries where a spread of understanding of these issues is to be desired. Thus it is a matter of substance and not purely a formal consideration that compulsory saving should be effected through the budget and not through the marketing boards.

Miss Ady is not correct in saying (pp. 605–6) that we had in mind a rise in internal retail prices when we said that the terms of trade of producers had been depressed by the operations of the marketing boards. What we had in mind, and stated explicitly, was that producers have had to buy imported merchandise at open-market prices while they had to sell their products at prices far below commercial values. This adverse effect on the terms of trade of producers was an important incidental result of the accumulation of surpluses, and does not require any esoteric explanation. Some details of terms of trade of producers compared with 1935–37 will be found in a paper in the *Journal of the Royal Statistical Society*, 1954, Part I.

Miss Ady argues (p. 603) that the frequent weekly or even daily fluctuations in prices before the war were a principal cause of peasant indebtedness, and apparently a principal factor enabling middlemen to exploit the peasants. It is not clear how this is relevant to the accumulation of large surpluses year by year amounting to tens of millions of pounds. Moreover, as entry into small-scale produce buying is remarkably easy, and there was intense competition among these intermediaries before the war, it is not clear how the intermediaries could have secured excessive margins at the expense of producers. This is not to say that the elimination of day-to-day fluctuations has not had real advantages; but it can neither be adduced in support of the accumulation of surpluses, nor is it relevant to Miss Ady's criticism of our paper.

Miss Ady suggests (p. 589) that the unfavourable selling results of the marketing boards other than the Cocoa Boards were the results of unsuccessful forward contracts entered into before the Korean boom. The most unfavourable results relate chiefly to the operations of the West African Produce Control Board, which secured much lower prices from the Ministry of Food than was paid by that organisation to other bulk suppliers of the same, or closely related, products, selling on otherwise similar terms of delivery. Information on this subject is presented in the article in the *Journal of the Royal Statistical Society*.

P. T. BAUER

Gonville and Caius College, Cambridge.

F. W. PAISH

London School of Economics and Political Science.

FLUCTUATIONS IN INCOMES OF PRIMARY PRODUCERS: FURTHER COMMENT

Two articles on this subject [1] in earlier issues may have suffered to some extent from the drawback of having had to use in their arguments overall quantities. Some of the problems dealt with could be made clearer by a more detailed break-down of the statistics used. Though the first article made reference to certain other crops, both articles used Gold Coast cocoa as the main example. I shall restrict myself to the latter.

Cocoa Farmers and their Income

The Gold Coast census of 1948 found some 150,000 males engaged in cocoa growing, or 11·5% of the estimated total employable males. The census commissioner estimated, on the basis of related samples, that some 64,000 females would also be so employed. The addition of 1,367 males employed in cocoa marketing gave a total of under 220,000 people directly connected with the cocoa "industry." Approached from a different angle, some 180,000 persons described themselves as "owners, part-owners, or tenants" of cocoa farms, the census commissioner estimating (possibly as a remainder term) that there were in addition some 35,000–40,000 employees. There were thus in 1948 some 220,000 persons of both sexes connected with the cocoa industry, compared to a Gold Coast total for both sexes of some 2,300,000 "aged 16 or over."

When the fact is kept in mind that, out of a total estimated national income in 1951 of some £150 million,[2] over £50 million was attributable to cocoa, and that many cocoa farmers have also other sources of revenue, such as food farming or forestry, the cocoa farmers *as a group* could be fairly described, from the point of view of income, as the "upper tenth" of the Gold Coast population. Their description as "small peasant farmers" thus tends to give a wrong impression of their position in the Gold Coast economy as well as in the Gold Coast's social structure:

[1] "The Reduction of Fluctuations in the Incomes of Primary Producers," P. T. Bauer and F. W. Paish, Economic Journal, December 1952.

"Fluctuations in Incomes of Primary Producers: A Comment," P. Ady, Economic Journal, September 1953.

[2] Cf. "Report on Financial and Physical Problems of Development in the Gold Coast," D. Seers and C. R. Ross (July 1952), p. 4: Estimated national income £152 million, value of cocoa crop £56 million.

they should not be compared with people in the same income groups in the United Kingdom, but with the rest of the population of the Gold Coast. The cocoa farmers themselves, though naturally very keen on getting a higher share of the cocoa money than that left to them by taxation and by the price-fixing arrangements of the Cocoa Marketing Board, are the first to admit that even so they are much better off than any of the other major occupational groups in the Gold Coast. They are also fully aware of the fact—and so is everybody else in this country—that their high present-day income is, on the whole, not due to greater initiative, or to harder work than the rest of the population, but is mainly the result of a combination of greatly increased world demand,[1] and of favourable climatic and soil factors for which they cannot claim much credit, except of having ancestors who settled in the right regions. As a matter of "*justice*" between groups, they are therefore, on the whole, ready to accept the idea of a redistribution of some of their group's "monopolistic" [2] earnings among the other nine-tenths of the population.

Such a redistribution, in a closed economy, could well be left to the normal forces of competition. In an economy like that of the Gold Coast, in which the cocoa farmers have on the whole little economic intercourse with the rest of the population, selling their product abroad and getting most of their purchases (including even meat on the hoof) also from abroad, the economic fortunes of the cocoa growers leave the rest of the population relatively undisturbed—except, in a negative fashion, when the cocoa farmers come in as direct competitors for scarce imported products. (Though some cocoa farmers may have been turning away from food production during the last few years, buying their food in the market, there still seem to be comparatively few local products purchased by the cocoa-farming community as a whole.) A higher income for cocoa growers will thus certainly not tend to be automatically redistributed among the rest of the population (at least not in the short run). If, therefore, some redistribution is considered to be fair, it is also obvious that it could be under-

[1] Prices per load of 60 lb. (weighted yearly averages) paid to producers from 1926/27 to 1953/54 have been: 27/2, 27/6, 20/4, 18/2; 10/6, 10/3, 9/11, 7/6, 8/7, 9/8, 20/6, 7/6, 7/10, 8/4; 7/–, 7/10, 6/11, 7/3, 11/9, 14/6, 27/6, 40/–, 65/–, 45/–; 70/–, 80/–, 70/–, 72/–. For *1952/53 the* weighted yearly average price was actually slightly lower than 70/–, 72/– having been paid for first-grade mid-crop cocoa and 68/- for second grade. The difference is in practice insignificant.

The world market price over the last ten years has, of course, been even higher, sometimes averaging double the price paid to producers.

[2] "Monopolistic" in so far as they are in possession, as a "group" (but see below), of fixed resources of soil and climate.

taken only through a conscious intervention by some agency generally agreed upon. Such an agency could in practice only be a Government agency, whether direct, such as through the Government budget (via taxation and budgetary expenditure) or indirect, as (possibly) via a Government-managed Cocoa Marketing Board.

There did not seem to be any objection to the idea of some redistribution of cocoa money in either of the two articles under discussion, but the first article took strong objection to the actual proportion withheld from the farmers, which it considered much too high, while the second seemed ready to defend the past, at least as far as the Cocoa Marketing Board funds were concerned, on the basis that they were not taxation, but could and would be used for the benefit of the farmers themselves. A more detailed analysis of the figures might make the problem in both cases a little clearer. The first article seemed to be making three points in favour of its thesis that too much money had been taken from the farmers: (*a*) that it was unjust; (*b*) that the high rate of taxation must obviously and necessarily lead to a restriction of output; and (*c*) that the farmers could have put the funds to much better use themselves than could be done by the Government acting on behalf of the whole community.

The first argument, which held that the small peasant farmers are being subjected, through various devices, to "rates of taxation" which apply only to people in the super-tax group in the United Kingdom is quite correct as far as it goes, but from the data given above it can be seen that the cocoa farmers, *as a group*, and within the framework of Gold Coast conditions, *are* the equivalent of the super-tax group in the United Kingdom. They could even be said (if additional "insults" were needed) to be in the rent-earning land-owning class, whose large incomes as compared to the rest of the population are mainly due to the play of inheritance. (This does not hold throughout, as there has been a fair amount of movement of people towards potential cocoa-producing regions.) On the whole, therefore, if high rates of taxations are acceptable in a community, taxation of the cocoa-farming group at super-tax rates is no more to be condemned than that of the high-income groups in the United Kingdom.[1]

[1] There is one type of argument against such a group approach which I consider valid: the fact that the cocoa farmers' group is not a homogeneous entity, but made up of units whose individual incomes are probably highly varied and variable. I shall be discussing this point at greater length later on. May I simply mention here that, if the "group" idea is accepted (as seems to have been done in both previous articles), the arguments in favour of treating the cocoa farmers' group as being in the "sur-tax" range could be said to be actually stronger than I have chosen to make them in the text. The wage-earning labour on the cocoa farms, normally immigrant labour, as well as a good proportion of the so-called tenants, who often are simply disguised immigrant labour, are certainly not earning at the same rate as the cocoa farmers. Companies purchasing cocoa in the bush estimate the total number of actual farmers at not more than 60,000–80,000, though I have found it difficult to check on such estimates. This would give an average yearly gross income "before tax" of some £700–£800 per farmer, which, taking the Seers–Ross estimate of national income in 1951 as valid, is more than fifteen times the average cash income per head for the rest of the adult population.

As far as the second argument, that of output-restriction, is concerned, the evidence in existence certainly does not seem to endorse it. Below (Tables I and II) are detailed, as well as percentage, data concerning output of cocoa by regions from 1939/40 to 1952/53. As can be seen, there has been a very rapid increase in cocoa output in the "new" regions of Ashanti and Trans-Volta. As it takes a cocoa tree five to seven years before

TABLE I

Cocoa Production, Gold Coast, by Regions (in Tons)

Crop Year.	Ash.	W.P.	C.P.	E.P.	T.V.	Total.
1939/40	73,780	10,396	34,843	105,548	17,216	241,743
1940/41	82,290	8,332	28,906	100,757	16,706	236,991
1941/42	89,572	9,079	32,509	101,608	17,952	250,720
1942/43	72,029	7,222	24,124	87,202	16,772	207,349
1943/44	78,155	5,482	23,758	73,867	14,813	196,075
1944/45	91,324	8,164	33,594	76,998	18,649	228,729
1945/46	94,854	9,562	25,481	64,782	14,616	209,393
1946/47	79,606	9,956	34,195	52,158	16,201	192,116
1947/48	105,935	11,243	24,890	45,531	19,960	207,559
1948/49	125,866	15,162	44,093	66,793	26,458	278,372
1949/50	116,016	14,044	39,107	54,435	24,229	247,831
1950/51	122,667	16,613	42,161	56,147	24,635	262,223
1951/52	97,669	11,773	30,068	47,585	23,568	210,663
1952/53	118,297	12,391	38,138	50,247	27,909	246,982

Note 1: Crop year runs from October 1 to September 30.
Note 2: Ash = Ashanti. W.P. = Western Province. C.P. = Central Province. E.P. = Eastern Province. T.V. = Trans-Volta.
Note 3: All cocoa production figures have been compiled from Cocoa Marketing Board returns.

it starts bearing and two to four more years to yield a full crop, it can be easily seen that this increase in the new regions is the result of plantings at a time when cocoa payments to farmers were some eight to ten times lower than to-day. If the total for the country has remained more or less stationary, it has been due entirely to the wholesale ravages of swollen shoot, which has very badly affected the richest and, in the past, the most productive region of all, that of the Eastern Province, and has at the same

time nullified some of the expansion in the other regions, especially in the Central Province.

An additional, but less direct, refutation of the second argument could also be provided by the fact that, for the cocoa-growing group as a whole, the actual average yearly cash income

TABLE II

Regional Cocoa Production, Gold Coast, as Percentage of Total Production

	Ash.	W.P.	C.P.	E.P.	T.V.	Total.
1939/40	30	4	15	44	7	100
1940/41	35	4	12	42	7	100
1941/42	36	4	13	41	7	100
1942/43	35	4	12	42	8	100
1943/44	40	3	12	39	8	100
1944/45	40	4	15	34	8	100
1945/46	45	5	12	31	7	100
1946/47	41	5	18	27	8	100
1947/48	51	5	12	22	10	100
1948/49	45	5	16	24	10	100
1949/50	47	6	16	22	10	100
1950/51	47	6	16	22	9	100
1951/52	46	6	14	23	11	100
1952/53	48	5	15	20	11	100

Note.—Percentages having been rounded off to the nearest unit, the total does not always add up to 100.

(after taxation and Cocoa Marketing Board retentions) has been in the region of some £150 per active adult participant, whereas for the rest of the farming community (taking the Seers–Ross estimates as a guide) it could not have been more than about £30–40. Cocoa growers would thus hardly leave their present work for other types of farming—and in practice they never do. Nor would wage-earning be much more attractive to them, as wages normally range between 4*s.* 6*d.* for unskilled to 9*s.* for skilled workers per day, giving yearly earnings, for full-time employment, of between £80 and £160; some of this must be used for payment for lodgings, which farmers do not have to incur, and for much of the food normally grown by every farmer for himself. The fact that, in addition, the farmer enjoys very long periods of leisure, whereas a wage-earner will have to work steadily throughout the year to ensure such earnings, makes the change even less attractive. In actual fact it is well known, though no accurate statistics actually exist, that almost all paid labour, including even that working on cocoa farms, comes from outside the cocoa-growing area, to a large extent from the Northern Territories or

from French West Africa.[1] There is no doubt that to-day, in the Gold Coast, the equivalent of the rich uncle from America is the uncle who owns a cocoa farm.

The third argument, put forward in the first article and challenged in the second, that the cocoa farmers are the best judges of the use of the cocoa money, is a much more complex one. Not only does it raise questions of interpersonal comparisons of utility (cocoa farmers *v.* the rest of the population), of the best relationship between immediate and postponed consumption (cocoa farmers have so far used the money for consumption goods, the Government uses much of it for public investments), of the whole concept of the welfare state in the context of an under-developed community (how much education, public health services, etc., should be provided by the state), but it also leads to problems of a more definitely political character, as it raises (as shown below) the question of the most appropriate social-economic structure of a politically organised society. There is not even a commonly agreed basis yet in economic thinking for the discussion of such problems. If I shall pick out some relevant facts or express certain opinions in connection with them, it will only be in an attempt to put such facts a little more into what I feel might be a better perspective.

To discuss the most appropriate way of allocating the increased current cocoa income it is useful to have a look at what has been happening in the immediate past. The large increase in the personal incomes of the Gold Coast population since the war has been almost entirely used *so far* (except for institutional spending) on consumption expenditure. The imports of Food, Drink and Tobacco have thus increased from £1·9 million in 1946 to £13·6 million in 1952, with Food and Drink increasing nearly ten times. Imported cloths (grey, white, printed, dyed and coloured cottons, and artificial silks) have jumped from £3·1 million in 1946 to £11·7 million in 1952. On the other hand, most of the increase in the import of building materials and of industrial equipment (cement, *e.g.*, going up from £0·4 million to £1·8 million) seems to have been due to increased activities by the Government or by the large, almost all foreign-owned, firms. There is thus a *prima facie* corroboration of the argument put forward, or accepted, in

[1] South-bound persons using the Volta ferries between April 1, 1952 and March 31, 1953, totalled 391,609, of which 156,939 are stated to have come from French Territories. It is generally accepted that the majority of such crossings are by seasonal migrant labourers, and that, in addition, many may be crossing by canoe.

both previous articles, that no saving, in the sense of investment-saving, can be expected from the farmers, even though their income is greatly increased. The first article concluded that it would all the same be better if farmers were allowed to *consume* their own product, the second that the money should be used for *investment* on their behalf.

This reluctance to rely on farmers to provide the investment funds and promote the actual investment necessary for the development of the country to a different level of activity from the present, rudimentary agricultural, one, is very strong and, as shown above, actual facts and statistics seem to back it. But something can be said against this view. From extensive travelling and discussions in many parts of the country, there is no doubt in my mind that the population is taking a rapidly increasing interest in the possibilities of investment in productive equipment. Small power mills are already covering the country from end to end, so much so that some concern is already being expressed at the loss of nutritional value of the grain thus treated. Lorries, the yearly import of which has grown from 492, worth £0·2 million in 1946, to 2,987, worth £2·2 million in 1952,[1] are largely owned by African owner-drivers, with a marked tendency towards the building up of small fleets by the more efficient among them. Timber-sawing equipment, though sometimes not very efficiently ordered or utilised, is all the same being increasingly used by African entrepreneurs. And during the last year or two there has been a rapidly increasing tendency towards the building of new " modern " houses throughout the whole of the richer farming regions. It is difficult not to feel that this attitude will have a snowballing effect. Even though increased money for cocoa farmers has, in the past, meant larger imports of consumption goods and comparatively little increase in investment, this need not hold good for the future.

The argument can be even further strengthened. So far I have discussed the cocoa farmers' group as if it were a homogeneous entity, with an " average " income holding good throughout the group. In fact, whatever evidence there is seems to indicate that there is already some accumulation of capital in the hands of a rising farming " middle class," with incomes comparable in some cases to those of nineteenth-century English merchants. Thus our problem could be said to shift from an

[1] The total for French West Africa for 1952 was 3,816 lorries. French West Africa has a population four times, and an area twenty times, that of the Gold Coast.

economic one towards one of political doctrine: ought the Gold Coast to tend towards an egalitarian society where the Government (or foreign firms) will be the only owners of capital sufficient for large-scale development in the industrial or trading field, or should it move towards a society with a strong bourgeois element, with all the drawbacks such an element might present, but also with all its qualities of vigour and initiative? The present Government, and many of the intellectuals in the country, nurtured on theoretical socialism, have definitely inclined towards the first solution—at least in theory. In practice, the first solution requires the existence of a numerous, well-trained, staff on which the Government can put the burden of a Government-directed economic development. Such staff could to-day only be found abroad, and would be extremely expensive if at all available. The reports from the various Ministries are already extremely gloomy, even concerning the maintenance of a minimum nucleus which would allow them to continue the most essential of to-day's services. The establishment of a " Gold Coast " Civil Service, separated from the rest of the colonial Civil Service, has led to a rapid diminution of applications from abroad for new appointments, and it will take many years before the training schemes now being developed within the country itself could provide even a dribble of local technical staff. However socialistic in theory, the Gold Coast Government is already seeing itself driven towards encouraging more and more the development of private initiative, as opposed to Government or Government-sponsored enterprises, in the field of productive investments within the country. The simplest and healthiest way towards such an objective might well be to allow an accumulation of capital in the hands of a fairly large number of local people. Looked at from this, long-range, point of view, our previous question of whether that minority of the Gold Coast population, the " cocoa farmers," should be allowed to retain a much higher percentage of the cocoa income than before, may well be given a positive reply, agreeing thus with the conclusions put forward in the first article, though for different reasons.

The Cocoa Marketing Board

The main positive [1] reason for the establishment of the Cocoa Marketing Board has been to ensure short-term, " seasonal," price stability for the farmers. All the same, even to-day the so-called " fixed " price varies for individual farmers according to

[1] The negative reason was to counteract the buyers' " ring."

the differential advantages, including slightly better prices, or advances on next year's harvest, made to them by competing brokers who are working " in the bush " on behalf of the companies which themselves act as agents for the Cocoa Marketing Board. Such variations are comparatively small, but the bargaining principle is none the less definitely in existence throughout the cocoa-buying field. The " fixed " Cocoa Marketing Board price is thus in reality a minimum price. It has therefore been suggested that the elimination of the Cocoa Marketing Board, the re-establishment of free competition in buying and the guaranteeing of a minimum price, which would limit the downward price fluctuations during the season, could be a possible alternative solution which would only extend an existing tendency. The Government could get its share of income in the same way as before, namely through an export tax, with the added advantage to the Government that the tax, being now imposed directly on the exporting firms, and not on the " farmers " through the Cocoa Marketing Board, might meet with less political antagonism. The tax could thus, if thought desirable, be increased appreciably, taking over some of the present-day inflow into Cocoa Marketing Board funds. Though such a scheme looks attractive, there are difficulties in the way of its implementation : the buyers' " ring " of 1937/38 has still not been forgotten by the farmers or by the country, and any move which might make the re-establishment of such a " ring " possible would be looked upon with deep suspicion. The Cocoa Marketing Board monopoly, though (together with Government taxation) depriving the farmers of up to half the world price for cocoa, and thus coming from time to time under fierce criticism from them, meets all the same with their general approval, because it guarantees that the big, and foreign, firms will not be victimising them or making undue profits out of them by rigging the market. No promise of " good behaviour " on the part of the firms could at present eradicate such a deep-seated suspicion, and it would need an extremely careful plan to ensure both that the firms would not exploit the individual farmers and that the farmers should believe that no such possibility exists. At present, therefore, whether a return to an entirely competitive buying market is economically desirable or not, it is politically and psychologically still not feasible. With an expansion of co-operative and similar, " non-commercial," marketing, which could provide a check, obvious to all, on the behaviour of commercial firms, the whole position of the Cocoa Marketing Board could be again discussed and possibly revised in the future.

Any system of free marketing then established would have to be not only both acceptable and enforceable, but would also have to fulfil the functions of a futures' market by taking the risks of seasonal price variations off the farmers' shoulders.

Meanwhile, the Cocoa Marketing Board will have to continue to exercise its present-day functions of sole ultimate purchaser, and seller abroad, of Gold Coast cocoa. But in so doing, it should not attempt to include in its policy either an income or a long-period price stabilisation arrangement. A real-income stabilisation is in any case, as pointed out in the first article, quite unattainable, and a money-income stabilisation would put the cocoa farmers' group in the invidious position of being favoured as compared to the rest of the community in times of decreasing consumer-goods prices, and penalised in the opposite case. Though some economic reasons can always be adduced in favour of any policy, it would be difficult to show convincingly and conclusively why one-tenth of the population should be singled out to have its income stabilised. Much more important, the whole problem of a " group " stability begs the question. From Table III it can be seen that output in every region has varied considerably from year to year, and sometimes in the opposite direction from the total Gold Coast output.

TABLE III

Gold Coast Cocoa Output Variations, by Regions

Crop Year.	Ash.	W.P.	C.P.	E.P.	T.V.	Total.
1939/40	100	100	100	100	100	100
1940/41	111	80	83	96	97	98
1941/42	109	109	111	101	108	106
1942/43	81	80	74	86	93	83
1943/44	109	76	98	85	88	95
1944/45	117	149	141	104	126	116
1945/46	104	117	76	84	78	109
1946/47	84	104	134	81	111	92
1947/48	133	113	73	87	123	108
1948/49	119	135	177	147	133	134
1949/50	92	93	89	82	92	89
1950/51	106	118	108	103	102	106
1951/52	80	71	71	85	96	80
1952/53	121	106	127	106	118	117

Note.—The table gives the output for each year as a percentage of the output of the previous year with 1939/40 as basis.

A break-down by sub-areas of the figures for the Central Province, where there has been the smallest change in the number of farms in production, has been made in Table IV for two sets of succeeding years in which total crop changes have been com-

TABLE IV

Purchases by Firms, Central Province (in Tons)

	1 1940/41.	2 1941/42.	2 as % of 1.	3 1942/43.	4 1943/44.	4 as % of 3.
1. Twifu . .	574	971	169	600	1,157	193
2. Foso and North .	1,117	1,725	154	830	887	107
3. Oda and North .	3,204	5,704	178	3,894	4,180	107
4. South of Oda .	2,234	2,175	97	1,965	1,802	92
5. Cape Coast .	2,691	2,860	106	1,774	2,002	113
6. Saltpond . .	4,177	3,774	90	2,781	2,594	93
7. Swedru Town .	7,544	7,107	94	1,238	1,325	107
8. ,, East .	3,159	2,420	77	3,456	3,213	93
9. ,, North .	3,279	5,112	156	6,133	5,483	89
10. ,, West .	927	595	64	1,453	1,109	76
Total . .	28,906	32,443	111	24,124	23,752	98

Note.—There is a slight discrepancy between the above totals and those in Table I, sources being different.

paratively small. Even so, it can be seen at a glance that variations between the various sub-areas have been large.

It can only be expected that, by the law of averages, the variations for individual farmers within each region and sub-area should have been even bigger. The Paish–Bauer formula (or any other similar formula) might attempt to deal with a price–quantity variation for the *whole* country, but who could possibly be expected to apply such formulæ separately for every individual farmer? And unless that is done, the idea that such formulæ will ensure "stable" payments to "farmers," to cushion them against the effects of uncontrollable price and output vagaries, becomes an illusion. The illusion is only shown to be greater if the constant geographical shift of production is taken into account: should a farmer whose farm has come into production for the first time be paid nothing so as to "stabilise" his income, and should the farmer whose farm has been killed by swollen shoot be paid his pre-swollen shoot income for ever after? And if it should be thought desirable to attempt to give a fair solution to such cases (and from Tables I and II it can be seen that they might involve a large proportion of cocoa farmers at present) could there be any practical way of working out, within a continuously shifting group, an income-stabilisation formula for the *individual* farmer, who is the entity which counts, and not for that vague and meaningless group, "the cocoa-farmers," which is, in such a context, simply another case of misplaced concreteness?

A long-term price-stabilisation policy would not be much easier to implement than an income-stabilisation one, if price stabilisation is taken to mean what it should imply, namely an

evening out of large-scale fluctuations in the world market price. If the world market price itself is comparatively stable, then, of course, a price-stabilisation scheme—almost any price-stabilisation scheme—will work, but then obviously the "policy" is trite. Of the large-scale changes, *one-way* changes could not possibly be "evened-out" by any such scheme. Nor is there any reason for such a policy, as it would be not only idle but also unwise to try to fight against a persistent trend, upwards or downwards.

"Catastrophic" *trade-cycle* changes, which seem to be the case subconsciously kept in mind when arguments in favour of stabilisation schemes are put forward, would also be outside the reach of a stabilisation scheme in our case. The cocoa income constitutes at least one-third of the total individual cash income in the country—possibly more. It is possible to subsidise an economically small section of the community for a certain period of time, but no country can possibly subsidise such an important cash-earning group. To imagine that in a time of depression, when the whole income of the Gold Coast, as a primary producer, would have been cut down drastically, any stabilisation funds in existence could be used solely for bolstering up the income of the upper tenth, while the rest of the country would meekly look on and accept to do without, is to expect too much of human nature. Any large accumulated funds could be used at such times (as has been argued in the second article) only for the benefit of the country as a whole, and not for that of a small part of its population.

The problem of the already existing funds, nominally earmarked for "reimbursement" to the farmers, is thus an acute one. Experimental work, leading to improved production, eradication of swollen shoot, even certain direct investments, such as the building up of a cocoa-carrying fleet of ships directly owned by the Board, would only nibble at these huge funds. Nor is it feasible to redistribute the money to cocoa farmers, because no method could be worked out which would be both fair to individuals and economically desirable from the point of view of the cocoa industry. The contributions to the Board's funds have been made over a period of some fourteen years. During this time, cocoa production has shifted away from the Eastern Province and into the "new" areas. No record has been kept of past "contributions" by individual farmers to the fund. Who could the fund be given to? If it were redistributed in proportion with present-day individual production, say by doubling or trebling to-day's price to the farmers over the next three or four years, which would be the only administratively feasible way, the

old farmers, who have suffered heavily from swollen shoot and are now largely or completely out of production, would have been made to pay with their past "earnings" for the increased income of the new farmers, who are already enjoying high revenues from their plantings in the new areas. To try, on the other hand, to pay out cocoa money to the old farmers, who are now out of production, would be a hopeless enterprise administratively, not much fairer than the previous alternative, and would serve no economic purpose as far as the cocoa industry is concerned. The idea, therefore, of using the whole of the cocoa fund to the direct benefit of the cocoa farmers who contributed to it is, to put it mildly, difficult to implement in practice. Nor does the present-day system of Governmental "borrowing" from the Cocoa Marketing Board help to solve the problem of the surplus funds: it simply postpones the evil day when a decision as to the real ownership of the funds will have to be taken. Such a decision can only be a *political* one, taken with the general approval of the whole country *as well as of the cocoa farmers themselves*, and the only possible solution, after setting aside certain moderate amounts needed for specific purposes, such as those mentioned above, will ultimately be to take over the whole remaining funds and transform them into a national development fund. Such a solution would not only be an honest and courageous facing of the problem, and put an end to the continuing political embarrassment the existence of the fund creates, but would also allow the Government and the Cocoa Marketing Board, now that some longer-term price stability seems to have come to the world market for cocoa, to start on their new cocoa taxation and pricing policy without the need to look continuously backwards.

The main functions of the Cocoa Marketing Board should then be only of guaranteeing a stable price over one season at a time and of ensuring that the collection, transport and selling of cocoa take place as efficiently as possible. Its existence, made necessary by the deep-seated (and, in the past, justified) distrust by the farmers of the large buying companies and their market-rigging tendencies, as well as by the absence of any futures' market which could take the risk of general price fluctuations within the "season" off the farmers' shoulders (and such price fluctuations are especially violent in the case of cocoa) [1] should not be used

[1] In the neighbouring Ivory Coast, where no seasonal price-stabilisation schemes exist, there seems to be a definite tendency of moving away from cocoa production, towards cola-production, which has a stable "local" market throughout West Africa. No such tendency exists in the Gold Coast.

for other purposes than the above-mentioned. The idea of any large accumulations of funds for income, or for long-term price, stabilisation purposes is especially to be deprecated, both because it is impractical, and because it can give rise, when attempted, to difficult economic and political problems. The Cocoa Marketing Board will have to maintain certain reserve funds, over and above those needed for its normal duties as outlined above, but such funds should not be kept with a view to act as a cushioning funds for the farmers, but as a precautionary reserve in case the Cocoa Marketing Board's price, as announced at the beginning of the season, could not be met from its sales on the world market. The fund would thus simply provide an immediate cover for the Cocoa Marketing Board in case of a wrong estimate of the market. A cautious policy, as followed in the past, would ensure that a series of bad seasons does not leave the Cocoa Marketing Board without cover; but in contrast to the past, any excedents should be used for increased payments in the succeeding season. Such a policy, difficult to implement in a period of rapidly changing prices, should be more within the reach of the Cocoa Marketing Board to-day.

Any funds required by the Government from the cocoa farmers should be raised directly through taxation, and if the Government should think it necessary to mop off "surplus purchasing power" (which, in to-day's conditions of plentiful world supplies, and with the improved landing facilities in the Gold Coast, should hardly prove necessary), it should do so directly, either through increased taxation or by other governmental devices, such as voluntary or compulsory loans. It could even, if it felt that the farming community would stand such treatment, impose an "excess profits tax," which would limit payments to farmers to some definite (and stable) price over a number of years. But all such measures will have to be taken by the Government. I cannot but agree with the authors of the first article that it completely falsifies the whole conception behind the establishment of the Cocoa Marketing Board, and it leads to embarrassing situations, to use it for such Governmental purposes.

B. M. NICULESCU

University College of the Gold Coast,
Achimota.

INTERNATIONAL INVESTMENT TO-DAY IN THE LIGHT OF NINETEENTH-CENTURY EXPERIENCE [1]

To many Americans to-day the problem of international investment is doubtless a source of perplexity and even of some irritation. Ever since the last world war great expectations have been placed on the export of private American capital as a means of bridging the dollar gap as well as financing world economic development. In reality, private foreign investment throughout the period since 1945 has fluctuated at a low level and without any sign at all of an upward trend.[2] This is most disappointing. We suspect that the export of capital from Great Britain was one reason why the international economy of the Victorian era did not know of a chronic sterling shortage. We recognise, above all, that foreign investment was associated during that era with a tremendous spurt in world production and trade. There is in America a feeling of nostalgia for the nineteenth-century environment that made this flow of capital possible. The question is: why can we not re-create that environment?

The answer, I submit, must start from the fact that the circumstances in which overseas investment, and more especially British investment, went on in the nineteenth century (which I take to have ended in 1914) were in some ways quite exceptional. To realise this is of more than historical interest. So long as the peculiar features of that experience are not fully appreciated, memories of wonders worked by foreign investment in the past can only lead to false hopes and frustration.

Recent researches have made it possible to estimate approximately the percentage share of her national income that Britain used to lend abroad. Occasionally one finds the same proportions being applied to the present American national income as an indication of what the United States could or should do. Over the fifty years that preceded the outbreak of the First World War, it seems that Great Britain invested overseas

[1] A paper prepared for discussion at the Conference of the Association of University Teachers of Economics at Sheffield on January 2, 1954. My thanks are due to Mr. David Butt and Sir Donald MacDougall for a number of valuable and helpful comments.

[2] Cf. *Federal Reserve Bulletin*, October 1953, pp. 1039–42.

an amount equal to about 4% of her national income. In the later part of the period (1905–13) the ratio was as high as 7%. If the United States to-day were to devote similar percentage portions of her national income to the same purposes, she would be exporting funds to the tune of $12 billion or, if we apply the higher percentage, some $20 billion each year. These figures are almost absurdly large and tend to confirm the view that there was something unique about Britain's foreign investment.

It was unique in that the greater part of it—roughly two-thirds—went to the so-called "regions of recent settlement": the spacious, fertile and virtually empty plains of Canada, the United States, Argentina, Australia and other "new" countries in the world's temperate latitudes. It was unique in that it went to these places together with a great migration of about 60 million people,[1] including many trained and enterprising persons, from the British Isles as well as Continental Europe. The conditions that made this flow of private capital possible do not exist to any great extent to-day, and probably cannot be re-created.

It was in the newly settled regions, which received two-thirds of the capital exports and practically all the emigrants, that nineteenth-century international investment scored its greatest triumphs. The remaining third of British capital exported (or more accurately a quarter, since some went to Continental Europe) was employed in a different type of area, where its achievements were much more dubious: tropical or sub-tropical regions inhabited, often densely, by native populations endowed in some cases with ancient civilisations of their own. The areas that formed a minor field for overseas investment before 1914 are the major problem to-day: the truly backward economies, containing now about two-thirds of the world's population. The empty and newly settled regions, from which international investment derived its brilliant general record and reputation, are to-day, in *per capita* income, among the most prosperous countries in the world.

Labour and capital are complementary factors of production, and exert a profound attraction on each other. The movement of labour to the new regions attracted capital to the same places at the same time. And the other way round: the flow of capital stimulated the migration of people to these places. To some extent, it is true, the parallel movements of capital and labour

[1] This is a gross figure; some of the migrants returned.

might plausibly be interpreted as two separate effects of a common cause; namely, of the opening-up of the vast reserves of land and other natural resources. But the complementary nature of the labour and capital movements, based on the complementarity of the two factors, is equally plain. Any barrier to the transfer of one would have reduced the flow of the other. Labour and capital moved along side by side, supporting each other.[1]

In the twentieth century the situation is totally different. The capital exports from the United States can be viewed rather as a *substitute* for the movement of people. Capital and labour are still complementary, and still basically attract one another. But as things now are, restricting the movement of labour in one direction increases the need, if not the incentive, for capital to move in the opposite direction. Cheap labour, instead of being allowed to come to the United States to work with American capital there, is to some extent supplied with American capital abroad (supplied by the American Government as in the years since 1945, if not by private profit-seeking investors, as in the 1920s). The underlying pressure—not necessarily the profit motive, but what we might call the global social pressure—is very strong for more capital to move out from the United States to work with the cheap labour in the world's backward economies. But notice that in this situation, in sharp contrast to the predominant nineteenth-century pattern, capital is being urged to go out to work with people that have not grown up in a capital-minded milieu, and may not be culturally prepared for the use of western equipment, methods and techniques.

With this situation in mind, we can perceive what I think is the basic rationale of the present American emphasis on direct business investment as a means of financing economic development. The advantages rightly attributed to it are, first, that it goes out with American enterprise, tied up with American "know-how," and, secondly, that it is likely to be productively used, not swallowed up—directly or indirectly—by immediate consumption in the receiving country. Since, however, in the low-income areas the domestic market is small, this type of investment tends inevitably in such areas to concentrate on extractive industries—mines, plantations, oil wells—producing raw materials for export

[1] It is interesting to observe that the parallel nature of the two factor movements shows itself also, according to Professor A. K. Cairncross (*Home and Foreign Investment, 1870–1913* (Cambridge, 1953), p. 209), in the close agreement with which capital exports and emigration from Britain varied from decade to decade between 1870 and 1910.

mainly to the advanced countries. This is, in effect, the so-called "colonial" pattern of foreign investment, of which American oil operations abroad are now an outstanding example. It has its drawbacks as well as its virtues. But, in any event, the stress laid—even in the original Point Four programme—on direct investments in economically backward countries should not, in my opinion, be dismissed as merely a product of conservative business ideology; it reflects in part an essential difference in the present-day environment of international investment as compared with the nineteenth century.

In the aggregate flow of capital in the nineteenth century, the "colonial" type of venture played a minor role. Looking at Britain's foreign investment portfolio in 1913, we find that, of an estimated total of about £3,700 million outstanding at that time in nominal value, 30% was in loans to governments, as much as 40% in railway securities and some 5% in other public utilities, so that no less than three-quarters of the total was in public or public-utility investments. The rest includes banking, insurance and manufacturing companies, as well as investments directly in raw-material extraction. The total should be increased by making some allowance (say, £300 million) for private holdings and participations not represented by securities listed on the London Stock Exchange; but that would make little difference to the proportions indicated. It is therefore far from correct to assume, as is sometimes done, that the "colonial" form of enterprise in the extraction of mineral and plantation products for the creditor country was the typical pattern of foreign investment. To call it the "traditional" pattern might be justified in view of its history in earlier centuries. But in the nineteenth century its total amount was comparatively small; and what little there was of it appears to have been concentrated, as one would expect, in colonial and predominantly tropical areas.

To the new countries, by contrast, capital moved chiefly through the medium of securities carrying a fixed return (*i.e.*, bonds and preference shares) issued by public authorities and public-utility undertakings. To these countries, it appears, capital could safely be sent in the form of relatively untied funds, with a good chance that it would remain capital there, because the people in these places, having come from Europe themselves, knew what to do with capital and how to handle it. Cultural adaptation was no problem.

These countries—the "regions of recent settlement" that absorbed the bulk of British overseas investment—were offshoots

of European civilisation.[1] For Britain, or at any rate for Europe as a whole, investment in these areas was essentially a process of capital widening rather than deepening. Indeed, when Britain sent capital out to work with Swedes, Poles, Germans and Italians emigrating overseas, she may have done so at the expense of the deepening which her own economy is said to have needed in the period just before the First World War. But international investment in the nineteenth century was, of course, unplanned, and was determined by private rather than national advantages. French and German activities in Eastern Europe and the Near East were an exception in this respect. As Professor Viner has remarked, "the French loans to Russia . . . bore a close resemblance to the programme of military aid to Western Europe which we are now embarking on."[2]

Great Britain's national advantage, apart from the return flow of interest and dividends, seemed to be handsomely served through cheaper food and raw materials, though this benefit was shared by other importing countries that had made no corresponding investments and, besides, as we now realise, was derived in part from *Raubwirtschaft*, through soil depletion and erosion in some of the rich new plains (for example, in the virgin grasslands of the Mississippi valley).

Production of primary commodities for export to the industrial creditor countries is characteristic of the "colonial" pattern of direct investment in economically backward areas. In the regions of recent settlement foreign investment can also be said to have been induced essentially by the raw-material needs of the industrial centres—especially by Great Britain's demand for the wheat, wool, meat and dairy products, which she decided not to try to produce for herself, and which these temperate regions were particularly well suited to produce. The capital that came into these regions did not, however, enter into primary production itself, but was employed above all in building up the costly framework of public services, including especially transport, which laid the basis for domestic industrial development, as well

[1] The precise composition of this group may give rise to some debate, though essentially the line is clear. It takes in Canada, the United States, Australia, New Zealand and South Africa. In South America it certainly includes Argentina and Uruguay, rich farm and grazing lands in temperate latitudes settled predominantly by recent immigration from Europe. I would perhaps include also the southern tip of Brazil, to which the same description largely applies, and in which most of Brazil's productive capacity, including immigration as well as foreign capital, has been concentrated since the middle of the nineteenth century.

[2] "America's Aims and the Progress of Underdeveloped Countries," in *The Progress of Underdevloped Areas*, edited by B. F. Hoselitz (Chicago, 1952), p. 184.

as for the production of raw commodities for export. These areas are now, and have been for some time, predominantly industrial,[1] a fact entirely compatible with the large or even preponderant share of primary products in their export trade.

Nineteenth-century foreign investment centered on the railway—that "great instrument of improvement," in Lord Dalhousie's phrase. If account is taken not only of railway securities but also of the use to which many government loans were put, it seems that well over half of Britain's external investment before 1914 went into railway construction. The great bulk of this was in the newly settled countries. The Indian railways, though an important individual item, accounted for less than one-tenth of the total of overseas railway securities held by British investors in 1914. The United States and the Argentine alone accounted for more than half of that total. In the new countries the railway was important as a means of migration. The great pioneer lines—first in the United States, later in the Argentine and elsewhere—were deliberately planned and built *in advance* of current traffic needs; they themselves created the settlement and economic growth that eventually led to a full demand for their services.

Although individual promoters sometimes played the most conspicuous part, the railways in the new countries were built, as a rule, if not directly by governments, at any rate with extensive government assistance in the form of land grants, subsidies and guaranteed returns to the investors. In view of this fact, one can safely say that the bulk of international investment in the nineteenth century depended on government action in the borrowing countries. In French and German capital exports, some of which also went to the new world, the proportion of government loans and other public investments was even higher than in the British case.

It is true that the transport revolution, to which the cheapening of British food imports (especially in the years 1880–1900) was largely due, was a matter of steamships as well as railways. While railway construction overseas was a major object of international financing, British shipbuilding counted almost entirely as part of British home investment. Since ship and railway building had much the same effects on international trade and the terms of trade, the distinction between home and foreign investment appears in this case somewhat arbitrary. In the internal

[1] See F. Hilgerdt, *Industrialization and Foreign Trade* (League of Nations, 1945), pp. 26, 39 and *passim*.

economic expansion of the new countries, however, the railways had, of course, a very special part to play, rather different from that of the ships. And so we hear, for example, that " in the Argentine, the railway is like a magic talisman : for wherever it goes it entirely transforms the economic and productive conditions of the country." [1]

Overseas railway investment became predominant from about 1870 onwards. But this does not mean that the earlier part of the century can be ignored. While the total of foreign investment was much smaller then, so was everything else. We should note that by 1870 Britain's overseas assets had already grown to about the same order of magnitude as her annual national income. Capital imports were a prominent feature in the economic history of the United States for many years before the Civil War.

It is clear that the main flow of capital in the nineteenth century was not to the neediest countries with their " teeming millions," which were indeed neglected, but to sparsely peopled areas where conditions for rapid growth along familiar western lines were exceptionally favourable. If we were to look round for similar opportunities in the twentieth century, I do not know where we should find them if not in the further development of the same regions of recent settlement ; or else perhaps in Siberia—a vast area reputedly rich in natural resources, which may be longing for an injection of skilled labour from Europe and capital from the United States.

Once the main facts about the nineteenth-century capital flow are set out in something like their true proportions,[2] it is

[1] A. B. Martinez and M. Lewandowski, *The Argentine in the Twentieth Century* (London, 1911), p. 108. A statement such as this applies to a type of region with the particular physical and human characteristics already noted. It would not apply in the same way to a country like India, where, for reasons that cannot be entered into, the railway " did not give rise to a flood of satellite innovations " and " destroyed more employment opportunities [*e.g.*, in traditional village industries] than it opened up " (L. H. Jenks, " British Experience with Foreign Investments," *Journal of Economic History*, 1944, Supplement, p. 75).

[2] I have thought it superfluous to give detailed references to the well-known sources, such as the works of C. K. Hobson, L. H. Jenks, H. Feis and the Royal Institute of International Affairs. Among recent essays and articles that I have found useful, the following should be mentioned : N. S. Buchanan, " International Finance," *Survey of Contemporary Economics* (Vol. II, ed. by B. F. Haley, 1952); P. Hartland, " Private Enterprise and International Capital," *Canadian Journal of Economics and Political Science*, February 1953; Sir Arthur Salter, " Foreign Investment," *Essays in International Finance*, Princeton University, February 1951; Brinley Thomas, " Migration and the Rhythm of Economic Growth, 1830–1913," *The Manchester School*, September 1951; L. H. Jenks, " Railroads as an Economic Force in American Development," *Enterprise and Secular Change* (ed. by F. C. Lane and J. C. Riemersma, 1953); H. S. Ferns, " The Establishment of the British Investment in Argentina," *Inter-American Economic Affairs*, Autumn 1951; J. F. Rippy, " British Investments in Latin America, End of 1913," *ibid.*; A. H. Imlah, " British Balance of Payments and Export of Capital, 1816–1913," *Economic History Review*, 1952 (vol. V, No. 2).

curious to see how little they fit in with some pre-conceived notions that have been widely current. Bernard Shaw, for example, in Act I of *The Apple Cart*, made one of his characters talk about England sending her " capital abroad to places where poverty and hardship still exist : in other words, where labour is cheap. We live in comfort on the imported profits of that capital." Consider, more seriously, the summary which Mrs. Joan Robinson gives (in *The Rate of Interest and Other Essays*, 1952, pp. 157–8) of the views of Rosa Luxemburg :

> " The capitalist nations are surrounded by primitive economies, each insulated from the others like a nut within its shell, waiting to be cracked. The capitalists break open a primitive economy and enter into trade with it, whether by enticing its inhabitants with commodities they have never seen before, by political cunning or by brute force. Now exports to the primitives provide an outlet for the product of the last batch of capital goods created at home. After a little while another nut is broken, a use for more capital is thereby found, and so on, as long as the supply of untouched primitive economies lasts. . . . When the stock of unbroken nuts is exhausted, the capitalist system collapses for want of markets."

This is one variant of neo-Marxist doctrine and, like others, it neglects some crucial facts. No pre-existing markets were conquered in the new countries. Markets were *created* there by labour, enterprise and capital all drawn from Europe. In the industrially primitive countries markets were and have remained unattractive because of mass poverty. Why is it, for example, that in the 1920s Canada, Australia and New Zealand, with already quite highly developed industries of their own and with a combined population of only 17·4 millions, imported twice as much manufactured goods as India with her 340 million people ? [1]

The American public also, perhaps because it lives in one of the new countries itself, does not always appreciate the peculiar nature of the nineteenth-century investment experience. Some of us are too apt to forget—or to take for granted—all that went with it and to assume, from that experience, a " simple equivalence of the pace of capital transfer and the pace of development." [2]

[1] F. Hilgerdt, *op. cit.*, p. 84.

[2] Honor Croome, " The Dilemma of Development," in *New Commonwealth*, November 9, 1953, p. 487.

Keynes in 1922 made a remark that is worth recalling: "The practice of foreign investment, as we know it now, is a very modern contrivance, a very unstable one, and only suited to peculiar circumstances." [1] He cautioned against extending it by simple analogy to a different set of circumstances. Private foreign lending in the 1920s can be viewed in part as a backwash of the great momentum which it had gathered before 1914. Was it because in Central Europe foreign investment was applied to a situation to which it was unsuited that it came to grief there? It might perhaps have worked; Hitler did not give it a chance. Yet the fact is that it did not work.

Will it work, and if so, how will it work, in the "under-developed" areas of which we hear so much to-day? The preceding remarks have all been leading up to this question. My purpose here is to present the question, against the background of past experience, rather than try to answer it. In the time that remains I will only hazard a few brief comments on three general topics: direct business investment, public-utility investment and governmental grants.

The assumption I am making here—that it is the low-income areas that constitute the main problem of international investment in the mid-twentieth century—may be challenged as arbitrary and not entirely justified. The most profitable opportunities may still be in the "regions of recent settlement." But having regard to their high income levels, these fortunate regions can, in the present discussion, be left to provide, by and large, for their own development needs.

For reasons mentioned earlier, direct investments by American business firms—usually financed from corporate reserves rather than security issues on the capital market—are thought to be particularly well suited to the economically backward countries. But they have their shortcomings also. In the life of an industrially primitive community they are apt to create not only a dual economy [2] but also a dual society, in which conditions for the diffusion of western technology may actually be the reverse of favourable. Foreign business investment is not always a happy form of encounter between different civilisations. Besides, if techniques are to be of wide and permanent use, they must be adapted to local conditions. The methods of giant corporations,

[1] *A Revision of the Treaty*, p. 161.

[2] Cf. H. W. Singer, "The Distribution of Gains between Investing and Borrowing Countries," *American Economic Review, Papers and Proceedings*, May 1950.

whose foreign operations are sometimes only a side-show, are often too standardised to favour such adaptation. And so the local economy may not get much help from the example they give; the example is often inapplicable. Let us remember that the Japanese acquired industrial techniques very effectively before they began to receive any substantial foreign business investments. Also the technical assistance programmes now in operation remind us that there are other ways of spreading technical knowledge.

As a rule, when foreign business enterprise is attracted to economically backward areas, it is mainly for the production of raw materials for export markets, for the simple reason that the domestic market in such areas, even if protected by import restrictions, is generally too poor to afford any strong inducement to invest.[1] The natural result is a "colonial" investment pattern, open to the familiar criticisms that it tends to promote lop-sided rather than "balanced" growth, and that it makes for instability due to high dependence on foreign demand for one or two staple products. If this type of direct investment is to take place in any considerable volume, it presupposes a long-run prospect of rapidly expanding demand in the industrial centres for the raw materials which it seeks to provide. Despite the forecasts of the Paley Report, there is no firm assurance of such an expansion except for certain minerals. Governmental purchase agreements alone cannot give this assurance in the absence of favourable basic demand conditions. A temporary stimulus might be got from the removal of United States tariff protection on primary products (such as sugar, copper, wool), but little can be hoped for in this direction.

In the last few years one of the chief economic obstacles to a greater flow of business funds to low-income countries has been the high level of business profits obtainable at home, from develop-

[1] From the latest comprehensive figures for American direct investments (*Survey of Current Business*, December 1952), it can be seen that of the total invested in Canada and Western Europe at the end of 1950, 23% was in extractive industries, as much as 60% in manufacturing and trade, 6% in public utilities and 11% in miscellaneous activities, including cinemas and other entertainments. Of the investments outstanding on the same date in all other countries, which with a few exceptions are economically backward, 60% was in extractive industries, mostly petroleum and mining, with 20%, 17% and 3% respectively in the other groups. This pattern is by no means new. We know that in 1929 only one-fifth of total American direct investment was in manufacturing, and 84% of this was in Western Europe, Canada, Australia and New Zealand. "Only to a very small extent, therefore, did American direct investments enter into manufacturing for the domestic market in under-developed countries." (United Nations, *International Capital Movements in the Inter-War Period*, 1949, p. 32.)

ing American natural resources and catering to the American mass market. Conditions may change. It is not inconceivable that business investment abroad might greatly increase in the future, and that it might bring substantial benefits to the poorer countries. Yet, on the whole, it seems unlikely that direct investment alone can become anything like an adequate source of international finance for economic development. It played, as we saw, a minor part in the nineteenth century. Can we rely on it to play a major part to-day? I doubt it.

What is most urgently needed to-day is a revival of the public or public-utility type of international investment that used to dominate the scene. The International Bank has hardly begun to fill the gap left by the disappearance of this type of private foreign lending. If the past cannot be reproduced, it is all the more imperative to devise a new pattern suited to present needs and conditions. Critics have wondered how much of nineteenth-century foreign investment would have survived the tests and rules laid down by the International Bank. The Bank, being dependent on the private capital market for most of its loanable funds, inevitably reflects to some extent the attitudes of the private investor. And the private American investor is still waiting for a change in the weather, and remains unimpressed by statistics showing that only 15% of the dollar bonds (not counting direct investments) floated in the 1920s by under-developed countries—that is, aside from Central Europe—have proved a permanent loss.[1]

It is said that there are not enough productive projects in the low-income countries to absorb much more money than is now going out. It is pointed out that the Marshall Plan, which accustomed the world to the sight of a large dollar outflow, was not a plan of new development so much as one of reconstruction, in an area where a solid industrial foundation and the "know-how" of a skilled population already existed.[2]

No doubt this point has considerable force. But if there are not enough projects, can we not ask for international technical assistance to design them and to draw up the blueprints? Lack of basic services, such as transport, power and water supply, is a particularly serious bottleneck in the poor countries. Because

[1] Cf. the Gray Report (1950), p. 62.

[2] It will be remembered, however, that some of the Marshall Aid was in effect passed on to "under-developed" countries (especially by way of the United Kingdom, whose overall balance was in equilibrium in 1948–49 and in surplus in 1950).

of this the *physical* environment—quite apart from the obvious difficulties arising from the political or social climate—is unfavourable to private investment. A large foreign firm producing raw materials for export may find it profitable to set up incidental facilities such as roads or waterworks, of which the local economy, too, can make some use. But the general utility of such things often depends in haphazard fashion on the technical features of the firm's main activity. It may be fairly high in the case of a railway built by a mining company from the interior of Peru to the sea-coast. It is virtually zero in the case of the pipe-line in which Arabian oil is pumped to the Mediterranean.

In the United States a hundred years ago public authorities, as well as private promoters, played a leading role in the drive for "internal improvements," financed in part by foreign capital. There is no question that ample scope exists for international financing of public improvements in the poor countries to-day. Until these countries have acquired a skeleton framework of such facilities, conditions will not be particularly attractive for the more varied and smaller-scale business investments there. Even with such basic improvements, of course, the individual business investments, domestic as well as foreign, may fail to materialise, because of other obstacles. It is conceivable, therefore, that some of these public works would turn out to be white elephants. But the risk has to be taken; any form of capital investment is, in the last analysis, an act of faith. However hard it may be for the pioneering spirit that opened up the new countries to apply itself to the low-income areas to-day, not much can be achieved without that spirit, and no international organisation concerned with development can remain untouched by it.

Apart from the distribution of the promoter-function, there still remains the question of finance. If the profitability of American business at home has kept down direct investments abroad, a simple comparison of bond yields does not explain why "portfolio" lending cannot get started again. However, while the private investor has been standing on the side-lines, we may have witnessed the beginnings of a system of international grants-in-aid and low-interest loans from government funds. The reference to the principle of Equal Sacrifice with which Roosevelt defended the Lend-Lease programme may some day appear significant in retrospect. I need not point to other signs and landmarks. Let me just quote a few recent expressions of opinion. The man who gave his name to the Marshall Plan, in accepting the Nobel peace prize last December, said that it was "of basic

importance to any successful effort towards an enduring peace that the more favoured nations should lend assistance in bettering the lot of the poorer." [1]

Dr. Herbert Feis, the historian of nineteenth-century foreign investment, has expressed himself as follows :

> "A sense of obligation has won its way in the world to the effect that a wealthy country has a call of vague dimensions to provide means to assist poorer and suffering countries. To give free admission to [it] would bankrupt us and demoralise others; but to ignore the obligation wholly would be . . . out of accord with the effort in which we are engaged, to bring together the nations of the world in peaceful and co-operative understanding." [2]

Even if we hesitate to accept the assumption that world peace can be bought or that material progress makes for contentment, the fact of growing pressures for international income transfers must nevertheless be recognised. It may be precisely because the problem of international investment is now, unlike what it was in the Victorian era, concerned in the main with the backward economies that the need for such transfers is felt to arise.

The difficulties which American trade policy encounters in following the British nineteenth-century example might also be taken to point to unilateral income transfers as more in accord with the underlying situation. With commercial foreign investment an adjustment of the trade balance to the return flow o interest and dividends cannot normally be long postponed, while gifts permit an export suplus indefinitely.[3]

[1] *The Times*, December 12, 1953.

[2] " International Economic Outlook," *Proceedings of the Academy of Political Science*, New York, May 1953, p. 59.

[3] However, I cannot fully share the view that, just because of the growing return flow to which it normally gives rise, foreign investment of the orthodox sort can be no more than a short-period remedy for international imbalance. When in support of this view it is said that the increase in Great Britain's foreign assets from 1880 to 1913 " was due wholly to the reinvestment of a part of the income derived from earlier investments " (Salter, *op. cit.*, pp. 9, 53), it seems to me that a somewhat arbitrary causal attribution is made between two items on opposite sides of the balance of payments, a procedure always of doubtful validity, and particularly so when one of the items represents payments on capital account, while the other belongs to the income account. That the individual British investor, on the one hand, was under no obligation to reinvest the interest he got from abroad is obvious. From the national view-point, on the other hand, all one can say is that the British current account, including foreign interest earnings as well as earnings from merchandise exports and shipping, showed a surplus, which was balanced by the outflow of capital. Britain had an excess of merchandise imports over exports throughout the period 1880–1913. Yet it is conceivable that if British foreign lending had come to a complete stop in (say) 1890, a disequilibrium in the international balance of payments—a " sterling shortage "—might have been felt in the succeeding quarter of a century.

The idea of international grants-in-aid is essentially a consequence of the increased gaps in living standards and of the closeness of contact that is creating at the same time an increasingly acute awareness of these gaps—a situation without historical precedent. This awareness is perhaps the most fundamental obstacle to the resumption of private international lending. In contrast to the position of the backward economies to-day, income per head in the principal debtor countries of the nineteenth century—the newly settled regions—can never have been far below European levels. Interest payments from poor to rich are now, it seems, not only basically unwanted by the rich countries but indeed are felt to be somehow contrary to the spirit of the age. And although public grants (for " social overhead capital ") and private foreign lending (for more specific investments) can ideally be looked upon as complementary rather than conflicting sources of finance, it is easy to see why in practice the two do not mix at all well. This applies not only to grants but also in some degree to international loans from government sources.

Persistent attempts in the United Nations organisation to set up a system of international grants under U.N. auspices—from the UNEDA proposal of 1948 to the SUNFED report of 1953—have foundered on the rocks of American opposition. Yet American practices and pronouncements alike have kept world expectations alive, and this has continued to some extent under the Republican administration. Two notable declarations by President Eisenhower last year attracted wide attention: one was the statement in April about " devoting a substantial percentage of the savings achieved by disarmament to a fund for world aid," the other being the so-called " Atom Bank " proposal for the international provision of atomic energy for peaceful purposes.

It must be recognised that international unilateral transfers have no necessary connection with the subject of foreign *investment*. They may be for current consumption or for military use. Even if they are intended for, or tied to, particular capital projects, a net increase in the overall rate of accumulation is not always assured. If they are to make an effective contribution to economic development, they call for domestic action in the receiving countries—fiscal, monetary and other policies designed to withhold resources from immediate consumption and to direct them into capital formation.

But once the receiving countries are capable of devising the necessary controls for the productive use of outside aid, they should be equally capable of using such policies for the mobilisa-

tion of potential *domestic* sources of capital (*e.g.*, skimming off resources now absorbed by luxury consumption, making use of labour set free from the land through better farm methods or recruiting any surplus labour already existing on the land). It is far from my intention to suggest that in these circumstances foreign aid becomes unnecessary. Yet this consideration does shift the emphasis upon the need for domestic policies to ensure that in the overall use of resources, domestic as well as external, investment is given top priority.[1] Here is the main criterion, and a body such as the World Bank has in this respect an even more vital role to play in the backward economies than that which the E.C.A. and the O.E.E.C. performed under the Marshall Plan.

These remarks on international grants and their possible uses may all be idle speculation, for which, perhaps, I should apologise. The practices alluded to may turn out to have been temporary devices related to particular emergency conditions. What I have said on these controversial matters should have been put in the form of questions—and extremely tentative questions at that. But they are, I think, questions which a survey of the present state of international finance inevitably draws to our attention.

RAGNAR NURKSE

Columbia University.

[1] This theme is developed in my *Problems of Capital Formation in Underdeveloped Countries* (Oxford, 1953).

THE POSITION OF ECONOMICS AND ECONOMISTS IN THE GOVERNMENT MACHINE

A COMPARATIVE CRITIQUE OF THE UNITED KINGDOM AND THE NETHERLANDS

THAT professional economists in government service should confine themselves to technique, leaving it to political leaders to set the objectives and take the decisions, is easier said than done. The border-line between the two rôles is blurred: most social scientists are possessed of sufficiently strong political views to find it almost impossible to keep their impartial analyses genuinely impartial. And most economists are so unconfident of the accuracy of their techniques that they are tempted to abdicate not only responsibility for value-judgments, but also for final decisions as to the technical advice Ministers should receive. Hence the relations between government economists and other government officials are almost as important a matter for study as the relations between officials and economic ministers. Nowadays, in most of the world's capitals, nearly every official fancies himself as an economist, and, particularly in this country, nearly every economist fancies himself as something of an administrator.

In a large group of Western European countries, and to some extent in the United States, there has been a remarkable similarity in the post-war development of relations between government economists, other government officials, Ministers and Parliament. In Western Europe the similarity is so marked that deterministic explanations are strongly indicated. But similarity of temperament, educational systems, political institutions and economic situation seem not the only factors; much is evidently attributable to the nature and significance of economic science. The development does not necessarily imply a process of evolution towards an ideal; one finds repetition (but little conscious copying) of bad things as well as good.

The distinguishing features of this similar development are:

(1) In all the countries a conscious general economic policy from the government, combined with a varying degree of direct intervention, in predominantly capitalist economies. The nature and scope of these policies have been such that the governments have inevitably required much more day-to-day advice from professional economists than before the war.

(2) The advent of (1) did not, in any of the countries, result in a general accession to power by professional economists. There was an increasing specialisation in economic affairs by officials, some with formal training as economists and academic standing, some as "amateurs." In addition, each government recognised the need for some central group, manned by trained economists recruited largely from the universities. Several such organisations were named economic planning bureaux, several were given less ambitious titles, but the functions of nearly all were essentially advisory rather than operational. A feature common to several of the countries was the emergence of one man, who as director of the central bureau, or as the government's chief economic adviser, exerted a strong personal influence on affairs, somewhat independently of his staff.

(3) In all of the countries there is a strong constitutional and administrative tradition of Departmental independence. Formal responsibility for the new economic policy was therefore morcellated among the various Departments of State, in a pattern basically much the same everywhere. In nearly all the countries, for example, a strong Ministry of Finance continued to be responsible for fiscal policy, budget making, internal financial policy and often the balance of payments, while the Central Bank, now nationalised to serve the broader ends of economic policy, acquired power to ensure that the bankers' point of view prevailed more than ever in the counsels of government, particularly in the new field of exchange control. The heterogeneous group of responsibilities which devolved upon the United Kingdom Board of Trade is also recognisable in similar ministries in other capitals, often under the name of a Ministry of Economic Affairs.

This morcellation was bound to present serious problems. Much delegation of responsibility was necessary. But all economic policy questions, even minor ones, are essentially interdependent. Further, the new concepts of macro-economic policy—concerning employment, the balance of payments, the general level of prices and so forth—had, self-evidently to be operated centrally. There was thus a definite conflict between traditional administrative *desiderata* and the needs of the newly shouldered economic responsibilities of the governments.

(4) The conflict described in (3) usually resulted in a compromise. If a question was "inter-departmental" in the administrative sense, then central intervention (by the central economic advisers, or some body such as the United Kingdom Central Economic Planning Staff, or both) might occur as a matter of right. If, however, a question, though involving the entire economy, fell administratively into the sphere of one Department only, then central intervention could occur only through persuasion, and always with the danger of provoking bad feeling. Central economic groups were given a clear field in the macro-economic work, but, because of the nature of the administrative set-up, much of this was left rather in the air: it was unusual, for example, for taxation departments to agree to frame their estimates of next year's revenue on the basis of the central economists' assumptions about income.

(5) Despite these constitutional and administrative difficulties, and despite the fallibility of their science, the trained economists in central bureaux, in all these countries, succeeded nevertheless in exerting some definite influence on policy at all levels. Sometimes it appears to the outside observer that the major part of their work lay in the preparation and publication of annual economic surveys or national budgets, but this impression mainly arises from the fact that much of their other work was confidential.

This development has now had some eight years to mature.[1] It does not seem too early, therefore, to begin to ask certain questions about the work of these central bureaux:

(1) What professional methods have been used?

(2) How has the work been organised, and what has been its scope?

(3) What has been its influence?

The similarities do not extend to the subjects of these questions. In working methods, organisation and results, as well as in important secondary details, there are major variations from country to country and major similarities. Thus comparative study should be fruitful.

The present article compares the *Centraal Planbureau* of the Netherlands' Government[2] with the organisation of professional economists in Her Majesty's Treasury, most of whom are con-

[1] In the United Kingdom there was also, of course, an important war-time development.

[2] One of the reasons for selecting this organisation for study was that it is directed by the author of a work on the theory of economic policy (see note 1, p. 767 below), and therefore has a *prima facie* case for investigation as a meeting ground of theory and practice.

centrated in the Treasury's "Economic Section." The article is based on information gained during an extended visit to the *Planbureau* [1] and on the author's personal experience and knowledge of the Treasury. The reader is warned, however, that whereas the Dutch officials willingly discuss their methods and problems with outside research workers, the Treasury pursues a policy of deliberate secretiveness—which its members are bound to follow—often extending even to the finer points of social accounting.[2] Hence with respect to the descriptive passages below which relate to the British side of the comparison, in contrast to those which relate to the Dutch, it was not possible to obtain confirmation, or denial, on any points of fact; some of these therefore take the form of deduction or surmise, though to the best of the author's knowledge and belief the account given here is reasonably accurate for comparative purposes. *Opinions* expressed are, of course, entirely personal, and none should be taken as representing the views of the *Centraal Planbureau*, the Netherlands Government, the Treasury, the Economic Section, its members or Her (Britannic) Majesty's Government.

The Methods of Work

In many matters the methods of Dutch and British government economists are much the same—the methods used by economists the world over. One studies the available qualitative information; one turns a sharp eye upon the available statistics of present situation and past trends; one searches for supplementary data; one performs a few simple computations; then, making liberal use of one's pre-conceived ideas, one writes one's opinion in a few well-chosen words, illustrated by one or two simple, well-chosen tables. More elaborate computations will be

[1] The author is extremely grateful to the Director and many individual members of the staff of the *Bureau* for giving him a great deal of their time, for providing material facilities and for general encouragement. He is also grateful to the Governing Body of King's College, Cambridge, for financial assistance in meeting research expenses.

[2] The only available published source is the article, "The Recent Uses of Social Accounting in the United Kingdom," by E. F. Jackson, printed in *Income and Wealth, Series I* (Cambridge, 1951), to which extensive reference is made below. The article is, however, an unhappy source for the investigator to rely upon because: (i) it was apparently written during the summer of 1949, and is therefore almost certainly considerably out of date; and (ii) it is prefaced by a footnote reading ". . . although I am an official, nothing in this paper must be taken as expressing the views of the Central Statistical Office or any other part of H.M. Government," a statement whose poignancy is enhanced when it is appreciated that the Central Statistical Office is entirely independent of the Economic Section.

relegated to an appendix, because, however important, they are unsuitable *pabulum* for one's seniors. In more technical language, these methods may be described as a mixture of qualitative and quantitative analysis, such as involves only the more elementary theoretical concepts and the most elementary statistical methods —inspection, simple derived statistics, index numbers and other weighted averages, national income arithmetic. These methods are used in the *Centraal Planbureau* of the Netherlands Government in any appropriate work, in particular work concerning monetary policy, the problems of particular industries and work concerning economic developments in foreign countries. The difference between the Hague and Whitehall is that whereas in Whitehall these are, as far as is known, the only methods allowed, in the Hague there is a consistent attempt to exploit in addition the "econometric" or statistically "advanced" methods of modern applied economics.

Simple econometric methods are widely employed by Professor Tinbergen's staff, not only in basic research but also as aids to the analysis of current problems of policy. The latter are subjected to the discipline of a general-equilibrium macro-economic decision model, expressed in algebra, and based on the assumption of a reasonable stability in the behaviouristic and structural relationships between the variables identified in it, albeit with liberal allowances for specific disturbances. Time-series analysis, family budget analysis, input–output analysis and the like are employed both in basic research into the values of parameters in the model and also to help with guesses of the future movement of its exogenous variables.

This major difference in the methods used in Holland and Britain not only appears to exist at the time of writing but also was certainly present throughout the period when a considerable amount of detailed economic planning or "programming" was still occurring in the United Kingdom, particularly in the field of balance-of-payments control. Somewhat surprisingly, in Holland, the classic methods of the *Planbureau* were not applied to the operation of import controls, and quantitative controls generally seem to have played a rather less dominant rôle in balance-of-payments policy than they have in this country. The *Planbureau* is mainly concerned with the total amount of the overall balance of payments; something they consider as (partly) endogenous to their general model of the economic system, something to be attacked with general, rather than specific, weapons of policy. In the United Kingdom, short-term control of the balance of pay-

ments seems to be an operation conducted rather independently of other economic policy operations, although it is evident from public statements that the connection in principle between internal and external equilibrium is very well appreciated. Holland's very large foreign trade multiplier, small share in world trade and heavy concentration on trade with Europe—as against the structural, geographical, bilateral and " monetary " [1] character of the external difficulties of this country—must provide much (but not all) of the explanation.

Nevertheless, it is extremely interesting to compare in more detail the *Planbureau's* methods for constructing balance-of-payments projections with the type of procedure which appears to correspond to typical British practice. Periodically, the governments of both countries, whether they liked it or not, have been forced to take a fairly definite quantitative view as to what would happen to the balance of payments if existing policies and economic trends remained unchanged, and have had to call for estimates of the quantitative effects of possible corrective policies. And for both governments there were major elements in the situation—foreign demand and supply conditions—which were entirely beyond their control, and thus self-evidently exogenous variables in any form of decision model; but, as will be seen, the methods used for estimating even these variables were very different in the two countries.

In Holland, next year's export demand is assumed to depend on Dutch export prices, a specially constructed and weighted index of competing prices (short-term elasticity assumed is usually the Tinbergen Two), incomes in Dutch overseas markets (income-elasticity just over unity) [2] and special factors. Dutch export prices are assumed partly to follow world prices for similar products and partly costs in the export industries (which come from

[1] " Monetary " is intended as a short-hand reference to the United Kingdom's difficulties in controlling its external capital account.

[2] This is a weighted average of individual commodity and market elasticities, as follows :

$$\bar{y} = \sum_j w_j \sum_i e_{ij}\, y_{ij}$$

where $\bar{y}$ is the aggregate export income-elasticity; y_{ij} is the income-elasticity of the ith commodity in the jth market; e_{ij} is the proportion of Dutch exports of the ith commodity to the jth market in total Dutch exports to that market, in some base year; w_j is the proportion, in some base year, of total Dutch exports to the jth market, in total Dutch exports to all markets.

The y_{ij}'s are estimated from family budget data, or any other information available, relating to country j.

$\bar{y}$ is fed into the model as a constant : errors due to changes in the distribution of the w's and e's are, rightly or wrongly, assumed unimportant, because $\bar{y}$ is applied only to changes.

the model as the cumulative consequence of changes in labour costs, import prices, etc.). The competitive price index has been found to show a good lagged correlation with world prices. Foreign incomes are forecast piecemeal from whatever qualitative and quantitative information is available about each country, and depend imprecisely on the *Bureau's* view of cyclical tendencies in the United States. The volume of next year's imports is entirely given by the model, but import prices, of course, must be forecast independently : the Dutch are fortunate compared with their British colleagues in that they can reasonably regard their importers as facing conditions of infinitely elastic supply. The Netherlands raw materials import price index has been found to possess a mysteriously reliable lagged correlation with the Reuters' Economic Service index of London prices of internationally traded raw materials, and this can be heavily exploited because raw materials form a very high proportion of total Dutch imports. Thus apart from invisibles, which are largely forecast by the same methods as in the United Kingdom—projection of trends, use of special knowledge, etc., item by item—the forecast change in the overall balance of payments is completely determined by the various assumptions determining internal developments, together with two major judgments about the external world—the change in real incomes abroad and the change in world prices. Any change in either group of assumptions changes quite explicitly the balance-of-payments forecast.

In the United Kingdom the volume of exports next year is projected as a single quantitative guess, taking some rough general account of all the factors, both on the demand side and the supply side, considered relevant. One of these, probably not the most important in the minds of those responsible, presumably is price, but the concept of the elasticity of demand is not certainly and consciously brought into play. At one time United Kingdom export forecasts were based on more detailed market research, country by country or commodity by commodity; here again the individual studies were largely concerned with qualitative factors, though each led up to a single quantitative estimate.[1]

The value and volume of imports into the United Kingdom is the assumed result partly of an administrative programme governing the issue of import licences and partly of internal demand for " liberalised " goods. The administrative programme is made to conform with whatever it is government policy to

[1] The Board of Trade, not the Treasury, has primary responsibility for export forecasts.

" afford " in the light of the total estimate of foreign earnings.[1] Bids for commodities are submitted to an interdepartmental committee (on which the central economists are usually represented), scrutinised for general economic reasonableness, added up and then if necessary " cut " after reference to Ministers to decide the cases thought to involve thorny politico-economic consequences. It is not known how the estimate for the liberalised sector is made, but given the types of commodities involved and the prevailing methodological tone, it seems unlikely that any use is made of a specific income-elasticity or set of elasticities.

The above description does not provide any evidence, either way, as to whether the Dutch methods are more likely to be successful in forecasting what actually happens to the balance of payments : in the present state of knowledge there exists no conclusive demonstration of the general superiority of econometrics over intuition and extrapolative guesswork.[2] But the

[1] See Jackson, *op. cit.*, p. 155.

[2] Professor H. Theil, of the *Bureau*, contributed an article on this subject to *De Economist* entitled " Whose forecasts are best ? ", February 1954. He compared the published, Economic Survey type of official forecast with actual results in the United Kingdom, the Netherlands, Denmark, Norway and Sweden by means of an index which reaches infinity for a set of perfect forecasts, and tends to zero for extremly bad forecasts. The precise definition is

$$\text{Index of quality of forecast} = 1/V$$

where $V = \sqrt{\frac{\overline{\sigma_v^2}}{\sigma_r^2}}$

$$\sigma_v^2 = \frac{1}{n}\sum_{t=1}^{n}(v_t - r_t)^2. \quad (v_t = \text{forecast of variable for year } t)$$

and $$\sigma_r^2 = \frac{1}{n}\sum_{t=1}^{n}(r_t - r_{t-1})^2 \quad (r_t = \text{result})$$

The *rationale* of this is that it compares the second moment of errors in forecast changes with the second moment of actual changes. If one were forecasting an index number which consistently changed, in one direction or the other, by 5 points each year and one was always correct as to direction but always underestimated (or over-estimated) the degree of fluctuation by 3 points, 2 points or 1 point, the corresponding values of $1/V$ would be 1·7, 2·5 and 5·0. Thus anything under 2 is pretty hopeless, anything over 3 not at all bad.

The British and Dutch forecasts come out generally substantially better than the Scandinavian. Professor Theil has kindly provided me with some adjusted results which permit a direct comparison between the United Kingdom and Holland for the whole period 1948–52. Here is the tally :

$1/V$, 1948–53

	United Kingdom.*	Netherlands.†
Value of Exports	3·3	3·8
Value of Imports	3·8	1·3
Invisibles	1·1	1·0
Export Prices	no forecast	2·7
Import Prices	no forecast	5·2

* Economic Surveys. † Annual Plans.

Dutch system is probably more effective in exposing, insistently and systematically, the essential interdependence of internal and external factors. Also, in the author's view, it derives from a superior methodological philosophy; that it is better to frame estimates on the basis of general factors in the first place and then take account of special factors secondarily, rather than to compute the final result as the sum-total of a set of imprecisely stated special factors behind which the general assumptions, if any, lie obscured.

That philosophy runs right through the *Planbureau's* model, the whole of which need not be described in detail here. Reference may be made to publications of the director and staff of the *Bureau*.[1] Readers should be warned : (1) that the system in use is substantially simpler and generally less *recherché* than the kind of thing described in the published descriptions, and (2) that those descriptions are made unnecessarily difficult by frequent failure to explain sufficiently explicitly the basic economic theory (especially of price formation) which lies behind the equation.

The model is, of course, frequently changed, both in structure and in detail, in the light of circumstances and according to the current predilictions of those responsible. But it always consists of a set of linear equations relating one-year changes in a substantial number of selected macro-economic variables. It is always " Keynesian "; always, so far, static. Disturbances, including disturbances to parameters, thought to be caused b factors special to the year in question are dealt with by th insertion of separate autonomous terms in the equations : par meters are adjusted only when they are believed to be undergoir some permanent change. These autonomous corrections are th vehicle for the injection of common sense and qualitative judg ment : they are subjected to frequent adjustment, both deduce and induced, so that the system is not slavishly followed when offers silly results.

An example of a typical equation in the model is :

$$\Delta \text{ Imports} = \mu_1 \Delta \text{ Consumption} + \mu_2 \Delta \text{ Investment} + \mu_3 \Delta \text{ Expor} + M \text{ (all at year O prices).}$$

where the Δs are increases from this year (year O) to next yea the μs the " normal " marginal import contents of consumptio

[1] Tinbergen, *Econometrics* (Blakiston Co., Philadelphia, 1951), Chapter 7. Tinbergen, *On the Theory of Economic Policy* (North-Holland Publishing C Amsterdam, 1952).

Sandee and Schouten, " A Combination of a Macro-Economic Model and Détailed Input–Output System," *Input–Output Relations* (Netherlands Econon Institute), p. 196.

investment and exports, respectively, estimated from time-series. M is the sum of corrections for special factors.

The most complicated model tried so far was that used in the initial stages of constructing the 1954 Plan (it was subsequently simplified for publication). This contained about 20 basic equations and involved 65 symbols. Of the latter (in round figures) 20 were parameters (marginal coefficients or constant trends); 5 represented variables which are exogenous both to the model and to the economy, being quite beyond the reach of Dutch economic policy, and hence requiring to be forecast independently; 20 represented variables exogenous to the model but endogenous to the Dutch economy and capable (in principle) of being influenced to some extent by government policy. That left room for 20 variables fully endogenous to the model, *i.e.*, 20 determinable " unknowns," such as employment, production, personal consumption and the balance of payments. These variables are of the type which can only be influenced by government policy *via* operations on the previous group : given specific policy *desiderata* —quantitative " targets "—for any number, x, of them, only $20-x$ of the exogenous variables in the previous group are still free to vary; the remainder must be manipulated by policy if the targets are to be hit. In other words, x of the unknowns have become " knowns " (targets), hence, for the number of unknowns to remain equal to the number of knowns, some of the items initially assumed known must change their spots.

Of the initial division between exogenous and endogenous variables it is worth picking out the following, some of which have been indicated already : *endogenous*—tax receipts, labour productivity,[1] entrepreneurial saving on both personal and business account (the two together taken as a single function of total entrepreneurial income), employment and (partly) the general levels of the prices of consumption, investment, exports and government expenditure; *exogenous*—wage-rates, wage-earners' savings and the volume of investment, the last two mainly because no reliable functional relations with the wage bill and corporate income respectively have so far been found.

A large proportion of the 20 equations merely represent

[1] Productivity is assumed to vary directly with output, and output to depend on effective demand. Each 1% rise in output yields 0·525 of a 1% rise in productivity, an empirical relationship which has worked in the period 1948–52. The *Bureau* recognises, however, that this simple relationship may represent the compounding of an underlying trend with a much lower (or negative) short-period elasticity (of productivity on output). In which case it would break down in a period of stagnant effective demand.

national accounting identities, or conversions of quanta into current prices. Several could be eliminated by substitution, but are more convenient given separately. Basically the system is much simpler than superficially it appears.

Given any set of assumed values for the knowns, with their consequent values for the unknowns, the Dutch model can easily be, and is, translated for presentational purposes into a set of numerical projections of the national accounts, in a form quite familiar in this country. Indeed, the tabular details and refinements involved are in some features probably less complicated than in the projections provided to the government as a basis for the Economic Survey and for the consideration of short-run macro-economic problems generally. The difference between the systems of Whitehall and the Hague is less of form than of method.

The British, inserting appropriate determining assumptions at each stage, build up, step by step, numerical projections of next year's income and expenditure accounts (both current and capital) of enterprises, the government and households;[1] in recent years there has evidently been some further subdivision of the sectors in order to help analyse the balance of supply and demand in certain individual branches of industry very broadly defined (such as " all metal-using industries "). From these tables, and from the determining assumptions about wages, prices, productivity, tax rates, government expenditure, investment, etc., the important dependent volumes—total production, personal consumption, etc. —can be derived by simple arithmetic. The tables are brought into internal consistency by constant adjustment and re-adjustment of the assumptions: the method is that of Trial and Error.

At the outset, it appears, there is set up a broad general assumption about the directional tendency of effective demand and prices; this choice determines the *path* of the subsequent operations. Thus, if the *conjuncture* were thought to be expansionary, involving certainly full employment and probably rising prices, a sequence of trial assumptions thereafter would be chosen which is appropriate to the characteristic conditions and problems of an economy in full employment whose government is trying to prevent inflation. Production rises according to trend, employment according to the natural increase in working population, hence the volume of production is determined. Wage-rates rise from trade-union pressure, prices probably a little more than wage-rates.

The balance of payments must, by rule, be assumed to accord

[1] See Jackson, *op. cit.*, p. 156.

with its programme (see above).[1] Then the magnitudes determined to this point are sufficient to determine national income and resources available for consumption or investment at home. Profits, also, are determined. Hence, with a guess about the proportion which will be distributed, the major items in the account of enterprises can be written down. With an eye to these accounts and to existing administrative and technical plans, investment (government and private) can now be forecast. Government consumption is taken as given. Personal consumption emerges as a residual. Given the transfers (estimated by trend projection, etc.), the wage-bill and the accounts of enterprises, the accounts of households could be constructed, their tax liabilities (as also those of enterprises) being taken as a specific function of income, and the gap between liabilities and payments estimated administratively. There is now only one figure for private savings by households (" personal savings ") which will allow the tables to balance. If this figure seems improbably high, the Government is advised to try to reduce government consumption, tighten the screw on government-controlled investment or cause a reduction in disposable income by means of an increase in taxes. There is no second round; no explicit recognition, for example, of the likelihood, expressed in the Dutch model by a definite functional relationship, that a reduction in income will in turn reduce the " plausible " level of *ex-ante* savings (one good reason for this being the near-impossibility of deriving any plausible consumption function from post-war British time series).

If, at the outset, deflationary tendencies are suspected, employment must be taken as dependent on effective demand rather than demographic factors; it is therefore necessary to choose an initial arbitrary value for effective demand (and hence production) to be adjusted later as necessary. Appropriately non-inflationary assumptions would then be made about wages and prices; output per man-year would be assumed to rise less than trend, or even fall, because of the sag in production. The procedure followed thereafter is then similar to the first, except at the final stage of interpretation for policy.

In principle there appears little difficulty in bringing the Dutch and British systems together. The British operating procedure could undoubtedly be expressed as a system of equations. Although, at present, most of these would be no more than identities—the only explicit functional relationship is that of tax liabilities with income—some of what appear to be working

[1] See also Jackson, *op. cit.*, p. 156.

rules concerning the relations between changes in prices, wages, productivity and production imply belief in certain linearities which could easily be expressed in mathematical language; the discontinuities would be handled by the technique of applying boundary conditions.[1] Similarly, the Dutch model, which in the form described above is not applicable to a potentially inflationary situation, can easily be made so by the application of a boundary condition to employment.

Despite this similarity of principle, the existing differences of practice are most important. True, the British model would need very little formal alteration to make it symmetrical to the problems of inflation and deflation, and could be used, as is the Dutch, to help decide *whether* there is danger of (*e.g.*) too much deflation. But in practice—because of the enormous scope for the exercise of subjective judgment during the process of adjusting the assumptions—there is all the difference in the world between that procedure and the present British one of deciding in advance, on the basis of broad intuitive judgment, what is the direction the *conjuncture is taking, and then using the " model " mainly as a* vehicle for expressing that judgment in detailed quantitative terms. The British, with some justification, do not believe that econometric models of present-day vintage are much good at foretelling the *direction* of cyclical tendencies, although they may help, once the direction is established, to assess their extent. This philosophy, in my view, would make the British technique *methodologically superior* to the Dutch, if the latter were used over-mechanically: on the whole, however, it is not.

In a general comparison of the advantages and disadvantages of the Dutch " algebraical," *versus* the British " arithmetical," methods, one may list the following clear advantages for the Dutch:

(i) It is more systematic, intellectually tidier.

(ii) There is less danger of ignoring important but roundabout or otherwise unobvious, consequences of policy decisions or sets of decisions.

(iii) It is less cumbersome, more " streamlined," and hence much quicker to manipulate. With the British methods it must take anything from five minutes to five days of work by quite senior officials to follow out the effects of changed assumptions. The Dutch system needs to be inverted only from time to time, *i.e.*, when a fundamental coefficient is

[1] See Tinbergen, *On the Theory of Economic Policy* (already cited), Chapter IV.

adjusted or the structure of the model modified. This inversion requires several days work from the staff of a computing pool, but thereafter there is available a standard tabular matrix from which the effect on all the other variables of any set of changes in determining variables can be read off at a glance. The importance of speed can hardly be exaggerated. In modern administrative politics, it is the quickest answer to a question which is most likely to be accepted. Also, if one is faced with onerous labour every time an assumption is changed, one is likely to put up a dangerous irrational defence of the *status quo*.

(iv) Partly because of (iii) and partly from its general structure the Dutch model is peculiarly well adapted to the presenting of policy problems in the form of a series of alternative possibilities. There is nothing in principle to prevent this form of presentation under the British system, but it would be relatively more cumbersome and, as far as one can tell from Economic Surveys and other indications, is not often done.

Against the above, the following are the advantages of the British methods:

(i) In some senses greater flexibility: greater adaptability (no more labour is involved in changing the structure of the model than in changing major assumptions) and greater scope for the insertion of non-linearities and discontinuities.[1]

(ii) Less danger of its operators becoming wedded to belief in the stability of relationships (parameters) which are not in fact stable.

Any overall judgment as to which methods are " best " is bound to be heavily influenced by subjective predilections: the present writer must declare a personal bias in favour of the Dutch. It may be argued that the Dutch system is particularly vulnerable to the danger that some members of its operating team may fail to apply adequate common sense: they may become so fascinated by the mathematical manipulations that they forget reality. But the British system also has its dangers; for example, the failure, already mentioned, to underline sufficiently explicitly the relation

[1] Clearly, most of such cases can be linearised, or dealt with by boundary conditions (see, for example, the supply price equation, number 3 in the table on p. 19 in *The Theory of Policy*), but the process becomes cumbersome. On the other hand, in many of these cases the higher terms of the Taylor's expansion turn out to be of much less quantitative importance than is sometimes supposed.

between savings and taxation. Alternatively, it may be said that, since the Dutch method cannot be proved to have been overwhelmingly more successful at economic forecasting,[1] the extra intellectual discipline involved is hardly worth while. But the question of forecasting has become something of a red-herring in public discussion of this subject. The basic function of this branch of the work of government economists—in the Hague, Whitehall, Oslo or anywhere—is the systematic presentation of policy alternatives; the analysis of the consequences of particular decisions, sets of decisions or, equally important, failures to decide; the imposition of the inescapable logic of national income identities. Governments, so long as they pursue any general economic policy whatsoever, face their advisers with two, almost separate, technical tasks: first, the forecasting of variables beyond government influence, and second, quantitative analysis of the multiple, interdependent, consequences of the policies under consideration. Forecasting may be given up as hopeless—we may decide mostly to wait and see, then act[2]—but the second task still remains. For that purpose the Dutch methods do seem clearly better.

The most powerful attack is one which falls on the British and Dutch methods together: the attack which comes from those who believe that all attempts to develop a successful general theory of economic policy are doomed to failure; that economic advisers should confine themselves to limited, relatively simple, micro-economic questions where there is some chance of providing answers of true scientific accuracy; that they may suggest small structural improvements in the economy, perhaps occasionally venturing so far as to make proposals for the improvement of a single industry, or interference with one particular price-relationship, but never further. This view is perfectly tenable, and in some quarters increasingly popular. But it implies that governments should abandon all attempts at general economic policy, or alternatively that if they do not, they will manage better without professional advisers than with them. It also involves a proposition which is itself both general and in essence unprovable; that a largely *laissez-faire* general equilibrium is in some way " better " than any calculable equilibrium resulting from policy.

[1] But see note 2 on p. 766 above.

[2] All economic policy involves *some* assumption about the future. What this plan really means is always assuming that things will stay exactly as they are. This form of assumption has very little rational basis, since it rarely corresponds to anybody's best guess. For example, few people, if compelled on pain of death to bet half their income on next year's change in production, would put their money on " no change," except in very particular circumstances.

The Scope and Organisation of the Work

The *Centraal Planbureau* is formally part of the Dutch Ministry of Economic Affairs; its British opposite number, having been lodged in the Cabinet Offices for the first eight years of its post-war life, has recently been taken into the Treasury. But the *Bureau* has always been housed in a separate building, some distance from the administrative centre of the Hague, and has always possessed complete policy independence from the Ministry of Economic Affairs, whose Minister is quite content to regard Professor Tinbergen as economic adviser to the government as a whole. While the *Bureau's* attachment to a senior Ministry thus represents little more than an administrative formality, the Economic Section both geographically and metaphorically, has worked very close to, if not always closely with, the Treasury and the Chancellor for some time past. This difference is of substantive significance: in the United Kingdom central responsibility for economic policy at the official level now lies fairly and squarely with the Treasury as a whole, and the Economic Section is only one of several bodies serving the Treasury for that purpose. In Holland, responsibility is more divided: the United Kingdom has in fact probably progressed further in overcoming the constitutional difficulties of centralisation[1] than almost any other country in Western Europe. Hence in Holland greater reliance has to be placed on "co-ordination," and the *Centraal Planbureau* is the official co-ordinating body at the advisory level (although of course there exists other co-ordinating machinery at the decision-taking level).

Professor Tinbergen's position as head of the *Bureau* is designated "Director," and the same appellation is given to Sir Robert Hall at the head of the Section. Both of these are special appointments in which the holders' position in the official hierarchy is not precisely defined, although it appears from the *Imperial Calendar* and other indications that Sir Robert Hall is formally significantly better placed in the official hierarchy than is Professor Tinbergen in the Dutch. However, Professor Tinbergen's personal standing in Dutch political and official life is such that this fact is probably of no great importance, although clearly it might become so if for any reason he were to leave. As is always the case, the difference between the character of the two organisations must be more than a little due to differences in the personal views and

[1] See p. 760, sub-paragraph 3 above.

interests of the two Directors,[1] a matter which cannot easily be discussed in print. Suffice it to say that it is not a coincidence that Professor Tinbergen is one of the world's leading econometricians and the *Bureau* he directs has a distinct econometric twist.

The Director of the *Bureau* is served by two deputy directors, a senior adviser on social problems and an adviser on statistical problems. The latter two are both employed full time, but they operate in free-lance fashion without direct organisational responsibility for any large group of staff. The main body of the *Bureau's* staff consists of twenty-five trained economists or economic statisticians about equivalent in rank to a Whitehall Principal, another eight to ten people about equivalent to Assistant Principals or Executive Officers and fifteen to twenty statistical officers and statistical assistants of various ranks: in the total of this professional staff, including Professor Tinbergen, five are part-time university teachers. In addition, there is a fully fledged computing pool, of five persons, trained to be able to undertake (*e.g.*) the inversion of the economic policy matrix[2] inside about three days. The whole body is divided into three divisions, each headed by a division chief carrying a civil service rank equivalent in British parlance to something between an Assistant Secretary and an Under-Secretary.

By contrast, the Economic Section has an establishment for one Deputy-Director (at present Mr I. M. D. Little), two Senior Economic Advisers (Assistant Secretaries), about six to eight Economic Advisers (Principals) and two or three juniors: there are no professional statisticians and there is no computing pool, but the Section may be assumed to have access to the computing staff of the Central Statistical Office which is in the same building. Thus the Economic Section is constructed on a much smaller scale than the *Bureau*—a difference more significant when it is remembered that not only is the real national income of the United

[1] The following selection of publications illustrates this point:

Sir Robert Hall: *Earning and Spending*, 1934; *The Economic System in a Socialist State*, 1936; and a number of articles, of which the best known is "Price Theory and Business Behaviour" (with C. J. Hitch), *Oxford Economic Papers No. 2*, the famous article which among other things established the kinked demand curve.

Professor Tinbergen: *Statistical Testing of Business Cycle Theories*, League of Nations, Geneva, 1939; *International Economic Co-operation*, Elsevier, 1945; *The Dynamics of Business Cycles* (with J. J. Polak), London, 1950; *Business Cycles in the United Kingdom, 1870–1914*, Amsterdam, 1951; *Econometrics* (text-book), Philadelphia, 1951; *On the Theory of Economic Policy*, Amsterdam, 1952; plus numerous articles on econometrics and other topics in applied economics.

[2] See p. 771, sub-paragraph (iii) above.

Kingdom of the order of ten times the Dutch but also that the scale of government operations in relation to national income is considerably higher in the United Kingdom. Holland probably has as high a proportion of economists to other officials as any country in the world; on the other hand, among "advanced" countries, where a good supply of trained economists exists, the United Kingdom must have one of the lowest. In Holland, quite apart from the *Bureau*, there are important economic staffs in several other economic ministries, whereas in the United Kingdom the number of official economists outside the Treasury could probably be counted on the fingers of one hand.

A description of the three internal divisions of the *Centraal Planbureau* will serve also to describe the substantive differences in the scope and nature of its work compared with that of the Section. One division is built round, although by no means exclusively concerned with, the operation of the econometric model already described. In it there are subsections devoted, as it were, to each basic group of equations. One such, for example, contains specialists in the field of wages and prices. These officials have operational responsibility for the measurement of parameters and the observation of variates, as well as for persistent attempts to improve the equation structure in this field. At the same time they will help in more general matters, such as the preparation of briefs for Ministers about wages policy or price control. Another subsection is concerned with the supply equations, and thus with the factors determining productivity. Another is concerned with final demand: consumption and investment totals and patterns. Another with the balance-of-payments and to some extent short-term export forecasts. Finally, there is a large and important section concerned with the equations relating to government operations, both on the side of revenue and of expenditure. This section contains, *inter alios*, two research assistants specialising in forecasts of revenue and transfer payments. It also takes responsibility for the *Bureau's* views on fiscal policy and monetary policy generally. In addition to these subsections, the Division employs one fairly senior officer and a small staff to take general care of the model: central co-ordination of its actual operation and improvement in its overall structure. The relations between this unit and the rest of the division are not rigidly defined and, as in all bureaucratic organisations, the lines of demarcation are constantly being blurred in response to the requirements of particular problems and the abilities and personalities of particular individuals. On the whole, however, there is in the *Planbureau*

more conscious organisational structure based directly on theoretical economic considerations than in most other similar offices, and certainly more than in the Economic Section.

The second division of the *Bureau* is built up of specialists in the economic and technical problems of individual branches of industry, and in various general "industrial" or technical-economic questions (for example, emigration, flood control policy, transport co-ordination). This division is also possessed of a small but important general section which, *inter alia*, runs an input–output model in collaboration with the Central Bureau of Statistics. The principle of industrial specialisation is self-evidently a good one. But there are a number of psychological and organisational difficulties which seem bound to arise in any attempt to apply this principle; these the *Bureau* has certainly encountered and does not pretend to have resolved. One suspects the failure may have occurred partly because the difficulties were at first thought to be accidental, whereas in fact they are inherent: inevitably there must be difficulties in achieving the proper intimacy of interaction with the other divisions and inevitably a psychological tendency for the industrial specialists to feel that their work is regarded as inferior and less "glamorous" than that of those engaged on the "horizontal" economic questions. It may well be that the time is ripe for an experiment in dual organisation: a single division in which all of the staff were fully qualified to take, and did take, responsibility for particular horizontal questions—in the Dutch case particular macro-economic equations—while at the same time each would also be required to carry out the work of specialist in some one or other branch of industry.

The third and final division of the *Bureau* is concerned, *inter alia*, with research into long-term economic problems of the Dutch economy and also with research into the long- and medium-term development prospects of foreign countries which are important Dutch trading partners. This division is working on a long-term development model of a fairly refined type, and because it is therefore equipped more in the manner of an economic research organisation, it also takes on a certain amount of the research involved in revising the basic parameters of the short-term model, such as, for example, the calculation of income-elasticities described in footnote 2 on p. 764. The main feature of the work is that it is essentially not concerned with day-to-day questions: the division's job is to undertake the sort of research which may take months or even years to complete.

The existence of a division specialising in long-term research provides one of the most important contrasts with the arrangements current in the United Kingdom. Here, there is no administrative provision for such work, and little or no economic research in fact occurs within the government machine. Further, there has up to now been little deliberate farming out of this kind of economic research by the Government to Universities and other outside research organisations. In the United Kingdom, if an aspect of economic policy requires for its rational implementation that some substantial piece of economic research be carried out, the normal procedure, by and large, is to drop the policy or to implement it irrationally. This state of affairs almost certainly arises from the traditional British administrative impatience with anything which is not of obvious urgent practical usefulness; in the social sciences, particularly, good men and good money cannot be spared for back-room work. At the other extreme the Netherlands *Planbureau* and also the Netherlands Central Statistical Bureau are accustomed to undertaking much research on their own initiative, and often, it appears, solely for the sake of the intrinsic interest of the research itself. Many of the results are published, and the *Bureau* seems at times to be carrying out national functions similar to those of a semi-academic research institution: it is often consulted by outside bodies, for example. British officials, at the other extreme, are strongly discouraged and frequently prohibited from publishing anything which could be identified by readers as directly connected with official work, except in the purely statistical field.

We now come to describe the internal organisation of the Economic Section, and a question which immediately arises is to what extent the other elements in the Treasury—Central Economic Planning Staff and Overseas Finance—should be brought within the purview. The Central Economic Planning Staff is, in effect, a central secretariat mainly concerned with the administrative co-ordination of departmental economic policies. In the United Kingdom, despite the now fundamental central responsibility of the Treasury for economic policy as a whole (see pp. 760 and 774 above), the greater part of the responsibility for specific aspects of policy, especially for initiation, remains, of course, basically decentralised. At the present stage of constitutional development, this is inevitable: the Minister of Food, for example, has to answer to Parliament for food supplies, although the Treasury wields great influence over the amount of foreign exchange he has with which to buy them. In order to achieve co-ordination

and, as far as possible, consistency in the policies initiated by the departments, there exists an elaborate network of interdepartmental committees, and it is these which form the main vehicle of British economic planning. In order to strengthen that system most of the chairmen and secretaries of the committees are now drawn from this specialised branch of the Treasury, the C.E.P.S., which mainly exists for that purpose—an ingenious administrative device which has no counterpart in Holland, although the staff of the *Planbureau* play an important rôle in the work of a number of economic committees. Attendance at committees to present the view of the Section may be taken also to be a major function of the staff of the Economic Section. The C.E.P.S., however, does not apparently, at the time of writing, any longer contain any economists, and therefore need not be further considered.

The Overseas Finance Division of the Treasury is another matter. In the field of balance-of-payments control, British post-war economic planning has been carried on at an entirely different level of intensity from that in any other field. Ever since the end of the war, the complicated machinery of exchange control and import licensing has been constantly in use as part of a continuous attempt to implement a conscious operational programme for controlling the balance of external payments in general, and the dollar balance in particular, while at the same time inhibiting as little as possible the development of the internal economy. The direct controls, though largely of the negative type, have been powerful, far-reaching and detailed.[1] Policy direction of the whole of this apparatus of planning and control was centred in the Overseas Finance Division of the Treasury, with the Bank of England and the Import Licensing branch of the Board of Trade as executive arms. The Division contained a substantial statistical section, responsible for the collation of all statistics relating to the balance of payments, both those published in the Balance of Payments White Papers and those kept for internal circulation only, and it had a large group of administrative officers organised into geographical sections, each of which was responsible for all policy relating to the United Kingdom balance of payments with particular overseas countries or groups of countries—exchange control, international lending, payments agreements and so on. In addition to these specific responsibilities, Overseas Finance was thought of as the Cabinet's primary

[1] That some would say that the controls do not appear to have been powerful enough, nor the planning show a conspicuous record of success, is not a comment which is directly relevant to our present enquiry.

adviser on all general policy in this field, for example on convertibility, on relations to the I.M.F. or the E.P.U. and so on. (The Board of Trade was responsible for external *commercial* policy, the general encouragement of exports and so on.) The division at its peak contained some thirty to forty officials of the rank of Assistant Principal and above, including two or three economists.

The existence of so large and powerful a body, responsible for both general and detailed policy in the most important economic policy field, must inevitably have exerted a profound influence on the rôle and organisation of the Economic Section, and for that matter of the Planning Staff. There was something of a similar division of responsibilities in Holland, but because exchange-control and import programming have always been more rudimentary in that country and the balance of payments there regarded more exclusively as an aspect of the problem of general equilibrium, the effect on the rôle of the *Bureau* in overall policy-making was almost certainly smaller. The general question raised here is important. It is widely believed that if some aspect of economic policy requires a substantial degree of detailed administration for its implementation, from the very nature of the case professional administrators must play the major " entrepreneurial " rôle in the determination of policy over the whole of the relevant field : the professional economic advisers may suggest and criticise, and thereby exert considerable influence, but always as it were from the sidelines. The advantages of this arrangement are obvious; the disadvantages unfortunately less so. For whereas an administrative break-down, due to an attempt to apply an over-academic prescription, is there for all to see, the aggregate loss caused by a multitude of administrative decisions based on amateur economic reasoning is never measurable and rarely noticed. It might be suggested that " administration " should be regarded as a technique which the professional economist in government service must undertake to learn as an essential " secondary ability " in the same way in which he must learn, say, statistical method. On that showing there could be little apparent case for not putting economic policy, at the official level, entirely in the hands of the economists. But that is not a way of looking at things which is likely to gain early acceptance in this country.

By contrast with the *Planbureau* the internal organisation of the Economic Section appears to be relatively loose, an arrangement which might be expected in the light of what has already been said about the Section's size, rôle and methods. Specialisation has almost certainly occurred, but probably in consequence of individuals' personal interests and aptitudes, rather than of any abstract concept of organisational structure. Given the general nature of its work and responsibilities, such a form of organisation seems best designed to extract the maximum from the total potential of the Section's small and extremely able staff. Clearly, however, it would no longer do so well if at any time the work were to become more " operational " in character, or if methods such as those of the *Bureau* were to be adopted.

The Influence of the Work

We have seen that, from the point of view of the economist, the scope of the work of the *Bureau* is considerably wider than that of the Section. We have not seen, so far, any evidence that from the point of view of the political scientist, the *Bureau* has wielded any greater influence at the keystone points in the formation of economic policy. Indeed, organisationally the Section is much more closely integrated into the rest of the government machine than is the *Bureau* : the Section is " in " the Treasury. That difference is partly inevitable : legislation enacted by the Dutch Parliament in 1947 defined the *Bureau's* independent function and at the same time charged the *Bureau* with the preparation of an annual economic " Plan " (we British would call it a Survey).[1] The plan is submitted to the Government and, eventually, to the Parliament, but the Plan does not commit the Government; it is more in the nature of a statement of policy by the *Bureau* than by the Government, an arrangement unthinkable in the United Kingdom.

A major point in any final assessment is the delicate question of the relative personal influence of the two Directors. Sir Robert Hall has clearly great influence in Whitehall, just how much no ordinary member of the public can ever know. It is, however, known that he believes strongly in trying to see problems from the administrator's point of view, in contrast with the extremer faults of outlook which many administrators complain are often associated with academic economists. The position of Professor Tinbergen is different, and in a way unique. He

[1] Although it is dangerous in this context to draw any parallels between Western Europe and the United States—because of the radical differences in the underlying constitutional rôles of Legislature and Executive in the two cases—the legal position of the *Bureau* does seem to have considerable affinity with that of the Federal Government's *Council of Economic Advisers* under the terms of the Federal Employment Act, 1946. See *Congress Makes a Law*, by S. K. Bailey, New York, 1950, and *Economics in the Public Service*, by Edwin G. Nourse, New York, 1953.

attends the weekly meetings of the Dutch Cabinet's economic committee, he is Vice-Chairman of the Council of the Netherlands Bank and he is, in general, a well-known public figure. To a considerable extent the *Centraal Planbureau* wields its influence through Tinbergen : while he relies heavily on the work done by his staff in making up his mind about economic affairs, and takes a close personal interest in all stages of the research, the staff rely on him to sell the results of their combined cogitations to the Cabinet. In the Economic Section the staff are probably more independent of their Director; in the nature of normal Whitehall arrangements they would be expected to operate at all levels in the hierarchy, engaging in direct argument with their official opposite numbers in the Treasury or in other departments. That is not to say that members of the *Bureau* are completely cut off from direct contacts with other officials. They do in fact, in committee and elsewhere, intervene at various levels, and there is evidence that when they intervene they are influential. But one suspects that the interventions of the Section are considerably more numerous, even making no allowance for the different sizes of the two bodies. Thus the influence of the Section on economic policy as a whole must be regarded as the sum total of the influence of its individual members in their capacity as members of the Treasury (although they no doubt display a strong group outlook on particular issues), whereas in the case of the *Bureau*, which is itself the official co-ordinating authority, the proposition must be reversed; there the influence of its members depends on the influence of the *Bureau* as a corporate entity with independent direct access to the Cabinet. Although both bodies remain essentially advisory, and neither is at present possessed of operational functions, the *Bureau* gives its advice to politicians directly, while the Section must, presumably, work to a much greater extent through or in collaboration with other (non-economist) officials.[1]

It is quite impossible to say whether the British or the Dutch solution has to date been more " successful." [2] One suspects that on balance there is little in it. Certainly there is no evidence that Professor Tinbergen's body has had to pay a price—in terms of

[1] One could say this with more certainty were it not for the Section's previous history of an independent existence in the Cabinet Offices, for at one time its services were regarded as being available to any Department which asked for them and, also, presumably, to the Prime Minister directly. As a result, therefore, of its history, its professional status and the official title of " Economic Adviser to H.M.G." which is now given to the Director, the Section may well be possessed of rather more independence than is normal.

[2] It would be possible to be less indefinite were it not for the security blanket at the British end.

lost potential influence—for its independence. Nor is there evidence that the Economic Section's situation has compromised the overall quality of its professional work, although the difference in status must have been a major factor accounting for the difference in methodology. Both bodies could probably gain by moving in the direction of the other. In the author's personal view—and let it be frankly admitted that this stems partly from an intellectual bias in favour of the Dutch which has run right through his judgments—the Dutch approach carries greater prospects of professional development, *if* such development is wanted. At the present point in Whitehall it seems difficult to see where things can go from there, except in the sense of a continuing process of infiltration. Whether that is a criticism depends on whether one believes that economic policy on the modern scale requires from its official votaries a genuine professionalism : a university training in economics and economic statistics, followed by full-time engagement in teaching, or in research, or as a government economist, ever since. The contrary view is at present dominant in this country : it is believed that adequate results can be obtained by the selection of suitable officials from the administrative class for training " on the job," coupled with the safeguard of constant advice from the sidelines from the small group of full-time professional economists. Great hopes are also placed in the increasing number of entrants to the Administrative Class who originally read economics at the university.[1] Thus a reasonable familiarity with economic problems is now regarded as a useful accomplishment for an administrator, and economic policy as an important new branch of the traditionally amateur British system of civil government. Indisputably that system has worked brilliantly in the past. Can it accommodate the new situation—where some half of the work of government has become an aspect of applied social science—by modest adaptions, or are the implications of the situation more revolutionary than has yet been generally realised? The fundamental question posed here may be just as relevant in Holland. For we have seen that the combination of a high degree of professional independence with a substantial degree of political influence achieved by the staff of the *Centraal Planbureau* is based partly on special circumstances.

R. L. MARRIS

King's College,
Cambridge.

[1] See, for example, a distressingly complacent *Times* leading article, "The British Civil Service II—Choosing and Training the Policy Makers," *The Times*, November 24, 1953.

STATISTICAL INFERENCE IN DYNAMIC ECONOMIC MODELS [1]

I

In recent years attention has been shifted more and more towards empirical studies designed to provide quantitative restrictions on basic economic relationships to supplement and reinforce the qualitative restrictions derived from theory. These numerical relationships may then be further employed by the empiricist to gauge the future magnitudes of key economic variables—in other words for prediction.

Whatever the object of the analysis, the same central problems are encountered in passing from theory to application. Many factors customarily tucked away in the pocket "other things equal" have to be brought out into the open—others classed as non-economic can no longer be ignored. The empiricist must appraise most carefully the adequacy of the theoretic analysis for the explanation of actual phenomena, weighing also the strength of other influences. A comprehensive knowledge of his area of interest is essential if he is to be adept at this art.

Assuming this difficult task complete, the raw material may be brought to the estimation stage. Following the common analytic practice of segregating those aspects that lie outside immediate inquiry, the empiricist has concentrated his attention on one relationship at a time, ignoring the fact that each forms but a limb of the economic skeleton. Appeal has been made to the Markoff theorem on least squares. One variable has been selected—often quite arbitrarily—as dependent. Estimates of parameters attached to the other variables have been obtained, and these, together with the values of independent variables,[2] have provided an estimate of the dependent variable which has then been compared with the observed value of that variable.

The differences between the observed and the estimated values of the dependent variable or "residuals" [3] have been customarily

[1] Review of *Statistical Inference in Dynamic Economic Models*, edited by T. C. Koopmans. Cowles Commission for Research in Economics, Monograph No. 10. (New York: John Wiley (London: Chapman & Hall), 1950. Pp. 438. 48*s*.)

[2] Those on the right-hand side of the equation, in terms of which the dependent variable is expressed.

[3] Residual being the name given to the calculated deviations observed in the sample.

attributed to two underlying causes. First, it is believed that the functions are incompletely specified and that the economic variable treated as dependent is subject to the impact of a large number of minor influences, often non-measurable. Secondly, it is recognised that observations of the dependent variable are not always the "true" values, but the measurements taken are subject to the fallibility of the observers and recorders.

The Markoff theorem yields what are known as best linear unbiased estimates of coefficients in conditions where the assumed unexplained portion of each function can be described by a disturbance [1] which acts in a random manner with constant variance, moving independently in successive observation periods and distributed independently of the variables treated as independent. What does this statistical mouthful imply? It means that estimates of coefficients obtained from a series of samples drawn from the underlying population [2] under the same conditions would have their mean values equal to those of the coefficients in the basic relationship (assumed to be characteristic of the population), and these would lie clustered within a smaller region round the true value than would those (with the same property) obtained under any other estimation procedure.

Under somewhat more restrictive conditions (normally distributed disturbances and large samples) these same Markoff estimates may be shown to be equivalent to those obtained by the method of maximum likelihood. The latter estimates possess the properties of consistency and efficiency.[3]

A convenient demonstration of the equivalence of Markoff and Maximum Likelihood estimates in this case is provided by Hurwicz and Koopmans in Chapters VI and VII of the volume under review.

How stringent are the "Markoff" restrictions on the disturbances?

First, these "errors," lodging-houses for immeasurable variables

[1] The term "disturbance" relates to a population characteristic of which the properties of the "residuals" provide estimates.

[2] It is convenient to think of the possibility of drawing endless samples from a population comprising elements behaving in accordance with the stated equation. Time series constitute one enumerative form that these samples may take. In practice, it is difficult enough to get a large number of observations, let alone repeat the "experiment," but this need not eliminate the usefulness of the postulates.

[3] A consistent estimate is one that approaches more and more closely to the underlying (assumed) population coefficient as the size of the sample increases indefinitely. The efficiency criterion provides estimates with minimum variance (spread) for indefinitely large samples.

and errors of measurement, must have zero mean value and be concentrated similarly about this mean in repeated samples.

Secondly, the disturbance in any observation period must exert no influence on that of any other observation period. There must be no tendency for the minor (and unspecified) influences to walk in step over different time intervals.

Thirdly, the disturbances must move quite freely of the independent variables.

Omitted variables or measurement errors in the consumption function, for example, must not be systematically more (or less) important when income [1] is large. This condition requires that independent variables in the relationship must be observable free of measurement error. But is it necessarily the case that omitted factors impinging on consumption behaviour should influence only "amount consumed" and not also "real income"? May not such effects as changes in tastes or idiosyncrasies of weather affect the latter as well as the former? If the answer to this question is in the affirmative, then there is no theoretic justification for singling out a particular variable as dependent and adopting the Markoff method. There are now at least two variables that fail to satisfy the requirements of the explanatory or independent variables in the method. As Haavelmo [2] was the first to show, estimates of parameters obtained under these circumstances by using the Markoff method are biased and inconsistent.

II

We are now ready to outline the Cowles Commission prescription for certain of the cases that do not respond to the Markoff treatment. Their argument stems from the complete economic model—not from the individual equation. Each equation that expresses a behaviour pattern is regarded as before as a stochastic relationship, and in the cases so far considered this is achieved by adding a disturbance term to each relationship. These are assigned mean values of zero and assumed to have constant variance.

At the present stage of their investigations the Cowles Commission theorists regard these disturbance terms as portmanteau compartments for random influences which cannot be directly and explicitly included in the relations. They are assumed to influence the economic variables. Their relationship to other variables

[1] Consumption being chosen, as has been customary, as dependent variable.

[2] T. Haavelmo, "The Statistical Implications of a System of Simultaneous Equations," *Econometrica*, Vol. II, January 1943, pp. 1–12.

must be more fully described, as must the relation of the several disturbances in the different stochastic equations amongst themselves.

It is assumed that the explicit variables may be divided into two classes: those distributed independently of the disturbances and those which are not. The former are classified as exogenous, the latter endogenous. This is a statistical distinction for which an economic counterpart must be found in application. Broadly speaking, economic variables in current time are endogenous, those relating to past time must, *ipso facto*, be independent of current disturbances.[1] In this sense they are analogous to pre-controlled variables. Other variables justifiably taken as given by the economist, such as population and money supply in the short period, may reasonably be assumed exogenous. This whole thorny question of variable classification is examined by Koopmans from a statistical point of view (Chapter XVII), but in the end it becomes essentially a matter for empirical judgment as to which variable goes into which compartment.

One advantage of the distinction between these two classes is that it provides a means for retaining or resuscitating the Markoff method of least squares.

But first we must say more of the properties of the disturbances. They are regarded as members of a joint probability distribution, distributed through time independently both of their own earlier values and the earlier values of the other disturbances. These are pretty onerous conditions, especially in situations where it is often almost impossible to know whether their acceptance as assumptions is justified.

The basis for understanding the method is to recall that for linear systems of equations (stochastic as well) the underlying relationships may be regrouped in any form.[2] In particular, it is possible to express the endogenous variables as functions of exogenous variables and disturbances only. In this form the equation system is referred to as in the "reduced form."

In the reduced form we can estimate the coefficients of the exogenous variables on the right-hand side by the Markoff method, but this does not necessarily mean that we have sufficient information to disentangle the coefficients in the original (prior to re-

[1] Prof. Koopmans draws attention to certain limitations to this argument when samples are small. For simplicity we shall refer to lagged endogenous variables as exogenous throughout this paper.

[2] At the present stage the technique is restricted to linear systems, *Statistical Inference*, p. 70.

grouping) relationships of our model which the authors christen " structural equations "—that is, it is not necessarily the case that we can unscramble the " theoretical " coefficients which may be our main interest. If we can, then we may say that the structural coefficients are identifiable. This aspect of the problem, which the authors term " the identification problem," can in principle be solved prior to estimation.

We illustrate from a simple stochastic version of a " trade cycle " model embracing both multiplier and accelerator mechanisms.

(i) $C_t = a_{10} + a_{11}\ Y_t + U_{1t}$
(ii) $I_t = b_{10} + b_{11}\ (Y_{t-1} - Y_{t-2}) + U_{2t}$
(iii) $C_t + I_t \equiv Y_t$

C_t = real consumption at time t
I_t = ,, investment ,, ,, t
Y_t = ,, national income at time t
U_{it} = disturbance
$t = 1, 2 \ldots . N;\ i = 1, 2$

After eliminating the third equation the reduced form becomes :

$$Y_t = \frac{a_{10} + b_{10}}{(1 - a_{11})} + \left(\frac{b_{11}}{1 - a_{11}}\right)(Y_{t-1} - Y_{t-2}) + \left(\frac{U_{1t} + U_{2t}}{1 - a_{11}}\right)$$

$$I_t = b_{10} + b_{11}\ (Y_{t-1} - Y_{t-2}) + U_{2t}$$

It will be observed that the second relationship is already in a form suitable for Markoff estimation.

Since Y_{t-1} and Y_{t-2} are exogenous, we may estimate the coefficients in these equations using the Markoff Theorem, treating $(Y_{t-1} - Y_{t-2})$ as a single variable. We obtain $\frac{b_{11}}{1 - a_{11}}$ and b_{11}, and from the combination we can identify both a_{11} and b_{11}. Likewise we obtain a_{10} and b_{10}.

The possibility of identification of any one equation is shown to depend, *inter alia*, on the number of exogenous variables excluded from it but influential elsewhere in the model. Or, more directly, if it is not possible to produce a different structural equation of precisely the same form by linear combination of all equations, that equation can be identified (distinguished).

The reader may demonstrate for himself that if the consumption function is re-written $C_t = a_{10} + a_{11}\ Y_t + a_{12}\ Y_{t-1} + a_{13}\ Y_{t-2} + U_{1t}$ its parameters would become unidentifiable.

If we manage to surmount the identification hurdle we have a

choice of two different methods of estimation—one requiring less *a priori* information than the other. The limited-information method (sometimes known as the " reduced form " method) proposed by Anderson and Rubin neglects in the estimation process endogenous variables which reside in relationships other than the one with which the researcher is concerned, while the full-information method takes into account every aspect of the specification of the model. It thus provides more efficient estimates in large samples but at much greater cost. To my knowledge this latter method has only been employed by Dr. L. R. Klein in a small three-equation model.[1] The other method, while cumbersome, is nevertheless a good deal more manageable. It possesses the further merit of being applicable to incompletely specified models under certain conditions.

Both methods are founded on maximum likelihood, and are therefore applicable to large samples. The limited-information one (as has in part been indicated) makes use of the reduced forms, the parameters of which may be obtained by the Markoff theorem. In some cases (" just-identified equations ") knowledge of the reduced-form coefficients is sufficient to enable us to extract estimates of the (structural) parameters in the original equations; in other cases (" over-identified equations ") a more advanced technique based on maximum likelihood is necessary to disentangle them.

In the full-information method, on the other hand, approximation methods, once again based on maximum likelihood, are necessary to determine estimates of the structural parameters. In both methods knowledge of all non-endogenous variables in the model is an essential pre-condition for estimation.

To sum up : If sufficient *a priori* restrictions on the model are available, principally in the form of exogenous variables, individual equations in the model may be identified. Estimation may then be proceeded with by one of two methods proposed. These estimates have been shown to be consistent and efficient [2] for large samples, the central-limit theorem being appealed to when the assumption of normally distributed disturbances is untenable.

The initial specification of the model, including the *a priori* restrictions, is determined by the economist, not the statistician, and no amount of technical manipulation will make any equation automatically distinguishable. These *a priori* restrictions may

[1] *Economic Fluctuations in the United States, 1921–1941*, New York, 1950.
[2] Efficient in the sense of comparison with other estimation procedures using the same amount of information.

take many forms. The more that is known, the more likely is it that any one equation can be identified. A problem facing the economist is to determine whether his models are likely to be such as to justify the assumptions required for the employment of these techniques. Are the conditions of economic models such that these advanced techniques are applicable when least squares fails?

When time series constitute the basic data the assumption that disturbances are independently distributed through time may be very questionable. This has been widely recognised, and some contributions to this subject are included in the volume. Current opinion would probably incline to the view that a breakdown of this assumption complicates rather than invalidates the procedures. Nor is that distressing feature of much empirical work, multi-collinearity,[1] skirted by these new methods.

Is it true that there are variables that can in any real sense be classed as exogenous, *i.e.*, as capable of movement independently of the disturbances? Are the disturbances in different equations at different time intervals likely to move independently? These are awkward questions confronting the empiricist, and they have no nice answers.

However, even if we are satisfied that all these assumptions are justified, that identification is possible and estimation may be proceeded with, is there any reason to believe that estimates obtained from samples of the size (of the order of 15–50) usually available to economists will prove sufficient to give the highly desirable estimation properties of the coefficients applicable to large samples, remembering that consistency and efficiency are large sample phenomena?

It would be too much to ask the authors to provide a firm answer to this, for in general small-sample theory is still in a very rudimentary state. But it is an important question for the practical worker. Some empirical evidence from studies by Klein,[2] Christ[3] and the writer[4] raises legitimate doubts as to the superiority of these estimation procedures over least-squares methods in small samples. If least-squares coefficients in single-

[1] This problem arises when two or more variables tend to move together, and is really only another aspect of the problem of identifiability—though one that is often not obvious prior to estimation.

[2] *Op. cit.*

[3] C. Christ, "A Test of an Econometric Model for the United States, 1921–41," *Conference on Business Cycles* (New York, National Bureau of Economic Research, 1951).

[4] Not yet published. Filed as Ph.D. Dissertation in the University of Cambridge. But see abstract of Econometric Society (European) Meeting 1952, *Econometrica*, January 1953.

equation estimation are biased, so also appear to be those obtained by these new methods. In fact, one most striking feature is the degree of correspondence of results from both methods. Much of this empirical work is exploratory, and the reader must be referred to the sources for fuller information.

A further word of warning. These new methods regard all exogenous variables as free from errors of measurement. In this they represent no advance over least-squares procedures. In fact, no estimation procedures are available for cases where the disturbances through absorption of measurement error become interdependent with exogenous variables as well as a congregating centre for omitted influences impinging on endogenous variables.

Space will not permit more than a brief mention of the large number of other contributions in the volume which will appeal to readers in varying degree according to their interests. To the writer the most interesting are a discussion of the place of Confluence Analysis in econometrics, by T. Haavelmo, and the demonstration by L. Hurwicz that in first-order linear stochastic processes estimates of coefficients obtained by least squares in finite-sized samples are biased and that this bias is measurable. This result appears both new and important. In particular, it suggests that whatever statistical methods we use will lead to biased coefficients when endogenous variables and their first-order (or higher) lags are present in a model.

But this volume will be judged on the basis of the two new methods of estimation proposed (Chapters II and IX) for use in dynamic economic models. Technically these are important contributions to the literature, but their practical utility is yet to be ascertained. To the applied economist it is suggested that he walk warily, for his bugbear is that small samples, uncertain quality of data and difficulties of specifying models do not justify an uncritical adoption of these new procedures for all his dilemmas.

When all is said and done, one may ask why must one bother with these complicated techniques? Will not least-squares (Markoff) estimates from single equations provide us with a reasonable approximation? In conditions where the assumptions are not fulfilled but those of the Cowles method are, we do know that for large samples, least-squares estimates of coefficients may be misleading. Just how misleading it is difficult to ascertain. This depends very much on the intrinsic properties of the models. The question whether we have measured a demand rather than a supply relation is a case in point. The need for these more rigorous assumptions and procedures is occasioned by the fact

that the problem that gave rise to them has previously been ignored or found intractable.

But still the empiricist might say: "I am not so interested in good estimates of structural coefficients as in formulæ for prediction. Is all this additional labour worth while?" The answer to this further question is supplied by Prof. L. Hurwicz on pp. 266–70. Briefly, if the structure of the model does not change from that previously observed, prediction by least-squares possesses certain desirable properties. If, however, any aspect of the structure of the model has changed, and provided this change can be specified, then the new methods, conditional upon the underlying assumptions being fulfilled, give closer predictions for large samples than any other methods utilising the same or less information.

The Cowles Method provides a very convenient point of departure for attacks upon the many intricate problems that remain. Apart from those already alluded to, there is a great need for estimation procedures that permit of non-linearities in models and multiplicative rather than merely additive disturbances. We also need more information as to the minimum necessary degree of knowledge required of equations in the model other than the ones in which we are directly interested, if good estimates are to be obtained at low cost.

In this sense alone this volume must be proclaimed a distinct advance.

MALCOLM R. FISHER

Cambridge.

REVIEWS

The Political Element in the Development of Economic Theory. By GUNNAR MYRDAL. Translated from the German by PAUL STREETEN. (London: Routledge & Kegan Paul, 1953. Pp. v + 248. 25*s*.)

THIS important book appeared in Swedish in 1929. It was soon afterwards translated into German, and in its German version it had a wide influence. The appearance of an English translation (which will henceforward be the only version that is readily available, since both the Swedish and the German editions are out of print) is therefore to be welcomed. It has been a nuisance that a book, which can now be seen to mark a very significant stage in the development of economic thinking, has been so long out of reach.

The English reader, coming to Myrdal's book for the first time, will naturally bracket it with Robbins's *Nature and Significance of Economic Science*, though it should be noticed that it is a little earlier than Robbins's book. Both can now be regarded as classics of the positivist, anti-normative tendency, which (never quite unrepresented among economists) came into particular prominence at that particular time. Many of the arguments advanced in the two books run very closely parallel. But Myrdal is more of an extremist than Robbins; he carries his agnosticism to greater lengths. Robbins wields his axe with gusto, but at the end of his operations it is only the undergrowth that has been cleared away; the tree still stands. When Myrdal has finished, it lies flat. Some will feel that his carriage of arguments to their logical conclusion is a sign of Myrdal's superiority; others, including the present reviewer, that Myrdal's is a *reductio ad absurdum* which proves no more than that Robbins also went too far. It must nevertheless be granted that in our search for an acceptable standpoint in these difficult matters Myrdal has at least performed the function of putting up a flag at one corner of the field.

As Robbins is to Cannan, so Myrdal is to Cassel; the positivist tendency, already apparent in Cassel's work, is given by Myrdal a more explicit statement. There is indeed one respect in which the derivation from Cassel is a weakness; for it leads Myrdal to take over Cassel's view that demand theory (positive demand theory)

can be entirely based, in Cournot's manner, upon the simple demand curve or price–quantity relationship, without any assumption about a scale of preferences, even an ordinal scale, lying behind it. The rejection of cardinal utility, which is common to Myrdal and Robbins, is accordingly extended by Myrdal into a more thoroughgoing rejection of subjective valuation theory altogether. This is, no doubt, one of the sources of his extremism; but there would seem to be some indication, from the (very brief) preface that the author has contributed to the present edition, that he may have changed his mind to some extent upon this question. If so, one of the more obvious differences between Myrdal's approach and Robbins's would fall to the ground.

Much more important than this is the fact that the normative economics, which Myrdal attacked, was that which provided, in the hands of the older British economists, and of contemporary economists on the Continent, an intellectual foundation for economic liberalism; while that which Robbins attacked was itself on the way towards an abandonment of liberalism, at least in its pure form. Politically, therefore, the books appear to be in opposite camps. While Robbins is, ultimately, a traditionalist who is not concerned to do more than lop off what he conceives to be excrescences on the main tradition of economic thinking, Myrdal attacks the tradition itself. The similarity of the weapons employed does not conceal this radical difference.

The core of Myrdal's argument may be summarised in the following propositions: Every economic change affects distribution as well as production, and the two aspects can never be disentangled. There are no economic grounds on which we can say that one system of distribution is better than another; and since every change affects distribution, this means that there are no economic grounds on which we can say that one state of affairs is better than another, or that any change can be made with advantage. In order to come to conclusions about advantage, we must introduce value-judgments from outside economics. The economists of the past have always implicitly introduced such value-judgments; but because they have done so implicitly rather than explicitly, they have arrived at conclusions which do not follow from their overt premises, and have therefore exhibited a concealed political bias. That bias Myrdal desires to expose, in the interests of an economics which is to be purely scientific, which is to explain, but in no way to prescribe. This is the outline of his contention; further details are perhaps hardly called for, since (though hardly anyone has carried it as far as Myrdal) the general

nature of the argument which he advances has now, a quarter of a century later, become quite familiar.

One or two comments upon his position may, however, be made. It is one of Myrdal's merits that he makes the issue hang so directly upon the dichotomy between production and distribution; for it is here, rather than in any side-issue about the measurability of utility, that the crux is really to be found. It is accordingly no accident that the part of his analysis which will be most readily accepted—which is indeed already most widely accepted—is that which deals with public finance. For in tax questions the distribution aspect is primary; effects on production, if they come in at all (and they may be quite unclear), are of secondary importance. The attempt to lay down canons of taxation which are free from "value judgments," which are independent of political principles, was always a vain one. Neither the utility theory of Edgeworth and Pigou nor the benefit theory of Wicksell and Lindahl have much power to carry their readers with them.

But surely, in relation to economics as a whole, taxation is a somewhat special case. There is no shortage of economic problems which lie at the other extreme, problems in which the production aspect is clear, while the distribution aspect (when long-term as well as short-term effects on distribution are considered) is rather hazy. It would be wrong to claim that even these problems are entirely unaffected by Myrdal's indeterminateness; but there is a respectable case for the classical (and modern) practice of treating them, as a first approximation, as if they were. As soon as there is allowed to be some justification in this procedure, even over a limited field, the whole picture changes.

It should be noticed that the concepts which Myrdal must banish do not only include such obvious targets as utility and welfare; they also include the *real national income*. He cannot even grant that maximisation of real income (in any sense) is a proper economic norm. Now one can readily admit that real income is a tricky concept, and (with Pigou) that its maximisation does not have unconditional priority over other objectives; but the abandonment of these ideas is precisely the point at which the present reviewer (and no doubt many others) would desire to stop short. The efforts which some of us have been making to find a new basis for "Welfare Economics" (efforts which are usefully summarised by Mr. Streeten in an appendix to his translation) have been a search for a way by which one can avoid that abandonment. Though they have suffered by claiming greater success

than they have attained (or than is perhaps attainable), one modest claim may still be made for them. They have shown that there exist a fair number of problems for which the concept of real income is a useful guide, and the increase of real income a reasonable objective. Once this is granted, the development of economic principles recovers its unity. We can respect our forebears, not merely because they incidentally discovered some things which we think to be important, but because the things which to them seemed central retain their importance to us also.

When one is dealing with those later writers who take what is substantially Myrdal's view, one is tempted to ask, in view of their insistence that policy must depend upon value-judgments that are extra-economic, where in fact do these value-judgments come from? If they are to be wisely formed, they must be based upon some discipline; if not on science, then on philosophy. Why should we assume that economics has nothing to contribute to that philosophy? But in Myrdal's case the answer to these questions is clearer than it is with some others; it becomes clearer still if we read this book with some thought of his later work. What he is doing here is to turn away from economics towards sociology. It is because he conceives of a sociology that will give him some basis for value-judgments that he is willing to go so far in extruding them from economics. The admiration which one feels for his accomplishment in that wider field sweetens the taste of this book. But we economists, who will never be sociologists, must make our philosophy, not neglecting what he can teach us, from what we can learn by ourselves.

JOHN HICKS

All Souls College,
Oxford.

Essays in Positive Economics. By MILTON FRIEDMAN. (Chicago: University of Chicago Press (London: Cambridge University Press), 1954. Pp. v + 328. 43*s.* 6*d.*)

IN its subjects, though not in its arrangement, this volume falls roughly into two halves, one devoted to methodology, with particular reference to demand analysis, and the other to monetary policy and theory: in particular, to the possible dangers of full-employment policies, to the monetary and fiscal requisites for economic stability, the case for flexible exchange rates and the problems of a commodity reserve currency.

The Introduction, which is the title or "keynote" essay, elucidates the Methodology of Positive Economics. After marking off positive analysis from normative judgments, Professor Friedman lays down the prime object of positive economics as being the making of more and more accurate predictions. Professor Friedman then ventures on a generalisation, characteristic of optimistic liberal social scientists, that "currently in the Western world" differences about economic policy derive predominantly from differences on the "positive" side, that is from "different predictions about the economic consequences of taking action—differences that in principle can be eliminated by the progress of positive economics—rather than from fundamental differences in basic values" (p. 5). Perhaps there is a trace here of what Professor Friedman later in the book calls "casual empiricism." Anyhow, Professor Friedman is not haunted by what has recently been called the Spectre of Predictable Man. Predictions, Professor Friedman continues, must be based on a "theory," in the sense of an explanatory hypothesis which—or the implications of which—must, as far as possible, constantly be tested empirically. As an example of a highly significant hypothesis, Professor Friedman holds, for a rather mixed bag of reasons, that "confidence in the maximisation-of-returns hypothesis is justified" (p. 22). He points out, however (p. 16 n.), that the defence of the marginal maximising analysis of the firm is apt to come "perilously close to presenting the theory as a pure tautology." Professor Friedman does not explain how he disposes of this peril, that is, the problem of the content of the maximand in the maximisation hypothesis. By and large, however, it seems that the positive economist takes a very sceptical view of most modern work on the firm since about 1890. He holds that descriptive questionnaire studies of business-men's motives and behaviour are "almost entirely useless" (p. 31 n.) as a means of testing economic hypotheses. Then again, "the theory of imperfect or monopolistic competition developed by Chamberlin and Robinson . . . possesses none of the attributes that would make it a truly useful general theory" (p. 38). In fact, "positively" there seems to have been very little progress in this field since Marshall's *Principles*, and very little in monetary theory since the quantity theory was first fully developed: "The weakest and least satisfactory part of current economic theory seems to me to be in the field of monetary dynamics" (p. 42).

The main message of the two following papers on price theory

is also methodological. In the well-known paper on Marshall's Demand Analysis the methodology is blended with valuable analysis of the demand curve, and with some very questionable speculations as to Marshall's precise meaning. The culminating theme is the contrast between Marshall's conception of economic theory as an instrument for explaining and predicting economic behaviour, and the—in Professor Friedman's view—widely-held modern conception of economic theory, according to which abstract generality, mathematical elegance, and refined hyper-precision, are the main criteria. There is here, undoubtedly, a valid and important contrast, developed with much penetration. But it is very unfortunate that Professor Friedman employs the term " Walrasian " as a pejorative adjective to denote the conception of economic theory which he, very justifiably, wishes to criticise. If ever there was " casual empiricism " here it is. Not a syllable of Walras' writings is quoted to justify taking his name in vain. It is quite true that some modern theorists, who have obviously inclined to the conception of economic theory which Professor Friedman is attacking, have derived something from Walras (as from other sources). But the same conception has been manifest in other writings (for instance, on imperfect competition) which owe nothing whatsoever to Walras. The most certainly and positively valuable contribution of this essay is its examination of different types of demand curve and of the none-too-clear underlying assumptions of partial analysis. But it is not clear what sense there can be—unless one is getting down to definite empirical cases—in arguing that one definition of the demand curve must somehow be generally superior to, or more significant than, another slightly different definition.

The next paper deals with the fallacy in the traditional theoretical case against indirect taxation, which Professor Friedman traces to the use of the " usual " type of demand curve rather than the " Marshallian–Friedman " type. We would be content to connect the fallacy with failure to grasp the more general notion, that as Professor Friedman puts it, " formal analysis can seldom if ever give easy answers to hard problems " (p. 112).

The surely highly " normative " (rather than " positive ") papers on monetary policy occupy the middle part of the book, which closes with two earlier critical essays, one devoted to Lerner's *Economics of Control* and the other to the penetrating and deservedly well-known attack on Lange's *Price Flexibility and Employment*. Here, with unerring discernment and felicity,

Professor Friedman characterises the methodological features of Lange's elegant and not untypical piece of analysis : its " taxonomic theorising "—a term Professor Friedman revived from Veblen ; its " casual empiricism " ; its use of friction as a *deus ex machina* ; and its (surely very *Ricardian* and *not* Walrasian) " verbal mathematics " with their almost unavoidable tendency " to state conclusions that flow from special assumptions as if they had wider relevance and to stress special cases that lead to conclusions of particular interest " (p. 300).

There is, of course, much to disagree with in this volume, and possibly a certain amount which Professor Friedman himself will disagree with in five or ten years' time. But there is so much that is acute, independent and stimulating, that this collection of essays should be widely and warmly welcomed.

T. W. HUTCHISON

London School of Economics.

Britain in the World Economy. By SIR DENNIS ROBERTSON. (London : Allen & Unwin, 1954. Pp. 92. *7s. 6d.*)

THIS work is composed of four lectures delivered at the University of Virginia in March 1953. The first lecture, entitled *The Mother Country*, describes the position of Great Britain herself, as the war and post-war policy have formed it, particularly the progress made in rebuilding the export trade and the capital equipment of industry. Sir Dennis has been able, in the published lectures, to correct the unduly pessimistic view of savings which he based on the National Income Statistics of 1951, since the return for 1952 became available a few weeks after the lectures were delivered.

The second lecture is concerned for the most part with a description of the Sterling Area and its history. The Sterling Area has worked, though not perfectly, and, in regard to the self-governing members, Sir Dennis sums up :

> " All of them have sinned at one time or another in failing to control their own internal inflation. All of them are now trying to do better, and to co-ordinate their efforts more closely with one another. None of them would be sensible to seek to quit " (pp. 46–7).

When he turns to the British Colonies and dependencies, he defends the Mother Country against the accusation that the enormous increase in their sterling balances since 1945 has

been an abuse (pp. 47–8). He recognises to the full the obligation to develop them and raise their standard of living. But he deprecates the "peculiarly woolly form of semi-philanthropic, semi-predatory, pseudo-imperial mystique," which blinds some people to the essential condition, the creation, "by increased production or reduced consumption at home, of a persistently favourable balance of payments by the Mother Country" (p. 51).

The third lecture provides a balanced view of the Dollar Shortage. While admitting that some of the countries which suffer from this trouble have in part themselves to blame (pp. 55–6), Sir Dennis Robertson indicates in concise form what the United States could contribute in the guise of the good creditor (pp. 63–70).

Of the American business fluctuations, which have been such an embarrassment to other countries, he comments:

> "the social and political forces making for perpetual inflation are tremendously strong, and it may be that it is only through minor recessions of this kind that, even here, the reputation of money as a measure and store of value can be prevented from being irretrievably undermined" (p. 60).

Is he not here a little too acquiescent in chronic inflation?

Perhaps the most noteworthy part of his treatment of the Dollar Shortage is the passage where he points out a defect in the smooth working of the principle of comparative costs. According to that principle, a balance *ought* always to be attainable between any two trading areas, however great the gap between them in productive power (p. 56). But suppose that the rich area, in virtue of its high rate of accumulation and technological progress, is constantly introducing new methods and processes which involve a far-reaching revision of comparative costs. The poor area may find over and over again that its export industries lose the comparative advantage on which they have been relying and wither away (pp. 58–9). Would it not do better to preserve the continuity of its own humble industries at the cost of forgoing the advantages of trade with its rich neighbour?

The concluding lecture is on Discrimination, more particularly on the discriminatory effects of a customs union, such as American opinion has so often urged for Western Europe, or of a preferential union, such as American opinion has so emphatically condemned for the British Empire. Sir Dennis Robertson shows that, if a union is to produce substantial results, the industries of the countries

forming it, "to start with, should be highly similar and therefore competitive, but that there should be between them great unexplored potentialities of diversification and therefore of co-operation" (pp. 73–4).

In his analysis of unions (pp. 72–3) he distinguishes the case where the participating countries "make for each other things which each of them, while mutual restrictions were in force, found it cheaper to import from" outside countries, from the case where they "make for each other things which each of them used to make less efficiently for itself." The former is no gain to anyone; the latter is clear gain, at any rate in a more productive division of labour. It is only for the latter that he recommends economic systems which are "actually highly competitive, but potentially highly complementary or co-operative." Yet is not the former, by which dollars are to be saved, the primary aim of current proposals for European union?

Sir Dennis Robertson has compressed a remarkable wealth of ideas in the eighty-three pages of his lectures, and has expressed them with the lucidity and literary felicity which we always expect from him.

R. G. HAWTREY

London.

British Public Finances. Their Structure and Development, 1880–1952. By URSULA K. HICKS. (London: Oxford University Press, 1954. Pp. v + 225. 6s.)

INTO the brief space of 220 small pages Mrs. Hicks has compressed an amazingly large amount of material. Beginning her story in 1880, she shows in successive chapters the way the public sector of the economy has grown, the principal forms taken by public expenditure and the main changes in the structure and pattern of Government revenue over the last eighty years. Subsequently she turns her attention to the problems of local authorities, fiscal policy designed for income-stabilising purposes and finally loan finance and debt management. A compact series of tables and charts, together with a useful bibliography, complete the book.

It must be said straight away that as a simple description of the anatomy of British public finances, the book is extremely successful and is bound to become the stock-in-trade of all British students at the beginning of a public-finance course. The whole book shows a deftness of touch and a wealth of learning which few

others could have matched in this field. The choice of period is itself a good one—from the high noon of Victorian finance to the re-birth of monetary policy in 1951. Not the least of the merits of the book is the way the author has attempted to incorporate any very recent statistical information which is relevant to her purposes.

Obviously, no two people would agree over the precise contents of such a small book about such a long period. Nevertheless, it is interesting to recollect that the present author declared in her *Public Finance* (published in 1947) that there was no discussion of public borrowing and debt management in that book, mainly because (*loc. cit.*, p. xii) "the introduction of technical detail in a book of this nature would require a description and interpretation of monetary and credit institutions which belong more properly to the field of money and finance." Does not the same point hold *a fortiori* in an even smaller book? In many ways this chapter is the most unsatisfactory, precisely for this reason. Or is it that the author feels that debt problems could be omitted from a book written when fiscal policy was the only horse on the course, but must be reinstated now that monetary and fiscal policy run together in harness again?

At some points the discussion is perhaps a little elliptical. The chart on p. 11 and the accompanying discussion suggesting that public expenditure currently runs at some 40% of the net national income hardly does justice to a tricky subject. How many students will realise that the figure of expenditure includes all such items as transfer payments, and therefore grossly exaggerates the absorption of real resources by the public sector? Mrs. Hicks is also a great believer in the gospel according to the *National Income Blue Book*. It might have been wiser to throw out one or two hints to the less sophisticated that the official divisions of taxation, estimates of inter-sectoral flows and the like are not a form of revealed truth, but rest on various theoretical pre-conceptions, and therefore in the nature of things cannot have any greater validity than these pre-conceptions. Sometimes loose ends could have been tied up a little more tightly. Thus on p. 84 it is explicitly stated "liability to income tax does not determine prices," whereas on p. 86 it is argued that profits tax tends to drive capital from risky to safe investments. The less percipient may very easily fail to realise that the latter point applies in the case of income-tax too, and that therefore the argument on p. 84 is subject to modification in this respect. From time to time the author yields to the temptation to ride particular hobby-horses (such as the discussion of an annual capital tax and the possibility of an expenditure tax, on pp. 99–101) which do not seem very necessary to the main trend of the argument.

The student must therefore be warned about the brevity and partial nature of some of the author's judgments. With this reservation, the book can be strongly recommended to all those interested in a bird's-eye view of the recent development and present position of the British system of public finances.

A. R. PREST

Christ's College,
Cambridge.

An International Economic System. By J. J. POLAK. (London: Allen & Unwin, 1954. Pp. 179. 21*s.*)

THE object of this study is to get a knowledge of the working of the international economic system. Three basic relationships are used to represent the international system: that defining national income as the sum of consumption, investment and net exports; that postulating consumption as a linear function of income; and that postulating imports as a linear function of income. These relationships are elaborated to make some allowance for changes in the relative price of imports and exports; for substitution between home-produced goods and foreign-produced imports, and between home-produced and foreign-produced exports; for import restrictions; and for autonomous investment. Some consideration is also given to time lags, but it is deemed that for the purpose in hand time lags are of secondary importance.

The model is applied to statistical data of twenty-five countries in the inter-war period. The coefficients of the equations are found by the technique of correlation. Perhaps the most salient conclusion the author draws from his work is that relations with the outside world are more important as prime movers of fluctuations in the national economy than are national factors such as government finance or domestic investment. This is obviously an idea of great interest, but for the reasons indicated below it would be inadvisable to regard it as much more than an hypothesis at present. The author has computed a number of coefficients. The value of his foreign trade multiplier lies between 1 and 5·36 (except in the case of Norway, where it came out at less than unity). The proportionate change in exports resulting from a given percentage change in world trade was found to range

around the value of unity. The marginal propensity to import varies around the value of one-half. From these coefficients the author derives an "international reflection ratio" for each country, an average of which gives his world multiplier. According to his calculations an autonomous decrease in imports "would, through the operation of the international economic system, lead to a further reduction of world trade of about equal size" (p. 164). Estimates are also given of price elasticities. In many cases these come out positive, and in those where the sign is negative the absolute value is low—usually less than 1. Mr. Polak does not regard these coefficients as a reliable measure of the price elasticities themselves; nevertheless he believes that they function as "cleansing" variables minimising the influence of price effects upon the other coefficients.

The author is not unaware of the criticisms which have been raised against the fitting, by the least-squares method, of individual relations out of a total system. He takes the view "that these weaknesses are not too serious for the type of measurements made in this study" (p. 62). The equations were, moreover, not automatically applied: on the contrary, different variables were incorporated in the equations for different countries and the values obtained for multipliers, elasticities and correlation coefficients were themselves used as a guide in deciding what equations should finally be used.

> "To some," Mr. Polak writes "this procedure may appear as unpermissible 'doctoring'; 'doctoring' of the figures to agree with the theory and 'doctoring' of the theory to agree with the figures. More generously, and it is hoped, more accurately, the method may be described as an attempt to make an integrated analytical description of actual economic events on the basis of the total knowledge available—theoretical knowledge, statistical knowledge, and general descriptive information" (p. 63).

No attempt will be made here to discuss the fundamental questions which arise as to the meaning and method of econometric work of this sort. To the present reviewer it seems that the meaning of the results finally achieved is by no means clear. Does the method used escape the notorious difficulties, such as the presence of multi-collinearity and the problem of identification, which hinder attempts to distinguish specific relationships in an interdependent system? However, if one questions the approach used, one ought to offer a satisfactory alternative—and this the reviewer is in no position to do. Pending such a radical advance in basic econometric theory, work of the kind carried out in this book can probably teach us—particularly those actually performing it—quite a lot about the way the system works. In spite of the queries that may be raised, this book is a welcome contribution in a field where it is only too easy to knock down and exceedingly difficult to build up. To solve the fundamental problem of how far and in what circumstances structural economic relationships can be derived from empirical observations, more work must be done on the theoretical side of dynamic economic systems. But attempts at empirical work even if premature may, by giving a closer knowledge of the facts, help us indirectly towards an understanding of the basic problem.

HELEN MAKOWER

London School of Economics.

The Mechanism of Economic Systems—An Approach to the Problems of Economic Stabilisation from the Point of View of Control-System Engineering. By ARNOLD TUSTIN. (London: Heinemann, 1954. Pp. xii + 161. 25*s*.)

THERE are certain formal similarities between the problems of devising policies for economic stabilisation and those of designing automatic control systems in engineering. An automatic control system is made up of a number of interrelated components. The dynamic characteristics of each component can usually be described fairly accurately by a differential equation. The complete control system can therefore be represented by a system of equations or mathematical model. Methods have recently been developed by engineers for analysing the dynamic properties of quite complex models, and procedures have been evolved for finding ways in which a given system may be modified to reduce the fluctuations which occur when it is subjected to external disturbances. These methods and procedures can also be used for the analysis of dynamic process models in economics. There are several good books on the theory of closed-loop control systems, but they are written for engineers, and the technical language and examples used form an almost impenetrable barrier to those who have not had engineering training. Economists will therefore be grateful to Professor Tustin, who is head of the Department of Electrical Engineering in the University of Birmingham, for writing a book on the subject which enables them to avoid these difficulties and for suggesting possible applications of the methods to the study of the problems of economic stabilisation.

The book commences with a brief description of the structure of systems of mutual interdependence, illustrated by some familiar economic models. Unfortunately, Professor Tustin has used his own private method of diagrammatic representation of these systems instead of the standard type of block diagram used in the engineering literature. The main principles of system analysis, presented in Chapter III, involve the use of a graphical technique, the Nyquist diagram, for finding the frequency and damping of the free modes of oscillation of linear dynamic systems. Professor Tustin's exposition is admirably lucid and concise, and can be followed by anyone with a moderate knowledge of mathematics and some familiarity with differential equations. Only one example is given (pp. 72–8) of the most important use of Nyquist diagrams, that is, as an aid in finding ways of modifying a system in order to improve its stability. This is not a deductive process; but an art requiring skill and judgment which can only be acquired by considerable practice in the use of this and other techniques. It would have been an advantage if more space had been devoted to this problem.

Although Nyquist diagrams enable one to gain valuable insight into the dynamic properties of fairly complex linear models, they cannot be used for analysing the more elaborate non-linear models that would be needed for an adequate representation of the economic system. Professor Tustin suggests that some further advance might be made by the construction of a special analogue machine for the study of more realistic models. Using a combination of econometric and trial-and-error methods, the system of relationships, forms of the time lags and values of parameters of the analogue might be adjusted to produce as good a "fit" as possible to historical time series, and the resulting system used in making economic forecasts and formulating policies.

This would be a very ambitious project. Apart from the engineering problems involved, it would require a close co-ordination of theoretical, statistical and historical studies in economics, since it appears probable that different models could be fitted to the same empirical data if different judgments were made about the changes or disturbances which had occurred in the system. Partly for this reason, however, analogue machines may prove to be important instruments in economic research. It is possible, too, that existing types of electronic simulator may be more suitable for this purpose than Professor Tustin implies.

Professor Tustin's book contains material of fundamental importance for all who are engaged in either theoretical or empirical studies of dynamic processes in economics. It throws new light on the possibilities and the difficulties of quantitative research in this field.

A. W. PHILLIPS

London School of Economics.

Problemen der moderne economische politiek. By F. HARTOG. (Leyden: Stenfert Kroese, 1953. Pp. xii + 204. f. 9.75.)

IN dividing his discussion into two parts, concerned respectively with principles and with practice, Dr. Hartog might almost be said to have given us two books in one. In both parts he is concerned with that rather mysterious thing called "economic policy." In the earlier and shorter section concerned with theory, this leads him to discuss various venerable questions which have a habit of presenting themselves in a new guise to each succeeding generation. What is the place and the function of the economist in relation to the urgent practical problems of the world? Is economics a pure science concerned with the accumulation and the ordering of verifiable knowledge? Or is economics a normative science, with the economist an expert consultant? And if there are universally valid economic principles and laws, what, one asks in these days, is desirable or practicable in the way of authoritarian intervention? In a world where governments (as some suggest) do what they like in the economic field, what becomes of our old friend "economic law"? Or may there be a nemesis round the corner in the form of a chaos of bottle-necks and recurrent crises?

Inevitably it is primarily with the State, with "authority," that Dr. Hartog is concerned in his discussion of economic policy. In language that is not wholly familiar to us, he argues that "authority" is not one of the original "economic subjects"—as are, for instance, the consumer, the undertaker, labour, capital and so on. Wherever the State appears, its characteristic attribute is compulsion; and it may enter the economic field with two purposes in view. It may seek to provide for the satisfaction of collective needs; or it may intervene in the economic process in order to achieve ends which are not attainable by the operation of the price mechanism.

A large part of Dr. Hartog's discussion, both on the practical and theoretical side, is concerned with the distinction between means and ends (if we may so translate *Taakstellingen*). The tasks to be achieved represent the ultimate ends of economic

policy; the means are derivative. Broadly, these ultimate ends represent the province of politics, while the "Instruments" (to use Dr. Hartog's term) are the concern of economics. In accordance with this point of view, Dr. Hartog belongs to the tradition which rejects the possibility or the usefulness of a "normative political economy." This somewhat untranslatable branch of knowledge called "*economische politiek*" (defined somewhere as the economic aspect of politics) must face up to the possibility of all manner of ends, which are part of the data in any situation. On somewhat similar grounds Dr. Hartog rejects the idea of "welfare economics." It is not for the economist to prescribe the end, and there are too many conflicting ideas as to what constitutes welfare. The end, the target, must first be determined in the political field, and thereafter accepted by the economist. The function of the economist in such matters is seen in at least two directions. In the world of to-day, where the State in most cases aims simultaneously at a multiplicity of targets, there is a very real danger of inconsistency among the ends. It is pre-eminently the task of the economist to underline and expose such inconsistencies. So also, accepting the ends as given, he may suggest more effective means of getting there. It all sounds rather like a time-honoured definition of the relation of the Civil Servant to his Minister.

One other point serves as a transition between the theoretical discussion in the earlier part of this volume and the survey of recent economic policy in selected countries which takes up most of Dr. Hartog's book. There are certain ends—"tasks"—which the State desires to realise; there are certain "instruments" at its disposal for the achievement of these ends. The question arises as to whether these instruments are effective, whether the end is achieved. And here Dr. Hartog, in drawing a distinction, makes use of familiar phraseology in rather an unusual sense. For, if we may put it so, the "instruments" may be under-applied or over-applied. Available instruments from the arsenal of economic policy may be withheld from use, or on the other hand they may be, unnecessarily, forced on the system. The former Dr. Hartog describes as "right-doctrinaire," and the latter as "left-doctrinaire" (p. 55). The distinction and the phraseology colour much of the discussion in the later sections of the book.

Along these lines Dr. Hartog turns in the main part of his discussion to a consideration of the post-war economic policy in four contrasting European countries. The period studied extends

from the end of the war to the outbreak of the Korean War, which he regards as opening a new phase. The countries studied are Belgium, Western Germany, the United Kingdom and Sweden. The section devoted to Sweden is perhaps somewhat sketchy, but in the case of the other three countries, Dr. Hartog contrives in the comparatively short space available to present a reasonably comprehensive, well-informed and critical account of the economic conditions and problems over the years surveyed. In each case, true to the scheme he has prescribed for himself, he deals with the background, the "ends" kept in view which, needless to say, have occasionally varied from time to time, the "instruments" used for the attainment of these ends and the "results." And again true to his framework, he considers how far there have been elements which, on his definition, can be described as "right-doctrinaire" or "left-doctrinaire." In a territory so abounding in hares of all kinds, Dr. Hartog quite naturally starts a goodly number, which it would be engaging sport to pursue. It would be interesting, for instance, to consider whether the English frame of mind is quite so "disciplined" as he assumes it to be; for, indeed, he makes this almost the corner-stone in his explanation of what has happened in this country. Or again, is it possible to isolate the influence of the Welfare State on productivity with such arithmetical precision as he appears to hanker after? Altogether this is a well-informed and thoughtful book, resting on a useful approach to the problems of these recent times.

ALEXANDER GRAY

Edinburgh.

Monopoly and Competition and their Regulation. Papers and Proceedings of a Conference held by the International Economic Association. Edited by E. H. CHAMBERLIN. (London: Macmillan, 1954. Pp. xvi + 549. 36*s.*)

ANY collection of papers is difficult to review. This one is especially difficult, for two reasons. First, the Programme Committee commissioned a series of papers fitting into a scheme which is astonishingly coherent for a conference. For the participants this must have been a great advantage; but, inevitably, it produced some papers which surveyed the field without contributing anything really new. Secondly, the Committee of the International Economic Association asked Mrs. Henderson to record the main arguments which arose during the discussions following the papers. Most of the points arising from the papers

which I should otherwise have wished to make were made by others and clearly put in this record.

Very briefly, the topics covered at the conference were :

(1) *Monopoly and Competition in Various Countries*: eight papers designed to provide a comparative analysis of the problem of monopoly and competition in Canada, France, Italy, the Union of South Africa, the United Kingdom, the United States, Western Germany and Scandinavia. Participants were asked to survey the market structure, the form and success of Government regulation of monopoly, the general public attitude towards the desirability and possibility of maintaining competition, and research currently being done, to note any special features they wished and to provide a bibliography. (Some provided lists of references, others references in footnotes, a few only limited references in the text.) The surveys are mostly valuable summaries of the position up to 1951 ; (it is unfortunate that the proceedings of a conference held in the autumn of 1951 should only be published in 1954). Professor Heflebower, for the United States, departs somewhat from his assignment, providing a critical rather than a descriptive survey; but since he is dealing with a country where the facts are already well known and well documented, this is justifiable. Professor Boehm, for Western Germany, devotes, to my mind, far too much space to verbatim extracts from the decartelisation laws; and he also attributes rather too many evils to state control.

For the reader, the most valuable papers may well be these country surveys and the factual information in Mr. McGregor's paper on the Canadian technique of control, the two contributions on nationalisation, by Professor Lewis for the United Kingdom and Professor Jeanneney for France, and Professor Aubert-Krier's survey of retail trade in France.

This section concludes with a single paper by Mr. Corwin Edwards, based on the country papers and designed to bring out the issues they presented. It does far more than this; for, after commenting on the insufficiency of information, and the lack of standards of judgment about monopoly and competition, it poses a number of questions which need to be answered, both on how much competition we want and upon whether it is possible to preserve or secure what we may decide we do want. Like all Mr. Edwards' works, this paper is full of illuminating remarks.

(2) *Forces Making for or Against Monopoly*: two papers, by Professor Schneider and Professor Bain. Professor Schneider I found too doctrinaire in attacking monopolies, without saying

anything really new. Professor Bain provides a new framework of analysis for the effect of new entrants; but his policy conclusions rest essentially on his assumption that, if the barrier to new entrants is low, existing firms will try to reap monopoly profits and disregard the possibility of new firms coming in, whereas if it is higher they will not. He does not prove this; and to me it is far from self-evident.

(3) *Theoretical Problems of Competition*: two papers, by Mrs. Robinson and Professor Chamberlin. Mrs. Robinson provides a very neat but not very new summary of why competition does not work, devoting most of her time to the point that " supernormal profits are usually wiped out by new investment more quickly than subnormal profits are raised by disinvestment." Professor Chamberlin, dealing with the measurement of the degree of monopoly and competition, points out that " the various indices which can be constructed are limited in their meaning and will always require further interpretation, particularly in relating them to each other." (Incidentally, could he not abandon the oft-repeated argument on the differences between imperfect competition and monopolistic competition? Those who have not yet been convinced will surely not now change their views.)

(4) *Monopoly, Competition and Welfare*: three papers, including Professor Aubert-Krier's on French retail trade, already referred to. Professor Svennilson, in a brief and useful paper on monopoly, efficiency and the structure of industry, makes, among other points, the important comment that " the emphasis, both in research and policy, should be shifted towards the effects of monopoly on efficiency," since its effects on income distribution can be corrected. (This emphasis also emerges in other papers.) In particular, Professor Hennipman (in a different section) provides a balanced, if somewhat inconclusive, survey of the effect of monopoly on economic progress. Professor Rothschild contributes a well-written article querying the whole basis of competition as a standard to be aimed at, and pointing out that many countries have never accepted it. (This point, again, is made elsewhere, notably in some of the country surveys, particularly in Professor Vito's for Italy, in a passage quoted in the Introduction to the book.)

(5) *How to Make Competition Work*: two papers by Professors Clark and Jöhr. Professor Clark's contribution is interesting, though again not very new. It may be possible to combine what may be called the " Schumpeter " advantages of monopoly and those of competition if rivals react sufficiently slowly to give the

innovator a period of substantial profits to repay his initiative. Professor Jöhr, who distinguishes between "inducive" and "compulsive" actions by Governments, approving the former but not the latter, I found unconvincing.

(6) *Techniques of Control*: Here Mr. McGregor's paper on Canada, already mentioned, stands alone; one on Norway had been hoped for.

(7) *Monopoly and Other Economic Problems*: three papers, by Professor Hennipman, already mentioned, and by Professors Machlup and Lombardini. Professor Machlup, on stability, traverses a well-trodden field; he seems to me to underrate some of the ways in which monopoly may promote stability but to neglect the destabilising effect of those forms of agreement which are themselves insecure. Professor Lombardini discusses the question whether monopolies create rigidities; he suggests uncertainty as a new reason for a kinked demand curve, which he claims would have this effect; with Professor Haberler, I feel that his case is a very special one.

(8) *Nationalisation as an Alternative to Private Monopoly*: two papers by Professors Lewis and Jeanneney, already mentioned.

This is a very bald and incomplete summary of a lengthy volume. Those who want a somewhat longer summary of most of the papers except the country surveys, as well as of the discussions, should read Mrs. Henderson's excellent Summary Record of the Debate.

Throughout the papers, and perhaps still more the discussions, participants came back to the standards by which monopoly or competition should be judged, as a basis for a practical policy towards monopoly. As already mentioned, major emphasis was laid on efficiency, as opposed to the allocation of resources, the distribution of income or stability; but a further point was also brought out, the importance (or lack of importance) of competition as a way of life, by providing a means of freedom and opportunity for the individual. It was here perhaps, especially, that appeared the divergence of views between the Americans and the others noted in the introduction to the Summary Record of the Debate. There were also pleas, notably by Mrs. Robinson, for encouraging the good features of monopoly and discouraging the bad; but no general agreement emerged on which were which.

Finally, many suggestions were made for further research, particularly in the practical field, which might help to answer these important questions. Professor Chamberlin, in his Introduction, said that he had no doubt that usable standards would be forthcoming, but that it would take time. Never, surely, proven standards? Or ones agreed by the Governments of all countries, each with different social and political standards? But if the research suggested in this volume is carried out the area of difference should be narrowed, and policies could be based less on prejudice or tradition, and more on reason and present circumstances.

RUTH COHEN

Newnham College,
Cambridge.

An Introduction to the Study of Industrial Relations. By J. H. RICHARDSON. (London: Allen & Unwin, 1954. Pp. 442. 30*s*.)

PROFESSOR RICHARDSON in this book sets himself the task of dealing with general principles and problems rather than making a detailed analysis of the institutions and methods of any particular country although drawing illustrations from many parts of the world. This object is difficult to realise throughout in practice. On certain topics, such as trade unionism, the treatment tends to become largely descriptive and critical of national institutions and methods, mainly those of Great Britain.

Another noteworthy feature of the book is the attempt to treat the subject according to the level at which the relationship arises, the main divisions of the book being workshop relations and collective relations. There are a number of matters, particularly wages questions, where no such clear-cut distinction is possible. To meet this difficulty Professor Richardson departs from his primary division of the subject matter by including a separate section on wages and hours of work. This section is concerned more with principles than procedure. Nevertheless, it does not prove entirely possible to avoid duplication between this section and those dealing with workshop and collective relations, nor indeed with a further separate section covering state intervention. The separate treatment, however, of relations at the work-place has considerable merit. It leads to a full treatment of human problems which are often subordinated in the study of industrial relations to the more spectacular institutional problems associated with collective relations at the industry level.

The author's general approach to the question of wages is an attempt to harmonise the concept of free collective bargaining on an industry basis with the need for a national wages policy. The first element of a national wages policy—a national minimum —has, the author suggests, been in some measure already achieved

in Britain through the operation of statutory wage-fixing machinery and the provision of social security. On this structure he feels there could be built up a wages policy which would avoid both the rigidity of centralised control and the chaos of independent negotiations, and which would bring relative wages more into harmony with the skills and other qualities required in each occupation and industry. He suggests the establishment of a National Consultative Council on Wages representing the Government and the central industrial organisations which would have, as a main task, to consider how in conditions of full employment to avoid the generation of an inflationary spiral caused by wage advances out of keeping with growth of production. He contemplates that the Council might, in normal circumstances and subject to any special considerations, estimate the amount by which the total wages bill should be increased to compensate for increase in cost of living, and expansion in productivity. The estimates would be intended merely as guides to negotiating bodies. Each industry should secure a fair share of the practicable total increase, and a trade union which tried to get too big a share " would not be viewed favourably by unions in other industries." Reference to arbitration of disputes on which there was failure to agree in the negotiating bodies would be voluntary, but would be encouraged by the Government.

The policy which Professor Richardson advocates is no doubt intended as a long-term one. Hopes of its immediate realisation in practice in Britain are certainly not encouraged by the lack of cordiality with which industrial organisations have received the recent proposals put forward by the Government for the extension of voluntary arbitration and by the Courts of Inquiry into disputes in the engineering and shipbuilding industries for impartial investigation of the implications for the national economy of wages claims.

There are a number of factual errors to which attention may be drawn. The General Council of the Trades Union Congress (p. 183) consists of 35, not 32, members; 33, not 27, of them represent 18, not 17, trade groups and 2, not 5, represent women workers. The National Union of General and Municipal Workers has not " more than a million members " (p. 192); it has about 800,000. The cost-of-living sliding scale in the heavy steel trade has been revised several times since 1942, and the particulars given on p. 283 are out of date. The Cleveland selling-price sliding scale was not in 1940 based on the selling price of iron (p. 285); the basis was altered in December 1937 to the selling price of steel plates. It is misleading to state (p. 371) that awards of the Industrial Disputes Tribunal are not binding, when in fact they become, under Article 10 of the Industrial Disputes Order, an implied term of the contract of the workers concerned. Russia did not during the period referred to on p. 422 retain membership of the International Labour Organisation; her membership in fact terminated with her expulsion from the League of Nations and was only on April 26, 1954, resumed by declaration in accordance with Article 1(3) of the Constitution of the Organisation.

This book will not supersede earlier works dealing with individual countries or topics, but it is a refreshingly new approach to the study of industrial relations. It represents in essence an attempt to provide the subject with a content apart from the details of the institutional structure peculiar to any individual country.

H. S. KIRKALDY

Queens' College,
Cambridge.

Management of Agriculture and Food in the German-Occupied and Other Areas of Fortress Europe. A study in military government. By K. BRANDT in collaboration with O. SCHILLER and F. AHLGRIMM. Stanford University Food Research Institute Series on Food, Agriculture and World War II. (Stanford, California: Stanford University Press (London: Geoffrey Cumberlege), 1954. Pp. ix + 707. 80*s.*)

THIS account of German food control in occupied countries, by Dr. Brandt of the Food Research Institute of California, is a monumental piece of work covering a vast field. He has had the help of Professor Schiller, formerly German Agricultural Attaché in Moscow, who was called up for war service in the Soviet-occupied areas, and of other experts including Dr. Ahlgrimm, of the German Nitrogen Syndicate, who was able to follow developments both in Western Europe and the Ukraine. He has also had access to secret official reports found almost by accident among captured documents. A companion volume will deal with control of food and agriculture in Germany itself.

In both World Wars food shortage has been Germany's Achilles' heel and contributed to her final collapse. One of Hitler's objects in invading Russia was to exploit the agricultural resources of the Ukraine, but in this he was largely frustrated. A significant sentence in Dr. Brandt's book sums up a long story

of ruthless stupidity: "Thus the farmers were actually treated worse by the Germans than by the Soviet Government." The system of compulsory deliveries, which was accepted by farmers in Germany, never worked in the Ukraine, partly for patriotic reasons, and partly because Russian peasants had no use for paper money, when there was nothing to buy with it—a problem familiar to the Allies in the Middle East and elsewhere. In the absence of consumer goods there was no incentive to increase, or even to maintain, production.

The same lesson, that force does not pay, is brought out by the story of food control in other countries. Norway, Denmark and the Netherlands were favoured by Hitler compared with France and Belgium. In the former countries management of food and agriculture by their own Governments was eminently successful. Arable acreage was extended; dairy herds were maintained; pigs and poultry were drastically reduced; and there was little black market. In France and Belgium resistance and the black market defied German efforts to impose planning and control. Slovakia was a favoured oasis, where there was no food shortage; but in Bohemia and Moravia production declined, in spite of technical efforts to increase it, owing to political and racial persecution. Excessive demands were made on Serbia, but the peasants ignored delivery orders and fed their grain to growing numbers of pigs and poultry for the black market. Hungary as a satellite was favoured and had no rationing, but contributed little to meet German needs. In Bulgaria and Rumania production declined and food exports to Germany were less than before the war. The peasants "played it safe," and hoarded their grain or fed it to livestock. In Poland brutality and terrorism, culminating in the massacre of the Jews, frustrated the efforts of the German agricultural administration to stimulate production and collection by giving technical aid and by introducing a bonus system of distributing scarce goods.

Running through the story one consistent thread is the conflict between Himmler's Gestapo and the civilians responsible for food and agricultural affairs. The former used force and failed; the latter tried to use conciliatory methods, because they knew that only so could they get results. The late Dr. Louwes, who was so successful in war-time management of food and agriculture in the Netherlands, told the reviewer that he often got his way by playing off rival German authorities one against the other.

In the circumstances it is not surprising to learn that during the war Germany obtained more grain, meat and fats (in terms

of wheat equivalent) from the West—France 10·5 million tons and Denmark 8·8 million—than from the East—U.S.S.R. 14·7 million and Poland 1·9 million. Imports from the Danube Basin were almost balanced by exports to Norway, Finland, Belgium, Bohemia, Moravia, Italy and Greece. In Greece famine conditions prevailed, which had to be relieved by an International Commission run by Swedish personnel.

The book incidentally throws light upon currency and price policy in the occupied countries. Total war contributions to Germany for occupation costs and business claims came to 120,000 million marks at a time when the mark, as measured by the wholesale price index, was still worth about 90% of its pre-war value. Germany obtained, among other goods and services, an addition of about 15% to her supply of grain, meat and fats, with some sugar and potatoes, by inflating local currencies in exchange for balances to be paid off after the war. Britain financed her overseas expenditure in much the same way, but the sterling balances remain to be paid off. In modern war the victors pay, and the defeated go bankrupt.

Dr. Brandt is to be congratulated both on his indefatigable search for the facts and on his clear and balanced presentation of an obscure but significant chapter in the history of the Second World War.

E. M. H. LLOYD

London.

A Critique of Socioeconomic Goals. By H. M. OLIVER. (Bloomington: Indiana University Press, 1954. Pp. vii + 191. $3.)

THIS book consists of a set of essays on the relationship between ethical ideas and economic policies—a field in which, at least to British readers, Professor F. H. Knight is one of the best-known American writers. The author selects a number of "social goals," such as "natural liberty," "distribution according to earnings," "equality" and "maximum satisfaction," which have been fairly widely advocated in the United States as guides to state action, subjects them to a thorough (and often devastating) logical examination, and discusses their general implications for economic policy. Naturally enough, the scope and method of the inquiry are such that most of the topics can be dealt with only in rather general and abstract terms. As the author himself puts it in one place, "this study is based upon the hope that there is some merit even in very generalized argument" (p. 100).

Inevitably, too, the main subject of the book turns out to be the familiar question of how far state intervention in economic life accords, or can be made to accord, with certain ethical principles.

Among a number of topics discussed which are likely to be of particular interest to British economists may be mentioned a useful critique of the idea that marginal productivity analysis can show us how to measure " earnings "; an historical survey of the relations between Ricardian theory and certain branches of nineteenth-century radicalism; a discussion of the incentive effects of income redistribution; and two appendices dealing respectively with the new welfare economics and the various meanings of the concept of full employment. It cannot be said that Mr. Oliver's treatment of most of these subjects, taken by itself, is particularly original, but the unusual angle from which he approaches them often succeeds in revealing interesting inter-connections between precepts and policies which sometimes tend to be obscured in more conventional accounts.

As an example of Mr. Oliver's method, we may take his chapter on " Equality." He is mainly concerned here with " the policy implications of proposed egalitarian ideals and with the extent to which required policies do or do not accord with various other ideals usually upheld by proponents of equality " (p. 58). He deals in turn with " equality in the eyes of the law," " equality of opportunity," " equality of income " and " equality of power and status," analysing each from a logical viewpoint, discussing various possible interpretations of each and describing some of the ways in which these interpretations manifest themselves in economic policy proposals in the modern world. The section on " equality of income " contains a brief comparative survey of income redistribution in the United States and Britain in recent years. Other sections deal with the problem of incentives (with special reference to capital formation), and with the manner in which a redistribution of income would be likely to affect the cultural achievements of a nation and the character of its individual citizens.

A number of Mr. Oliver's individual judgments (particularly regarding such matters as the labour theory of value, Marxism and the U.S.S.R.) seem to this reviewer to be somewhat over-hasty; and other readers may want to challenge one or two of his conclusions regarding modern welfare economics. A more far-reaching if less tangible defect, however, which Mr. Oliver's book shares with certain other recent American writing in this field, relates to the delineation of group relationships in modern

western economies. Mr. Oliver *fully* recognises of course, that economic relationships between different groups normally take the form of property and power relationships, upon the nature and relative strength of which the question of the practicability or otherwise of particular economic policies very largely depends. There is much in his book concerning the relationships between different social groups, each of which is conceived as possessing a certain " status " (based on " rights in property," " rights in income," " rights in jobs," etc.), and as exercising a certain (variable) degree of " pressure " both upon one another and upon the state. The trouble is that it is extremely difficult to find any clear way through this complex pattern of interlocking relationships and conflicting rights unless you are able to postulate one specific and fairly simple socioeconomic relationship (for example, that between capital and labour) as being in some significant sense the *dominant* relationship in a capitalist economy, impressing its character upon the other relationships and therefore upon the economy as a whole. Sometimes Mr. Oliver seems to have some such concept as this in mind, as, for example, when he says that " so long as a basically private-enterprise economy is retained, sizable capital formation is possible only if substantial income inequalities are also retained " (p. 88). But in general he seems to assume implicitly that it is not possible to postulate any such dominant relationship, which means that a number of his conclusions regarding the practicability of given economic policies are perhaps more tentative than they really need to be.

In a number of places in the book (*e.g.*, pp. 123, 148 ff. and 178–9) there are suggestions to the effect that much recent interventionism in the west may have been forced upon the governments concerned by political and economic developments beyond their control. To the extent that this is so, one may perhaps legitimately ask whether it might not have been more useful to relate interventionist policies to these developments rather than to abstract " socioeconomic goals," which must often under the circumstances be little more than rationalisations. But in reply to this Mr. Oliver might justifiably argue that an examination of the ethical implications of what we are obliged to do is by no means otiose, and that it is hardly fair to criticise him for not having written a book on a different subject. As he quite frankly admits (p. 163), his discussion is not intended " to provide a revolutionary's or a parliamentarian's handbook."

RONALD L. MEEK

University of Glasgow.

Migration and Economic Growth. A study of Great Britain and the Atlantic economy. By BRINLEY THOMAS. National Institute of Economic and Social Research, Economic and Social Studies, No. XII. (London: Cambridge University Press, 1954. Pp. xxv + 362. 42*s*.)

BY this inquiry Professor Brinley Thomas has made a notable contribution to the study of the growth of the western economies. It was generally known already that this growth showed various signs of a minor secular fluctuation of some twenty years or more in length. Professor Brinley Thomas now provides new evidence of this fluctuation, and especially of a remarkable interplay between its movements in the United Kingdom and the United States. Immigration to the United States shows the fluctuation, and so does the rate of capital construction there. It appears also in British investment at home and abroad, British exports, and the rate of growth of the British industrial population. But whereas the phases of the trade cycle agree so closely in the two countries, those of this longer type of fluctuation are inverse, or, more properly, reciprocal. At least between 1870 and 1914, the typical relation seems to have been, that at one time the tide sets westward: in the United States the rate of immigration is high, and so is the rate of growth of real income, and of the stock of buildings and other equipment; in the United Kingdom building, and home investment, are relatively depressed, fewer people move into the industrial districts at home and more go abroad, real income rises more slowly, exports are high, and a highly favourable balance of payments marks a high rate of capital export. In the next phase, the waters tilt back to the east, and these relations are reversed: the rate of growth slackens in the United States and quickens in the United Kingdom. Needless to say, the pattern does not hold without exceptions, sometimes important ones. But a pattern is there: the pulse of what Professor Brinley Thomas well calls the Atlantic economy, dividing a common fund of incremental energies between its regions in varying proportions from time to time. Looking at the strikingly opposite movement of the curves which show changes in the rate of building in the two countries, we take the inference that whether a villa should go up in Huddersfield decided, or depended on, whether a frame house went up in Iowa, and we reflect upon the pervasive influence of economic forces, unseen yet active in a myriad individual decisions.

What was the mainspring? I am not sure what conclusion

Professor Brinley Thomas has come to. He shows reason to think that the surges of immigration into the United States before 1870 preceded the surges of construction there, and can be traced to waves of Malthusian pressure in Europe. After 1870 the lag between immigration and construction is reversed, and this suggests that the impulse now arose not in Europe but America, and presumably came from factors other than the growth of population; yet it also appears that the big *movements*, at least of unskilled labour, continued to depend, after 1870 as before, on extrusive pressures—" the timing of these waves was determined by the births cycle in Europe together with the impact of disturbing innovations (particularly on agriculture)." I am left with the impression that the fluctuations began with a squeezing out of people from Europe, that the arrival of these migrants in America stimulated construction there, and that this drew capital, and migrants of a more skilled kind, away from Britain, and checked the rate of British growth. If that is right, we have now to think how this can be combined with other factors which seem to have contributed to these minor secular fluctuations—the varying extent to which from time to time technical changes of widespread consequence were receiving massive application; and the changing balance between the industrial capacity of the world and its output of primary products.

Professor Brinley Thomas usually works with relatives to trend. This has its advantages for tracing changes in the rate of growth, but also the drawback that, for example, a high level maintained after a sharp rise is likely to appear after a time as an actual fall. Thus the relatives to trend give us a falling off in British home investment after 1900, and Professor Brinley Thomas regrets " Britain's lost opportunity," but actually the volume of home investment, having risen sharply after 1895, seems to have remained in the aggregate of 1900–13 about a quarter as big again as in the preceding fourteen years.

I have gone straight to what seems to me most valuable in this work, but it contains much else which belongs properly to a study of migration: it opens, for example, with an account of the views of the economic theorists on migration, it explores the connections between migration and the social structure of the sending and receiving countries, it has a chapter on British settlement in the Dominions. The analysis of growth, I suspect, has broken its way through a chrysalis case of migration studies proper: this has left its mark on the exposition, and the reader will be conscious of some need to cull and collate for himself.

But the effort is rewarded. Not only the statistical virtues of industry and ingenuity have gone to the making of this study, but resource and imagination in explanation, and its contribution must be taken into account by students of economic growth.

E. H. PHELPS BROWN

London School of Economics.

Economic Change in America. Readings in the economic history of the United States. Edited by J. T. LAMBIE and R. V. CLEMENCE. (Harrisburg, Pennsylvania : The Stackpole Company, 1954. Pp. iii + 599. $5.75.)

AMERICAN college education is diffuse by English standards. Undergraduates are expected to pursue from three to five subjects of study at the same time, and to master some portion of each well enough each term to be examined on it. Because of these several claims upon attention, the time available for each subject is too brief to permit much reading from original sources. Instead, text-books are used as convenient summaries of the various fields of knowledge. Since at their best such books are relatively bloodless, good teachers ask their students to read also bits that are juicier. But, time being short, these bits must be well selected and readily accessible. Hence it is common, particularly in courses of political or economic history, to supplement the text-book by a volume of selected readings.

In the usual pattern such a book of readings consists of a large number of brief extracts from the source materials of history. There is, however, no standard pattern of subjects. Among the materials commonly used are: the most important parts of documents (such as statutes or judicial decisions which recorded significant acts or policies); extracts from narratives of important historical events by participants therein; extracts from letters, diaries, biographies and the like, selected to illuminate the motives and attitudes of important persons; extracts from polemical writing, selected to present vividly the controversies from which decisions emerged; picturesque contemporary descriptions of the physical, ideological, technological or cultural background of events. However valuable such readings may be when studied with a text-book and under a teacher's guidance, they are usually too disconnected to stand alone and too brief to be satisfactorily substituted for the original sources.

The readings included in *Economic Change in America* reflect

a different principle of selection. Instead of many relatively short excerpts, there are thirty-seven readings averaging sixteen pages each. Instead of historical documents, there are contemporary essays, only two of which were originally published before 1939. Each essay is a complete or nearly complete reprint of an article from a professional journal or a chapter from a scholarly book not written as a text. The purpose of the compilation is to introduce the student to some of the best recent American writing in the field of economic history. The selections are suitable to serve this purpose for English readers as well as American undergraduates.

The organisation of the book suffers from its design as companion to a text-book. Most of the essays are grouped under headings that reflect conventional segments of an American college course—transportation, industrial organisation, technology and manufacturing, land and natural resources, agriculture, banking and finance, labor and population, the state and the economy. However, the readings fit these titles very loosely; there is no effort to cover the various segments in a uniform way; and some important subjects, such as the development of the tax policies of the United States, are not touched. The book is all the better for these formal faults. The editors have preferred vitality to completeness, and have included only essays that had something to say and said it well.

One group of essays, not all placed under the same heading, provides evaluations of concepts used in historical writing—for example, two papers on economic growth by Joseph Schumpeter and one on the economic historian's concept of agricultural revolution, by Earl D. Ross and Robert L. Tontz. Other papers analyse the influence of particular forces upon historical change—for example, an essay on invention as a factor in economic history, by S. C. Gilfillan. Still others summarise important segments of history (for example, a paper on the exploitation of the public domain, by R. M. Robbins) or discuss the validity of well-known interpretations of historical trends (for example, an analysis by F. A. Shannon of the evidence bearing upon the theory that western free land provided a safety-valve for industrial labour). The book as a whole is a well-chosen compendium of American essays in economic history. Its quality is such as to merit the attention of English readers.

CORWIN D. EDWARDS

University of Virginia.

Railroad Leaders, 1845–1890. By THOMAS C. COCHRAN. (Cambridge, Mass: Harvard University Press (London: Geoffrey Cumberlege), 1953. Pp. ix + 564. 3 Maps. 60*s*.)

THE key to this book lies not in its title, which might lead one to suppose that it is a collection of biographical essays, but in the sub-title, *The Business Mind in Action*. Professor Cochran's concern has been to sort out from the 100,000 letters which constituted his raw research material those statements which reflect the ideas and policies of these sixty-one railroad men on such subjects as techniques of management, finance, competition, innovation, labour and government control.

The definition of entrepreneur followed in this study is that of Professor Arthur H. Cole—"those responsible for the inauguration, maintenance, or direction of a profit-oriented enterprise." One of the significant facts brought out is that innovation as such was of little interest to this group, although the expansion of the railroad network was of fundamental and continuing concern. The author also introduces a new distinction between professional executives, whom he calls "entrepreneurs," and men such as John Murray Forbes, who typically occupied directorships rather than executive positions and who were interested in more than one railroad. This latter group the author terms "general entrepreneurs." While the differentiation is useful historically, this particular terminology does not seem to be meaningful from an economic point of view.

The concept of social rôle formulated by Professor Leland H. Jenks as "an understanding shared more or less fully by members of a group as to what a given position entails for any individuals who occupy it" is also fundamental to this work. However, as the author points out, it is not necessary for the reader to accept this hypothesis. Indeed, the uniformity of opinion which these men express could readily be accounted for by the similarity of their background rather than by the similarity of their business positions. With few exceptions, these men all came from the North-east, particularly from New England. Omitting two men of American stock born in France, only four were foreign born, two in England, one in Ireland and one (Henry Villard) in Bavaria. Nor are any Southerners included. The railroads whose letter files have been available to Professor Cochran also form a homogeneous group. Except for the Northern Pacific, which in its early days was under New England influence, and the Norfolk and Western, which was under English, these railroads

are all old roads, dating from before the Civil War, and each had strong connections with the eastern money markets and those eastern financiers, "general entrepreneurs," who went into railroading after previous experience in merchant finance. The mavericks, whether men or railroads, are not represented here.

In spite of limitations of scope, students of American corporation history and of railroads in particular will find this book most valuable. Since railroads were the earliest of the big American corporations, and since it is the early period of railroad history which is covered, one is able to see here evolution and hardening of corporate policy. There was, for example, a definite change in the attitude towards a railroad executive's investment in concerns, such as land companies or iron companies, having business dealings with railroads. Such practices were usual at the beginning of this period, but by 1890 they were beginning to be frowned on. (Links of this sort were specifically forbidden by many English railroad incorporation acts of the 1840s.)

On one point of great contemporary interest, the shift in power from the board of directors to the professional executives, these sources have yielded little evidence. The author concludes that this phase of development was delayed by "the traditional language and employee rôles carried over from proprietary ventures, by the presence of powerful general entrepreneurs on the board, and by the perpetuation of the general entrepreneurial power through investment bankers" (p. 77).

The composite picture of railroad executives' economic attitudes which emerges seems remarkably anticipatory of those of modern American corporation executives (at least of the pre-Second World War generations). Prices of those factors which railroads buy are properly determined by supply and demand, but competition is a bad thing for railroads. (Some of the weaker roads did, of course, cut rates, but the older, better-established roads considered here hesitated to inaugurate such policies and attempted to restrict competition to the race to occupy new territory and thus to secure a monopoly position.) Responsibility is felt to provide stockholders with a steady, reasonable dividend, but surplus earnings are ploughed back. Labour must neither be paid starvation wages nor denied certain amenities, but trade unions are universally opposed, since they seek to usurp the functions properly belonging to management.

DOROTHY ADLER

Cambridge.

Western Enterprise in Far Eastern Economic Development. By G. C. ALLEN and AUDREY G. DONNITHORNE. (London: Allen & Unwin, 1954. Pp. 292. 20*s*.)

Introduction to the Economic History of China. By E. STUART KIRBY. (London: Allen & Unwin, 1954. Pp. 202. 18*s*.)

THE first volume under review is a factual history of western business undertakings in China and Japan during roughly the last hundred years, and should be of great interest to students of economic development as well as to Far Eastern historians, since there is a striking divergence in the impact of Western enterprise on the two countries. The authors modestly claim to offer no more than some of the raw material needed for an explanation of this divergence. The contrasting social structures obviously constitute an indispensable ingredient of such an explanation, although the opinion may be hazarded that there has been a tendency to exaggerate some of the institutional differences, for instance with respect to the presence or absence or comparative degree of familism amd bureaucratism in the two countries. The invocation of a Japanese capacity and a presumed Chinese incapacity for entrepreneurship merely pushes the explicandum one stage farther back, since overseas Chinese have not been backward in either industry or commerce. Furthermore, as the authors indicate, Western business continued to occupy a dominating position in Chinese foreign trade and banking right down to the thirties, long after they had ceased to do so in Japan and despite the fact that the Chinese in China had already displayed marked entrepreneurial ability in these fields. There are grounds for holding that the variations in response were dependent on differences in the external impacts as well as in the environments on which they were exerted; this view gains support from the chapter on Japan in Herbert Feis' *Europe The World's Banker*, and would call for giving British long-run diplomacy in the Far East more emphasis than it has generally received in this connection. Another factor to be taken into account is that the penalty of being first may be paid by the object as well as the subject of innovation; at any rate, it is a matter of historical record that Japan learned its lesson from China's experience in the matter of the opium trade.

The last chapter of the book, "Summary and Conclusions," inevitably covers controversial ground. Remer's classical description of the Chinese Government as an indemnity-paying rather than a capital-importing institution is a vital addendum to the

discussion of the scope of past Western investment in China on p. 244. Similarly, both D. K. Lieu, writing in the same essay as that cited by the authors on p. 246, and G. E. Hubbard assess the effects of Western enterprise on Chinese labour conditions much less favourably than they do. The violent Japanese response to China (p. 249) would appear to be post-dated in the light of the Sino–Japanese War of 1894–95 and of the Twenty-one Demands of 1915. And while it may be true that it is now official Japanese policy to attract foreign capital (p. 251), it would be rash to anticipate any substantial inflow even if this policy is maintained, since the main source of private foreign investment is the United States, and since American post-war private outflows have been concentrated in direct investments primarily in the Western Hemisphere and in the exploitation of petroleum, in which Japan is notably deficient.

There are a few errors of fact and some omissions, though the latter must, of course, involve questions of judgment. Contrary to the impression one may derive from p. 22, opium became the chief Chinese import in 1823 and remained so for over fifty years; no mention is made of the part played by opium in the rise of the house of Jardine Matheson on p. 34; T. V. Soong was *not* Minister of Finance either at the time of the currency reform of 1935 or in 1937 (p. 119); and the account of the mixed aviation companies operating in China (p. 144) does not include the Hami-Ata or the Chennault lines. In spite of room for considerable differences of opinion, interpretation and emphasis, this book is a handy survey of a fascinating historical field.

Of the second volume under review the less said the better. Apart from anything else, it is marred by elementary errors of fact. To cite but a few examples from an *embarras de richesses*, Europe's first modern knowledge of China is said to have come from the Jesuit missionaries of the *eighteenth* century (p. 18). Hegel's picture of China in the *Philosophy of History* may have been romantic, but is anything but "idealised" (*ibid.*). Chu Hsi is usually considered to have been the creator of the most brilliant and comprehensive neo-Confucianist philosophical synthesis; and yet the Sung period in which he lived is described as having "produced no deep or systematic philosophies or political conceptions" (p. 152). The Taiping Rebellion is grossly misdated (p. 181), an error comparable only to a misdating of the Civil War in a work on British economic history. The same subject moves the author to make the remarkable revelation that "*current* studies significantly bring out the profound influence of

Christianity . . . in the Taiping movement" (p. 163, italics mine). Perhaps the most charitable explanation is that China is an exotic *terra incognita* to non-specialists. Unfortunately, there is still no introduction to or survey of Chinese economic history in the English language, or for that matter in French or German.

S. ADLER

Department of Applied Economics,
Cambridge.

Economic Stability in New Zealand. Edited by R. S. PARKER. (Wellington: New Zealand Institute of Public Administration, 1953. Pp. 146. 13*s.* 6*d.*)

THIS small volume contains a set of essays on a common theme, "Economic Stability," first delivered as addresses at a Convention of the New Zealand Institute of Public Administration in May 1953. The Convention attracted representatives from government, banking and business, as well as from universities. The editor, R. S. Parker, in an introduction draws the papers together and provides a résumé of the discussion.

The first chapter entitled "The Making of Economic Policy" is contributed by L. C. Webb, who writes both as public administrator and economist. The section on the machinery of policy-making stands out particularly in this informed and realistic contribution. Mr. Webb stresses that stability is only one objective which will almost certainly clash with other important objectives when these are pursued simultaneously. In reading the historical account of New Zealand policy one senses that it has often been regarded as "the" objective and that there is even the hint of a desire for controls for controls' sake. Recently New Zealand has enjoyed great prosperity, and it would be easy for the critic to be rebuffed with the comment that the control system has done the trick. But is it not possible that under more flexible controls New Zealand might have done better? One feels that the all-out quest for stability may have impaired the attainment of an adequate allocation of resources, as suggested by the following quotation:

> "It was asserted that farm production today was hampered not so much by a lack of price incentive as by an inadequate supply of labour, housing for labour, equipment and first-class land" (p. 7).

The incompatibility of growth and stability is the subject chosen by Professor H. Belshaw in a very entertaining, though

somewhat uneven, paper. This is followed by chapters in which stability is examined in relation to particular problems: agriculture, price and wage policy, balance of payments and monetary policy. The contributors are M. J. Moriarty, H. G. Lang, G. J. Schmitt and Professor C. G. F. Simkin. The volume is concluded with an essay on "Social Accounting and Economic Policy" by G. E. F. Wood, the Government Statistician, who indicates the coverage and breakdown of the New Zealand accounts and current efforts directed towards their improvement.

This book provides a useful brief account of the special economic characteristics of New Zealand and of the administrative measures adopted to achieve stability together with instructive critical comments on the working of controls and the scope for improvement. What is hard to discover is the extent to which the controls serve as a co-ordinated mechanism for the attainment of a number of objectives of varying degrees of priority.

In the chapter on Monetary Policy Professor Simkin has some interesting suggestions for insulating the New Zealand economy from the full impact of external forces by means of multiple exchange rates. His proposals (which warrant more extensive treatment than they receive) recall a comment of Mr. Webb that "as far as New Zealand is concerned, economic stability has meant economic nationalism" (p. 15). Is New Zealand so unimportant *vis-à-vis* the rest of the world that it could, in implementing a multiple exchange-rate system, afford to neglect conjectural variations?

Another quotation from Mr. Webb's essay deserves comment:

> "It seems to me that the relationship between economic science and policy-making in New Zealand is unsatisfactory and that it will not be improved merely by getting more and better economists into the public service. The root of the trouble lies in the fact that hitherto public service and academic economists have lived in separate worlds" (p. 30).

The Convention must be commended as a move in the direction of remedying this last defect.

The reviewer finds himself in close agreement with Mr. Webb's statement. It is not irrelevant to record that of the several Commissions set up recently to examine economic subjects such as taxation, not one has had an economist as member. How different from the situation in the United Kingdom! The economist is trained to look at a problem globally, and it is from this aspect that New Zealand's control system seems to require

closer examination. The creation of a Cabinet Economic Committee seems a sound move, but is this enough?

One suggestion of a positive character may be offered. Possibly New Zealand could emulate the United Kingdom by absorbing young academic economists into the Economic Section of the Treasury for short periods of one to two years (*vide* ECONOMIC JOURNAL, December 1953, p. 932). As a reverse process university grants might be made to public service economists to enable them to undertake specific research projects and keep abreast of developments in economic thinking.

MALCOLM R. FISHER

Cambridge.

The Metropolitan Organisation of British Colonial Trade. By KATHLEEN M. STAHL. With a Preface by Margery Perham. (London: Faber & Faber, 1951. Pp. xv + 313. 25*s*.)

IN the words of Miss Perham, this book " . . . is not an economic analysis, but a preliminary chapter upon economic organisation . . . " It lists the most important merchant firms in the British West Indies, in Malaya, Ceylon and British East Africa, describes their activities and reviews briefly the history of some of the leading firms. In one or two instances, the historical description illustrates the adaptability of the merchants to changed conditions. These are topics of much interest, especially in view of the part played by the merchants in promoting economic growth. The book embodies the results of much work, and throughout the author tries to be fair to those whose activities and interests she reviews. Regarded only as " a preliminary chapter upon economic organisation " it is valuable and useful.

When the treatment goes beyond compilation there are, however, defects and omissions. Referring to Malaya, the author states (p. 67) that before 1942 there was hardly any contact between the merchants and the Colonial Office; and (p. 297) that the interests of the rubber industry have not been upheld adequately in the political sphere. This overlooks the almost constant contact in the inter-war period between the agency houses and the mining groups on the one hand and the Colonial Office on the other. The establishment and operation of the statutory restriction schemes would not have been possible without this. The chairman of both the International Rubber Regulation Committee and of the International Tin Regulation Committee was an official. The key part of the agency houses

in the establishment and shaping of the two rubber restriction schemes is also overlooked.

There is an extended discussion of the Uganda cotton industry but no reference to the Lint Marketing Board, which controls all exports, or to the system of licensing and the granting of zonal monopolies to buyers *and* ginners which has resulted in the creation of large capital values for the right to gin (on p. 276 these capital values are incorrectly ascribed to war-time conditions). On p. 285 the author refers to the establishment of " a measure of order in the chaotic collecting and marketing conditions, through marketing schemes and the issue of a limited number of government licences to approved dealers and processors . . . by 1939 the worst abuses had gone and the native produce trade had been generally improved." This is an infelicitous way of describing a system under which the cultivator is denied alternatives and is closely tied to buyers with monopoly rights of purchase.

Throughout the book, remarks on such matters as the role of intermediaries, the operation of markets, the prices of different grades reflect uncritical acceptance of rather simple and popular views. " The finest qualities of arabica, like the finest teas, are always insufficient to meet the demand and can always command their price." After stating on p. 203 that Japanese textiles conquered the East African market because they were " both good and incredibly cheap," the author regards (p. 204) the free entry of these as anomalous and undesirable.

Miss Perham's Preface on the role of the merchants is notable for its range and sweep through time and space. It is, however, a pity that she contrasts in rather simple terms the interests of the local population with those of the merchants. In fact, the economic interest of the local population *vis-à-vis* the merchants is by no means homogeneous. Quite often the economic relationship between the merchants and the mass of producers, consumers and petty traders is complementary (in the technical sense of the term), while that between the merchants and some of the larger local traders may be competitive. The concepts of similarity or divergence of interest between different groups are complex, and cannot be discussed simply in economic terms. But the suggestion is misleading of a clear-cut opposition of interest between the foreign merchants and the local population.

P. T. BAUER

Gonville and Caius College,
Cambridge.

Sir William Petty. Portrait of a Genius. By E. STRAUSS. (London: Bodley Head, 1954. Pp. 260. 25*s*.)

"GENIUS" is a word to be used sparingly. That Petty was a significant figure in the history of seventeenth-century England, that he was versatile, entertaining and uncommonly talented, need not be doubted. He deserves a biography, and Mr. Strauss's study, which fills in a number of gaps in our knowledge, will be read with interest by students of the origins of modern science, natural and social. One has the impression, nevertheless, that the attempt to portray Petty as a genius has resulted in some misdirection of effort. Why is Petty worth studying? If one were to accept the author's suggestion in his Preface, one might answer: "Because he was a 'social thinker' who applied certain intellectual principles to the facts of economic and social life." This would not be wholly untrue: several of Petty's works certainly deserve the careful attention of an age much concerned with sociology and social accounting. Yet perhaps because (as Mr. Strauss says later) "In spite of his substantial literary output, Petty was, above all, a man of affairs and not a scholar" it not unnaturally takes his biographer a long time to get to grips with Petty's intellectual and scientific contribution. The first two-thirds of the book is concerned with his life as "a man of affairs." It is not dull, drawing as it does on John Aubrey, on Petty's own vivid comments and including the diverting if not elevating account of his Irish adventures and speculations. But there is, here as elsewhere, too much general history, not all of it relevant to the subject. One suspects an unresolved incompatibility here, and it is not dispelled by a concluding sentence in which Mr. Strauss claims for Petty a "compelling force of vision" which transformed him from a mere man of affairs into a pioneer of social science. It is not only that this seems to contradict his earlier assessment of Petty's character. Throughout the book there is constant evidence that Petty was the victim of undoubted contradictions and shortcomings in his own make-up. As a scientist and pure mathematician he was not outstanding. As a man of affairs he was successful up to a point, but beset thereafter by losses and failures arising from his methods of business. He lacked, one feels, not only political sense but any true sense of the way people and things behave. Even as an economist, his originality is here overrated. The importance of "productive labour" in the national economy was perceived by a number of earlier thinkers.

Yet in spite of such points which provoke disagreement, this is a book well worth reading. The concluding chapters on Petty's economic and social ideas are thoughtful and imaginative. His grasp of quantitative measurement as a key to the knowledge of social facts, his use of statistical data, his assessment of the central importance of population and its relationship to the later theory of labour value—all these points are well brought out, and one wishes they had been treated at greater length. Nor does Mr. Strauss allow his admiration for Petty to lead him into error. He is for the most part judicious in his detailed analysis of Petty's ideas and fair to those who collaborated—not always happily—with him. These, and other, failures in human relations are to some extent explained by the mechanical and static character of his observations. This helps to explain also his own constant sense of frustration. Even more than most men, he somehow could never bring himself to accept the caprice of real life and the inconvenient complexity of real society. Perhaps he was an early sufferer from an affliction to which those who normally handle scientific material are prone when they come to handle human beings. Yet he was not unimaginative, and his pen was vivid with the rich and natural imagery of his time. He remains one of the most fascinating figures in John Aubrey's portrait gallery: yet one suspects that his fascination lies less in his originality or genius than in the fact that he embodies so much that was typical of that confused, turbulent and Janus-headed century.

C. H. WILSON

Jesus College,
Cambridge.

NOTES AND MEMORANDA

KEYNES AND SUPPLY FUNCTIONS

MR. DE JONG'S article on *Supply Functions in Keynesian Economics* in the ECONOMIC JOURNAL for March 1954 is concerned with the interpretation of the passage in Chapter 3 of Keynes's *General Theory* dealing with Effective Demand. In that chapter are to be found an Aggregate Supply Function, Z, and an Aggregate Demand Function, D. But they are both functions of the numbers employed, N, and the condition $Z = D$ means no more than that the numbers employed are such that supply is equal to effective demand. Economists look for a pair of functions the mutual reactions of which will reflect the underlying economic determinants. But for Keynes effective demand is the single determinant. As Mr. de Jong puts it (p. 4), "real national income—and therefore employment—seems to be determined by a one-sided demand theory: thus by something *à la* von Böhm-Bawerk."

"Effective demand" is defined by Keynes not as actual demand, but as the entrepreneurs' *expectation* of proceeds of sale of their products. The Aggregate Demand Function, $D = f(N)$, is "the proceeds which entrepreneurs expect to receive from the employment of N men, and is composed of D_1, the amount which the community is expected to spend on consumption, and D_2, the amount which it is expected to devote to new investment."

The function, D, arrived at by adding together the "expectations" of many independent individuals is a very shadowy quantity. But Keynes did not leave his analysis in this rather indeterminate condition. He further elaborated the expectations which determine production in his fifth chapter, where he distinguished the short-term expectations of the manufacturer, concerned with the price he will get for his product, from the long-term expectations of the entrepreneur, concerned with the future returns from an addition to his capital equipment.

> "The behaviour of each individual firm in deciding its daily output will be determined by its *short-term expectations* —expectations as to the cost of output on various possible scales, and expectations as to the sale-proceeds of this output; though in the case of additions to capital equipment and even of sales to distributors, these short-term expectations will largely depend on the long-term (or medium-term) expectations of other parties." (*General Theory*, p. 47.)

If we are looking for a "supply function" we shall want to know on what grounds these expectations are based. And we learn that "the process of revision of short-term expectation is a gradual and continuous one, carried on largely in the light of realised results" (p. 50), and "producers' forecasts are more often gradually modified in the light of results than in anticipation of prospective changes" (p. 51).

A footnote (p. 51) explains that an accumulation of unsold stocks or a decline of forward orders would modify the inferences from "the mere statistics of the sale-proceeds of previous output." These indicators affect expectations before there is any actual change in prices. They are "realised results," the outcome of an actual decline of demand.

A function essentially expresses a relation to variables. Of what variables should supply be a function? When Keynes wrote (p. 30), "the propensity to consume and the rate of new investment determine between them the volume of employment," he dropped the term "expected." He was already translating "expectations" into "realised results." And throughout the book *actual* demand appears to be assumed to be the determinant of productive activity. New investment, it is true, depends on expectations, but on the expectations of the prospective users of the new capital equipment, not on those of the manufacturers and constructors.

Mr. de Jong is therefore right when he says that, according to Keynes, employment is "determined by a one-sided demand theory." Professor Patinkin proposed to modify the position by introducing a "desired-supply function," formed by aggregating the amounts which all the individual entrepreneurs would wish in the existing circumstances to supply.[1] The desired-supply function could differ from actual output, and therefore from actual demand. The difference, whenever it occurs, is a departure from equilibrium.[2]

But what is it that producers "desire"? Keynes said that they aim at maximising their profits, and Professor Patinkin, in introducing his supply curve, specified maximisation of profits as a part of its framework (p. 365). But in a later passage (p. 370) he identifies "the level of income at which suppliers are able to supply exactly what they desire" as "a full employment level of income."

Mr. de Jong proceeds to a demonstration that maximisation of profits by every individual firm does not necessarily make the

[1] ECONOMIC JOURNAL, September 1949, p. 365. [2] *Ibid.*, p. 367.

sum total of all expected profits a maximum (pp. 15–17). He might have found a shorter and more general proof: maximisation of the total of profits would not occur without a concerted limitation of supply.

In the case where industry is under-employed each producer may be supposed to desire above all to get sufficient orders to employ his plant up to capacity. With a view to getting additional orders, he will cut prices, but presumably not so far that his total profit will be diminished. So long as that is so, the maximisation of each producer's profit is not inconsistent with the determination of employment by actual demand.

Full employment of capital capacity, however, is not the same thing as full employment of labour, and Mr. de Jong points out (p. 7) that "there seems no reason why entrepreneurs should 'desire' self-evidently to engage all workers available at the prevailing wage rate." He proceeds to reinterpret Professor Patinkin's supply function by introducing the supply function of labour. The numbers desiring employment depend upon the wage offered, and may be expressed as a function of the real wage $\frac{w}{p}$, where w is the wage-level and p is the general price-level. The desires in Professor Patinkin's desired-supply function are thus made to include the desires of the worker as well as of the entrepreneurs. The entrepreneurs, in suiting their action to their desires, have to take account of the condition that the supply of labour, and consequently their output, will depend on the rate of wages they offer.

Keynes did not altogether reject the classical postulate which equated the wage-level to the marginal disutility of labour. When he said that the number employed cannot exceed that which reduces the real wage to the marginal disutility of labour (*General Theory*, p. 29), he was in effect defining full employment. He expressed the employment function (Chapter 20) in terms of wage-units, with the implication that a rise in wages relative to prices would mean diminished employment. But unemployment which is "due to the refusal or inability of a unit of labour, as a result of legislation or social practices or of combination for collective bargaining or of slow response to change or of mere human obstinacy, to accept a reward corresponding to the value of the product attributable to its marginal productivity," he regarded as "voluntary" (p. 6).

A rate of wages so fixed, if "voluntary," must be deemed to be in accordance with the desires of the individual wage-earner.

The supply of labour is the number willing to accept employment at this rate of wages. The disutility of labour depends upon the hours of work, and has very little direct relation to the rate of wages. Hours are decided by employers, subject to collective bargaining with their workpeople. In the long run prevalent valuations of leisure in comparison with money are no doubt reflected in the agreements regarding hours, but the individual would always desire to have employment at the established rate of wages of his occupation, and would commit himself to the established hours of work without considering the disutility of the marginal hour. Short-period changes in the supply of labour are usually imposed on workpeople by employers in the shape of overtime or short-time. A supply function of labour based on the disutility principle would seem to be quite unrealistic. Mr. de Jong contrasts the supply function thus adapted to take account of the *supply* function of labour, with the "familiar" supply function, based on the *demand* function of labour. The relation of prices to costs (and therefore to the wage level) determines what output entrepreneurs will expect to be profitable, and the output they decide upon determines the numbers they will employ. When full employment is reached, competition among employers for the limited supply of labour pushes up the wage-level till its relation to the price-level is consistent with the output at full employment.

How do these versions of a supply function fit into Keynes's analysis?

The relation of the wage-level to the price-level is implicit in Keynes's use of "wage-units" in his expressions of propensity to consume, national income, saving and investment. If wages are pushed up, the number of wage-units in the expected proceeds of output is diminished, and the excess of proceeds over costs shrinks. The expectations of proceeds are arrived at through expectations of sales and of prices, and the fall in proceeds in terms of wage-units merely reflects the rise of wages relative to prices. Keynes's supply function in terms of effective demand does not differ materially from the "familiar" supply function in terms of price.

Nevertheless, Keynes dispensed with the familiar supply function.

Professor Patinkin refers in a footnote (p. 363) to "the practice of considering inventory accumulation as purchases of the firm from itself." It is this practice which makes saving and investment identically equal. It was presupposed in the asser-

tion so positively made by Keynes in 1933 in *The Means to Prosperity* (p. 12): "For the nation as a whole, leaving on one side transactions with foreigners, its income is exactly equal to its expenditure (including in expenditure both consumption-expenditure and new capital-expenditure, but excluding intermediate exchanges from one hand to another); the two being simply different names for the same thing, my expenditure being your income." But when goods are sold *from stock*, the only income thereby generated is the seller's profit. The rest of the price represents the incomes of those who were engaged in producing the goods, incomes which had already accrued at or before the time when the goods were bought for stock. The purchase of the goods for stock is one of those "intermediate exchanges" which have to be excluded from "expenditure." Yet, if the dealer's purchases exceed his sales, the result is an addition to his capital assets, and Keynes included any such addition in "investment," and thereby deemed the goods to be purchased by the dealer on his own account.

But, if all the unsold goods in dealers' hands are thus deemed to be "sold," demand is identically equal to supply; and the formula which makes the equality of demand and supply depend on prices becomes nonsense. Keynes accordingly sought and found an alternative analysis.

Of the two components of demand, consumption and investment, investment depended on the rate of interest, and, investment once given, consumption was derived from it by the multiplier. A fall in the rate of interest would increase the demand for capital goods. There would follow an increased production of capital goods at increased prices, and the additional income thus generated would result in an increased demand for consumption goods. Increased demand means increased proceeds, partly increased production and partly higher prices required to elicit the increased production. In Keynes's analysis the increased demand is fundamental, and the rise of prices is no more than an incidental consequence. The increase in the national income is necessarily accompanied by an increase in active balances of money (Keynes's M_1), but the reduction of the rate of interest both determines the amount of investment and, in the process, provides the appropriate amount of money. Keynes attached special importance to the speculative motive, because it would interfere with the provision of the amount of money needed for full employment. If the decline in the rate of interest required to keep pace with a falling marginal efficiency of capital led people to accumulate idle cash, instead of spending either on consumption or on investment, the movement towards full employment might be barred. "Circumstances may develop," Keynes wrote (p. 172), "*in which* even a large increase in the quantity of money may exert a comparatively small influence on the rate of interest."

He was there assuming that there was no institutional obstacle to an indefinite increase in the supply of money. And in a later chapter he speculated on the possibility of zero interest and a euthanasia of the rentier.

A metallic standard would interpose an over-riding obstacle to a monetary expansion. The outstanding fault that Keynes saw in a metallic standard was in the desperate international competition for the limited supply of currency in order to maintain "investment." But this arose out of the limitation of the quantity of money, which, according to Keynes's theory, meant a limitation of that fall in the rate of interest which might be needed to maintain full employment.

A supply function and a demand function determine equilibrium at the point where output and demand become equal. Demand is equal to consumption, plus investment; output is equal to income, and income is equal to consumption, plus saving. If investment and saving are by definition equal, then output and demand are always equal, and their equality cannot determine an equilibrium point. The same system of definition, which excludes the classical explanation of the rate of interest as equalising saving and investment, also excludes the explanation of the price-level as equalising supply and demand.

There was no room in Keynes's analysis for functions representing either of these explanations. Yet, of course, he recognised the assumptions underlying them. He recognised that the marginal efficiency of capital and the rate of interest tended to equality. And he recognised that supply is determined by the expected excess of proceeds over costs, and so by the relation of prices to wages. But he made this determination of supply subordinate to the primary factors of his analysis: the rate of interest, investment, the multiplier, the propensity to consume.

It is possible to supplement this analysis with an account of the process by which an expanding or contracting volume of investment affects prices, and prices effect productive activity and output. The outcome would be a supply function adapted to Keynes's assumptions, but it would be subsidiary to the main analysis and not essential to it.

R. G. HAWTREY

London.

KEYNES AND SUPPLY FUNCTIONS: A REJOINDER

THE only point where Mr. Hawtrey seems to be attacking my argument directly has its kernel in the following sentence (see the third paragraph from the end of his Reply):

> "If investment and saving are by definition equal, then output and demand are always equal, and their equality cannot determine an equilibrium point. The same system of definition, which excludes the classical explanation of the rate of interest as equalising saving and investment, also excludes the explanation of the price level as equalising supply and demand."

This argument is directed, first, against the statement made on p. 4 of my paper that the equation

$$S_r = I_r \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (1.4)$$

represents a necessary and sufficient equilibrium condition.

Secondly, in the generalised model of p. 20, the equation $S = I$ is implied in

$$D = Y \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6.3)$$

which is also taken as an equilibrium condition.

This can be seen from Fig. 1 on p. 4, where the 45°-line can be taken to represent *disposable income* from which derives consumption plus saving. The D_r-curve represents *earned income*, which is the same as the entrepreneurs' proceeds from their selling consumption and investment goods. Thus, within one and the same period, it holds good that:

disposable income = consumption + saving
consumption + investment = earned income

Income is determined in a unique way only *if* disposable income equals earned income, that is, *if* saving equals investment—*i.e.*, *if* a situation of monetary equilibrium prevails (see p. 17 of my article). Paraphrasing J. G. Koopmans,[1] I define monetary equilibrium as a situation where the time rate of demand for money equals the time rate of creation (supply) of money; in other words, this is a situation where the *excess* demand for money is equal to zero. The excess demand for all goods (as opposed to money) in terms of money will then also be zero so that, for one and the same period, disposable income equals earned income. This is the situation which Say had in mind when he stated his famous "law" of supply creating its own demand. However, since Say thought that this would *always* be the case, his "law" had the

[1] J. G. Koopmans, "Zum Problem des neutralen Geldes," in the volume *Beiträge zur Geldtheorie*, F. A. von Hayek *ed.*, Vienna 1933, pp. 211-359, esp. p. 278.

character of an identity [1] (demand for money *identically* equal to creation of money), whereas in the Keynesian strain of thought effective demand is determined by the equality of D and Y, which will, however, *only* be existent under *certain* values of the variables of the model. This means that the equation $D = Y$ is here taken as an equilibrium condition and therefore as a "common" equation (*i.e.*, not as an identity).

Summarising, and taking "monetary equilibrium" in the Koopmansian way, we can state that Say thought that a situation of monetary equilibrium would always prevail by definition; Keynes, on the other hand, regarded monetary equilibrium as an equilibrium condition determining effective demand and, thereby, national income. This equilibrium condition can be written as $S = I$ (not, of course, as $S \equiv I$).[2]

Mr. Hawtrey's point is that we should write $S \equiv I$. It cannot be denied that there is indeed room for this vision in Keynes's book (see, for instance, p. 63 of the *General Theory*); this vision can even be supported by Lerner's 1936 article which met with Keynes's own approval. Is not Mr. Hawtrey's vision inconsistent with my exposition as given above?

The way out of this difficulty passes along the contradistinction of *ex ante* and *ex post* concepts. Myrdal, who is the *auctor intellectualis* of these concepts,[3] defines *ex post* savings and investments as "actually realised" savings and investments, as they can be registered in national book-keeping; *ex post*, savings must always of necessity equal investments, since in their *ex post* meaning, saving and investment involve also unintentional components.[4] Taking the concepts *ex ante*, we are concerned with the subjects' saving and investment *plans* based on their anticipations. Myrdal writes: "Had this distinction been kept in mind, much confusion about 'saving and investment' would have been avoided." This seems to me to be quite true. The argument of Mr. Hawtrey is entirely *ex post*, and only then does it hold good that $S \equiv I$.

But *ex post* concepts are not suitable for explaining how equilibrium is brought about. If Keynes's theory is to be taken as an

[1] See the illuminating articles by Don Patinkin in *Econometrica* for 1948 (pp. 135-54), 1949 (pp. 1-27), and 1951 (pp. 134-51), and the concluding paper by K. Brunner, *ibid.*, 1951 (pp. 152-73).

[2] One of the inconsistencies of the classical model was that Say's Law was taken as an identity whereas $S \equiv I$ was *not* regarded as an identity but as an *equality* governed by the rate of interest.

[3] G. Myrdal, *Monetary Equilibrium*, London, etc., 1939, pp. 45-7 (originally published in Swedish in the *Ekonomisk Tidsskrift* for 1931).

[4] See also J. Tinbergen, *The Dynamics of Business Cycles*, Chicago, 1950, p. 162 (adapted from the Dutch original, 1942, by J. J. Polak).

equilibrium theory, the kernel of his argument must necessarily be taken *ex ante* lest his theory should fail to determine an equilibrium position. Although Keynes is not very lucid as to the contradistinction between *ex ante* and *ex post* concepts, a hint in the *ex ante* direction may be found on p. 64 of the *General Theory*: "The *decisions* to consume and the *decisions* to invest between them determine incomes." (Italics added.) Thus, national income is not determined by realised savings and investments, but by decisions to save and invest, *i.e.*, by *intended* S and I only, *i.e.*, finally, by *ex ante* S and I, where $S = I$ plays the part of an equilibrium condition and is therefore a "common" equation.

F. J. DE JONG

The State University of Groningen,
The Netherlands.

MR. CLOWER ON PRODUCTIVITY THRIFT AND THE RATE OF INTEREST

IN my experience, theories of interest which embrace "both stock and flow aspects of the problem" are either too difficult for my understanding or achieve due simplicity only at the cost of some glaring inadequacy. Mr. Clower's theory, as expounded in the ECONOMIC JOURNAL of March 1954, falls into the latter category.

For what he does is to have a flow-demand curve for bonds (see his Fig. 2 (*b*) on p. 110) which relates solely to the demand for bonds by the issuers (*i.e.*, for redemption) and takes no account of the purchase of bonds by investors out of income. Thus his flow curves, both of demand and of supply, reflect considerations of productivity, but neither reflects considerations of thrift. Nor is the deficiency made good in the argument which follows, for despite his obscure reference to thrift on p. 111, he thereafter proceeds to consider the nature of equilibrium in a bond market in which there is again no place for current purchases of bonds out of income.

BRIAN TEW

University of Nottingham.

REJOINDER

PROFESSOR TEW'S comment deals with a point the clarity of which I took for granted, but which may have been obscure to some readers of my article.

In the case of an ordinary commodity, say bread, market flow demand is roughly the same thing as the sum of individual flow demands for bread to eat. But the investor in bonds does not normally eat or otherwise consume his purchases. Hence, the acquisition of a bond out of current income, while it may be regarded as a flow demand from an *individual* point of view, is not a part of *market* flow demand (*i.e.*, it does not decrease the level of existing bond stocks) unless the purchaser destroys (retires) the bond. Similarly, the sale of a bond by an individual is not a part of *market* flow supply (*i.e.*, it does not increase the level of existing bond stocks) unless the bond is a *new issue*.

Now thrift is practised by bond *holders*, while my flow demand and supply curves depend directly only upon the behaviour of bond *issuers*. Thus it is true that my " . . . flow curves . . . reflect considerations of productivity, but neither reflects considerations of thrift." However, the analysis is not deficient on this account; for my *stock* demand curve depends directly upon the behaviour of bond holders, whose ranks will include both individuals who do and who do not make "current purchases of bonds out of income."

R. W. CLOWER

The State College of Washington,
Pullman.

THE INVESTMENT ALLOWANCE

THE investment allowance has been described as a tax-free gift to business-men and a careful distinction made between this allowance and the initial allowance, the latter being merely an advance of the allowance for depreciation.

The distinction therefore is that between a gift and a loan. Broadly, in order to qualify, the plant must be "new" in the strict sense of the word, *i.e.*, it must not be "second-hand." This is a new departure in principle, as there has never previously been such a stipulation to the granting of capital allowances.

In theory, one result would be to increase the demand for new machinery. To create such a possibility at a time when specialised industrial machinery is about the only commodity of any im-

portance still in short supply with, in many cases, the order books of the manufacturers filled for many years ahead, would appear at first sight to be rather odd, but on reflection it will be seen that this gift, which amounts to $\frac{9}{20} \times \frac{20}{100}$ or 9% of the cost, is hardly large enough to be the deciding factor when considering the purchase of a new or second-hand machine. It is rather difficult therefore to understand how the investment allowance will achieve its avowed objective of encouraging industrial re-equipment to improve competitive power in the export markets.

It is submitted that the incentive is not great enough to cause re-equipment which would not otherwise take place. It is true, of course, that the allowance might in itself be utilised to lower the price of a manufactured article abroad, but this would be negligible, and as the allowance is " once for all," would in any case be only temporary and is incidental to the object of re-equipment in order to increase efficiency and thereby increase competitive power in that way. When machinery is in short supply, the second-hand price equals or even exceeds the new price, and as long as such scarcity continues there is going to be an inequality between those who can re-equip now and those who have to wait. If Company A is therefore fortunate enough to be able to buy the new machine, whilst Company B has to make do with the purchase of a similar second-hand machine for which it has had to pay *at least* the same price, Company A is in a better position in so far as it has acquired a better machine at no higher cost than Company B has paid for an inferior machine.

Company B is unfortunate. It will be working at an economic disadvantage as compared with A, it is not B's fault that it cannot buy a new machine, therefore it would appear that B was the one deserving of some help, if help is to be given to anybody.

The conclusions appear to be that the allowance is hardly likely to be effective in its objective because of the inadequacy of its quantum in those cases where re-equipment can be carried out without delay. On the other hand, where the new equipment is in short supply, the economic disadvantage under which the B companies are working will be intensified.

Finally, is there not a possibility that should large-scale re-equipment be in fact achieved, this would actually have partially nullified its own objective by having increased the price of such equipment?

HAROLD HUDSON

Leeds.

CURRENT TOPICS

THE sad death of Sir Henry Clay in a road accident in Holland during July has deprived us of one of the most loved and respected of the older generation of economists. He had served on the Council of the Royal Economic Society since 1924, and his unobtrusive wisdom had been a support not only to the Society but to many other bodies concerned with economics and economic affairs. We shall hope to print a fuller obituary notice in a subsequent issue of this JOURNAL.

WE record with great regret the death in his eighty-fourth year of Mr. Seebohm Rowntree, for many years Chairman of Rowntree and Co., Ltd. His earlier studies of poverty in York and of the human needs of labour have become classics. He continued to the end of his busy life to find time for social studies, and within the past few years we have had from him, in collaboration with G. R. Lavers, further studies of life and leisure and of the effects on poverty of the Welfare State. We offer our most sincere sympathy to his family.

THE Report on the Teaching of Economics prepared, under Mr. C. W. Guillebaud's editorship, for the International Economic Association, and recorded in Current Topics of our March issue, has now been received. It contains detailed information about teaching methods and syllabuses in eleven countries. Copies are available to Fellows of the Royal Economic Society at the special price of 7*s*. on application to the Assistant Secretary, Royal Economic Society, 6 Humberstone Road, Cambridge.

THE Board of Trade has a number of bound copies of the *Reports on the Census of Production* for 1948 which may be lent to accredited research workers. Applications should be made to the Director of Statistics, Board of Trade, Horseguards Avenue, S.W.1.

Houblon-Norman Awards. The Trustees of the Houblon-Norman Fund invite applications for Fellowships or Grants in aid of Research into the working of industry and finance in Great

Britain and elsewhere and the economic conditions affecting them. Fellowships, which are intended for experienced research workers, are awarded for full-time research for one year, which may be renewed for a second year. Grants are awarded for either full-time or part-time work. The amount of the awards, which will take effect from October 1, 1955, will depend upon the circumstances of the candidate and the probable expenses of his work. Candidates must be British subjects normally resident in the United Kingdom. Forms of application, which may be obtained from the Secretary of the Fund, c/o the Bank of England, London, E.C.2, should be returned not later than March 31.

Leverhulme Research Awards. Application is invited for Fellowships and Grants in aid of research. These awards are intended for senior workers of established position and are limited to British-born subjects normally resident in the United Kingdom; in exceptional circumstances the Trustees may waive the condition as to residence. No subject of inquiry is excluded from consideration, but preference is given to subjects in which existing provision for research is inadequate. The duration of the awards does not normally extend over more than two years or less than three months, and the amount depends on the nature of the research and the circumstances of the applicant. Forms of application may be obtained from the Secretary, Miss M. Branney, Leverhulme Research Awards, St. Bridget's House, Bridewell Place, London, E.C.4. Applications must be received on or before December 31, 1954. Results will be announced in May, and the awards will normally date from September 1, 1955.

A NUMBER of distinguished American and Canadian economists are visiting the United Kingdom during the present academic year. At Cambridge are Professor J. B. Brebner as Pitt Professor, Professor W. Lloyd Warner as Visiting Professor of Social Theory and Institutions, and Professors L. Tarshis, J. S. Duesenberry, C. Christ, Scott Gordon, J. P. Miller, V. Smith and A. W. Currie. Professor D. McCord Wright is still at Oxford and Mr. L. R. Klein, formerly of the University of Michigan, has accepted a post at Oxford Institute of Statistics.

THE following have been admitted to life fellowship of the Society:

Byk, P. H. J.
Chenery, H. B.
Doyle, N. D.
Harrison, D.
Kirby, E. S.
Mieth, Dr. W.
Wright, Dr. K. M.

The following have been admitted to fellowship of the Society:

Abdel-Ghaffar, A. H.
Aldridge, P. C.
Banks, C. G.
Barnes, P. C.
Bartlett, D. D.
Beer, S.
Bevan, C. B.
Bonner, D. R.
Browning, P.
Bunn, T. A.
Buttle, L. A.
Catty, R. R.
Castro, A. A.
Chaturvedi, S. B.
Chen, M. J.
Chifrine, S. B. S.
Choubey, J. N.
Chown, J. F.
Choy, J.
Clarke, F. M.
Clayton, G.
Connolly, P.
Cooley, R. W.
Croucher, P. G.
Davidson, I.
Dearing, R. E.
Dhond, J. S.
Dixit, S. N.
Downing, A. J.
Eaglesom, J.
Earp, R. W.
Eyskens, G.
Fletcher, R. N.
Ghiara, B. M.
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Applied Statistics

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Economica

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The Review of Economic Studies

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Bulletin of the Oxford University Institute of Statistics

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Scottish Journal of Political Economy

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Yorkshire Bulletin of Economic and Social Research

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The Economic History Review

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The British Journal of Sociology

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The Sociological Review

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International Affairs

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The Political Quarterly

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Accounting Research

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The Banker

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Barclays Bank Review

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National Provincial Bank Review

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The Three Banks Review

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The Journal of the Institute of Transport

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Cartel

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Progress

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Statistical and Economic Review (the United Africa Company)

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The Canadian Journal of Economics and Political Science

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The Economic Record

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The South African Journal of Economics

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Union of South Africa Finance and Trade Review

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The Indian Journal of Economics

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The Indian Economic Journal

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VOL. 13, PART 3, MARCH 1954. *On Strongly Continuous Stochastic Processes*: E. LUKACS. *Analysis of the 1939 Model Sample Survey Results from the Viewpoint of Integral Geometry*: M. MASUYAMA. *Some Experiments with Different Types of Area Sampling for Winter Paddy, in Giridih, Bihar, 1945*: J. M. SENGUPTA. *Mathematical Note on Area Sampling*: M. MASUYAMA. *Agricultural Co-operation in U.P. and Rest of British India, 1918–19 to 1945–46*: M. CHAND and R. L. PANCHOLI. *On Selecting Random Numbers for Large-scale Sampling*: A. MATTHAI. *On the*

Punched Card Method in Smoothing for Age Bias in Census Returns : K. C. PODDER. *National Sample Survey No. 2 ; tables with notes on the second round.*

VOL. 13, PART 4, JUNE 1954. *A Theory of Estimation for the Fundamental Random Process and the Ornstein Uhlenbeck Process :* H. B. MANN. *On the Efficiency of the Least Square Estimates of Parameters in the Ornstein Uhlenbeck Process :* H. B. MANN and P. B. MORANDA. *On Some Characterizations of the Normal Distribution :* D. BASU and R. G. LAHA. *On the Optimum Character of Some Estimators Used in Multistage Sampling Problems :* D. BASU. *On the Confluent Hypergeometric Function* $M(\alpha, \gamma, \chi)$ *:* S. RUSHTON. *Tables of the Confluent Hypergeometric Function :* S. RUSHTON and E. D. LANG. *Estimation of National Consumption of the United Kingdom from Family Budget Studies :* M. MUKHERJEE. *An Adjustment for the Effect of Changing Birth Rates on Infant Mortality Rates :* K. K. MATHEN and S. J. POTI. *Seasonality in the Incidence of Strikes in the Bombay Textile Industry :* R. K. SOM.

Tata Quarterly

VOL. IX, NO. 3, JULY 1954. *Rationalisation in the Cotton Textile Industry. Economic and Financial Review April–June 1954.*

Social and Economic Studies

VOL. 3, NO. 2, SEPTEMBER 1954. *A Modern Jamaican Sugar Estate :* G. E. CUMPER. *Development of Internal Transport in Jamaica :* W. F. MAUNDER. *Characteristics of West Indian Political Parties :* M. AYEARST. *Begging in Kingston and Montego Bay :* G. E. SIMPSON. *The Banana in Jamaica : Export Trade :* A. HART.

International Labour Review

VOL. LXIX, NO. 6, JUNE 1954. *Population Growth, Socio-economic Development and Living Standards :* S. CHANDRASEKHAR. *Some Problems of Labour Inspection in Underdeveloped Countries :* T. GRAHAM. *The Basic Wage and Standard Hours Inquiry in Australia :* J. E. ISAAC.

VOL. LXX, NO. 1, JULY 1954. *Features of Post-war European Migration. Free Trade and Economic Prosperity :* F. MURO DE NADAL. *The Development of Labour Law in the Federal Republic of Germany since 1945 :* H. C. NIPPERDEY. *Women's Employment in India :* N. K. ADYANTHAYA.

VOL. LXX, NO. 2, AUGUST 1954. *Planning a Welfare State in Burma :* J. LLOYD. *The Development of Labour Law in the Federal Republic of Germany since 1945 : II :* H. C. NIPPERDEY. *Worker-Trainees : a Form of Technical Assistance :* M. THUDICHUM.

VOL. LXX, NO. 3–4, SEPTEMBER–OCTOBER 1954. *Léon Jouhaux, 1879–1954. The Thirty-Seventh Session of the International Labour Conference, Geneva, June 1954. The Improvement of Human Relations in the Undertaking. The Problem of Surplus Manpower in Europe :* A. OBLATH. *The Work of the Ford Foundation in India :* V. L. GOSWAMI.

International Financial Statistics

VOL. VII, NO. 7, JULY 1954. *Statistics for 58 Countries Covering Data Important to the Analysis of the International Payments Problem and the Problem of Inflation.*

VOL. VII, NO. 8, AUGUST 1954. *Interest Rates.*

VOL. VII, NO. 9, SEPTEMBER 1954. *Renewal of the European Payments Union.*

VOL. VII, NO. 10, OCTOBER 1954. *Statistics for 58 Countries Covering Data Important to the Analysis of the International Payments Problem and the Problem of Inflation.*

International Monetary Fund Staff Papers

VOL. IV, NO. 1, SEPTEMBER 1954. *Short-range Forecasting of U.S. Imports :* T. D. SWEENEY. *Stabilization of the Greek Economy and the 1953 Devaluation of the Drachma :* E. A. ELIADES. *Selective Credit Controls*

in Underdeveloped Economies : I. G. PATEL. *Recent Latin American Experience with Bilateral Trade and Payments Agreements :* J. H. C. DE LOOPER. *International Movements of Public Long-term Capital and Grants, 1946–50 :* M. L. WEINER and R. DALLA-CHIESA.

United Nations Economic Bulletin for Europe

VOL. 6, NO. 2, FIRST QUARTER 1954. *Developments in Trade between Eastern and Western Europe in 1953.*

International Journal of Agrarian Affairs

VOL. 1, NO. 6, JUNE 1954. *Economic Aspects of Mechanisation on Medium-sized Farms ; contributions by* A. W. ASHBY, D. K. BRITTON, H. NOILHAN, W. STUDER, G. KREHER and K. BLECHSTEIN.

Public Finance

VOL. IX, NO. 2, 1954. *The Improvement of Sales and Turnover Taxes :* G. SCHMÖLDERS. *Some Elements of the Theory Determining all Government Activity :* E. FOSSATI. *The Commission on Intergovernmental Relations and Grants-in-Aid in the United States :* H. D. HAMILTON. *Shifting of a Specific Excise Tax :* M. R. COLBERG. *Use of Tax Collections in Kind to Combat Inflation in the Republic of Korea :* H. P. WALD. *Some Comments on the Taxation of Personal Income and Expenditure in the United Kingdom :* D. WALKER.

Kyklos

VOL. VII, NO. 1–2, 1954. *Development and the Free Economy—Some Typical Dilemmas :* J. BASTER. *Zur Wirtschaftspolitik und Theorie der Englischen Klassiker :* K. SINGER. *La Banque des Règlements Internationaux et l'Union Européenne de Paiements :* R. AUBOIN. *The Changed Meaning of Self-interest :* W. ZAJDLIC. *Erberhard Gothein :* E. SALIN. *Les Difficultés du Fonds Monétaire International et Leurs Causes :* E. JAMES and LE THANK-KHOI. *International Aspects of the French Investment Program :* H. LUBELL. *Soziologie und Existientialismus :* V. WILLI.

Economia Internazionale

VOL. VII, NO. 2, MAY 1954. *Le curve di indifferenza " per una comunità " : analisi critica :* O. D'ALAURO. *Contribution à la construction d'une théorie de la distribution du revenu :* J. MARCHAL. *Un semplice modello econometrico relativo al sistema economico italiano, per il periodo 1948–1952 :* A. PREDETTI. *Some Considerations of Triangular Trade as Influenced by Retention Quota Arrangements : Part II :* U. SACCHETTI.

VOL. VII, NO. 3, AUGUST 1954. *A Suggestion for Simplifying the Theory of International Capital Movements :* H. W. ARNDT. *Problèmes monétaires internationaux d'aujourd'hui et de demain :* A. G. CANINA. *The Economics of Foreign Exchange Retention Schemes : I—Partial Devaluation Aspect :* S. C. TSIANG. *Some Problems Connected with the Establishment of a Common Market in Schuman Europe :* J. WEMELSFELDER.

The American Economic Review

VOL. XLIV, NO. 4, SEPTEMBER 1954. *A Model of Trade and Accumulation :* D. M. BENSUSAN-BUTT. *Germany's External Economic Position :* H. J. DERNBURG. *Dollar Pooling in the Sterling Area, 1939–52 :* K. M. WRIGHT. *Excise Tax Burdens and Benefits :* G. F. BREAK. *The Economics of a Fund Resource : Mining :* D. CARLISLE. *Degree of Progression : The Income Tax :* R. W. LINDHOLM.

The Annals of the American Academy of Political and Social Science

VOL. 294, JULY 1954. *America and a New Asia.*

VOL. 295, SEPTEMBER 1954. *America through Foreign Eyes.*

The Quarterly Journal of Economics

VOL. LXVIII, No. 3, AUGUST 1954. *Walras, Leontief, and the Interdependence of Economic Activities*: R. KUENNE. *Programs and Prognoses*: P. STREETEN. *The Pattern of Foreign Trade in Eastern Europe and its Relation to Economic Development Policy*: D. GRANICK. *Boisguilbert: a Neglected Precursor of Aggregate Demand Theorists*: S. L. MCDONALD. *The Coal Miners: A Study of Union Control*: B. KAREN and J. LONDON. *Bottleneck Phenomena and Cyclical Change: the Role of the Iron and Steel Industry*: H. W. BROUDE. *Multiple Products and Oligopoly Strategy: a Development of Chamberlin's Theory of Products*: R. F. LANZILLOTTI.

The Journal of Political Economy

VOL. LXII, No. 4, AUGUST 1954. *Richard Cantillon: First of the Moderns: I*: J. J. SPENGLER. *British Monopoly Policy: a Current Analysis*: J. A. HOWARD. *Increasing Returns in the Railway Industry*: G. H. BORTS. *Individual Choice in Voting and the Market*: J. M. BUCHANAN.

The Review of Economics and Statistics

VOL. XXXVI, No. 3, AUGUST 1954. *A Symposium on the Economic Report of the President and Related Documents: Introduction*: S. E. HARRIS; *Comments*: H. S. ELLIS, G. COLM, A. H. HANSEN and M. BRONFENBRENNER. *Afterthoughts on Paley*: COLIN CLARK; *Comment*: E. S. MASON. *The Structure of American Foreign Trade: a New View Examined*: P. T. ELLSWORTH. *Capital Shortage and Labour Surplus in the United States?*: B. C. SWERLING. *The Social Accounts of the Soviet Union in 1934*: F. SETON. *Capital–Output Ratios of Certain Industries: a Comparative Study of Certain Countries*: V. V. BHATT. *Cyclical and Secular Changes in State Per Capita Incomes, 1929–50*: F. A. HANNA.

Econometrica

VOL. 22, No. 3, JULY 1954. *Existence of an Equilibrium for a Competitive Economy*: K. J. ARROW and G. DEBREU. *An Application of Activity to the Theory of the Firm*: M. J. FARRELL. *A Note on Mr. Farrell's Model*: D. G. CHAMPERNOWNE. *Inventory Fluctuations in Flaxseed and Linseed Oil, 1926–1939*: S. G. ALLEN. *Price Determination in a Stock-flow Economy*: R. W. CLOWER. *Effects on Demand of Changes in the Distribution of Income; a Comment*: W. J. CORLETT; *a Reply*: K. BORCH. *Quasi-Inverses Associated with Minkowski–Leontief Matrices*: Y. K. WONG. *Stability of the Exchange Rate Mechanism in a Multi-Country System*: J. J. POLAK and T-C. LIU.

The Review of Economics and Statistics

VOL. XXXVI, No. 2, MAY 1954. *The Nature and Significance of Input–Output*: R. DORFMAN. *Real Wages in the Soviet Union, 1928–1952*: J. G. CHAPMAN. *Investment Criteria for Manufacturing Industries in Underdeveloped Countries*: K. A. BOHR. *German Terms of Trade by Commodity Classes and Areas*: C. P. KINDLEBERGER. *The Functional Distribution of Income in the United States, 1850–1952*: D. G. JOHNSON. *The Level of Inventive Activity*: J. SCHMOOKLER. *Proposals for Improving Income and Product Concepts*: J. MAYER. *Liquid Assets and the Consumption Function*: M. COHEN. *Prospects for Soviet Farm Output and Labor*: N. JASNY.

Industrial and Labor Relations Review

VOL. 7, No. 4, JULY 1954. *Recruiting Patterns and the Functioning of Labor Markets*: F. T. MALM. *Union Activity and Dual Loyalty*: L. R. DEAN. *Diversity of Time-study Practice*: S. BARKIN. *The "Closed Shop" Controversy in Post-war Britain*: J. T. MCKELVEY. *The Economics of Trade Union Organisation and Administration*: M. BERKOWITZ. *Labor Relations and Trade Unions in the Gold Coast*: R. B. DAVISON.

VOL. 8, No. 1, OCTOBER 1954. *Government Restrictions on Labor Mobility in Italy*: M. GARDNER CLARK. *Raiding among the "Legitimate" Unions*: J. KRISLOV. *Psychiatry in Industry*: T. BURLING. *When Stoppages are Prohibited*: J. V. SPIELMANS. *Social Integration, Attitudes, and Union Activity*: L. R. DEAN. *Wage-Productivity Comparisons*: J. BACKMAN. *Working Groups in a Plural Society*: C. SOFER. *An Appraisal of Labor Arbitration: A Management Viewpoint*: T. H. FERGUSON; *A Labour Viewpoint*: H. COOPER; *An Arbitrator's Viewpoint*: A. HORVITZ. *Newspaper Coverage of Labor-Management News*: *The Reporters' Point of View*: W. L. HODGES.

The Southern Economic Journal

VOL. XXI, No. 1, JULY 1954. *Inflation in an Export Economy*: W. HERENCHAK. *Deficits, Surpluses, and National Income*: J. G. GURLEY. *The Macro and Micro Aspects of the Wealth of Nations*: J. P. HENDERSON. *Resource Adjustments to Equate Productivities in Agriculture*: E. O. HEADY and C. B. BAKER. *The Federal Government and the Peanut Industry*: R. H. LEACH. *Wages and the Allocation of Employment*: A. L. GITLOW.

Harvard Business Review

VOL. 32, No. 4, JULY–AUGUST 1954. *Can We Avoid Depression in a Dynamic Economy?*: M. G. DE CHAZEAU. *The Top Executive—a Firsthand Profile*: R. M. WALD and R. A. DOTY. *A Business Look at the Army*: P. L. DAVIES. *Old-fashioned Initiative for Modern Enterprise*: A. PATTON. *Notes on Podsnappery*: F. M. OPPENHEIMER. *New Potentials of Materials Handling*: J. R. BRIGHT. *Control Means Action*: A. F. EMCH. *GE and UNIVAC—Harnessing the High-speed Computer*: R. F. OSBORN. *Trend to Fleet Leasing*: J. W. ROLLINS. *Why not try Co-operative Research?*: P. M. ARNOLD. *Dilemma of the Industrial Relations Director*: D. E. MCFARLAND.

Explorations in Entrepreneurial History

VOL. VI, No. 4, MAY 1954. *Kinship and Trade in Seventeenth Century New England*: B. BAILYN. *The Serf Entrepreneur in Russia*: H. ROSOVSKY. *Occupational Mobility and American Life: Some Historical Hypotheses*: R. GINGER.

Social Research

VOL. 21, No. 2, SUMMER 1954. *The Classical Theory of Economic Growth*: A. LOWE. *Republican Humanism*: H. M. JONES. *Central Economic Co-ordination in British Government*: R. W. TAYLOR. *Man's Self-Alienation in the Early Writings of Marx*: K. LÖWITH.

Journal of Farm Economics

VOL. XXXVI, No. 3, AUGUST 1954. *Political Strategy of Agriculture*: E. A. ENGELBERT. *Needed Adjustments in Farming*: R. P. CHRISTENSEN. *Proposed New Directions in World Agricultural Policy*: M. EZEKIEL. *Demand Analysis from the M.S.C. Consumer Panel*: G. C. QUACKENBUSH. *More Economical Cottonseed Oil Mills*: J. M. BREWSTER. *Journal of Farm Economics—First 35 Years*: C. J. ARNOLD and R. BARLOWE. *Interrelationships of Economic and Agronomic Concepts*: J. C. REDMAN and S. Q. ALLEN. *A Fertiliser Production Surface*: E. O. HEADY and J. PESEK. *Economic Rating of Soils for Tax Assessment*: A. R. AANDAHL, W. C. MURRAY and W. SCHOLTES. *Reclamation Under the Desert-Land Act*: K. S. LANDSTROM.

Economic Geography

VOL. 30, No. 3, JULY 1954. *Delimiting the CBD*: R. E. MURPHY and J. E. VANCE. *Sugar Production in North Queensland*: D. S. SIMONETT. *The Danube–Black Sea Canal and the Russian Control over the Danube*: N. SPULBER. *The Basic–Non-basic Concept of Urban Economic Func-*

tions : J. W. ALEXANDER. *Ogdensburg and the "Ogdensburg Gateway" : a Study in Geographic Situation :* R. B. JOHNSON.

VOL. 30, NO. 4, OCTOBER 1954. *The Growth of Pastoralism in Southland, New Zealand :* H. J. CRITCHFIELD. *A Comparative Study of Nine Central Business Districts :* R. E. MURPHY and J. E. VANCE. *Distribution of Population on Hispaniola :* D. R. DYER. *Some Functional Aspects of Cape Town :* P. SCOTT. *"Corn Belt" Cattle Feeding in Eastern Colorado's Irrigated Valleys :* D. A. HENDERSON.

Land Economics

VOL. XXX, NO. 3, AUGUST 1954. *Atomic Energy and Enterprise Economics :* A. BORNEMANN. *Development of the British Television Service :* R. H. COASE. *Accelerated Settlement and Development of Irrigation Projects :* C. E. STEWART, D. C. MYRICK, S. W. VOELKER and K. KRISTJANSON. *Economic and Regulatory Problems in the Broadcast Field :* H. H. GOLDIN and P. O. STEINER. *Development of a National Airport Plan :* J. C. D. BLAINE.

The Journal of Accountancy

VOL. 98, NO. 1, JULY 1954. *How Will Business Electronics Affect the Auditor's Work? :* J. PELEJ. *A Brief Guide for Preparing Good Audit Work Papers :* R. S. JOHNS. *A County Controller Reviews his First Two Years in Office :* T. P. STRUNCK. *The Process of Developing Accepted Accounting Methods :* J. W. QUEENAN. *The Controller's Function in Top Level Management :* G. A. WELSCH. *A Review of the Proposed New Internal Revenue Code :* B. HARROW. *The Role of the Accountant in Direct-Placement Financing :* E. R. MORRIS.

VOL. 98, NO. 2, AUGUST 1954. *The Accountant's Position in the Field of Taxation :* M. E. RICHARDSON. *The Increasing Importance of Staff Training Programs :* E. M. BOULTER. *A Review of the Proposed New Internal Revenue Code :* B. HARROW. *A Survey of Audit Reports Submitted to 300 Banks. The Future of Lease Financing under New Depreciation Rules :* A. H. COHEN. *An Appeal to Accountants for Aid in Tax Administration :* B. F. WHITE.

VOL. 98, NO. 3, SEPTEMBER 1954. *Internal Revenue Code 1954.*

VOL. 98, NO. 4, OCTOBER 1954. *Client Help Program Study : a Comparative Survey :* L. H. PILIÉ. *One Firm's Policies in Training and Compensating Staff Men :* P. J. ADAM. *A Practical Cost System for the Small Manufacturer :* J. A. MITCHELL. *The Selection of Accountants for Municipal Audit Work :* R. S. WARNER. *Increasing the Speed and Accuracy of Filling Out Tax Returns :* R. E. NELSON. *The Professional Obligations Imposed by Auditing Standards :* R. B. SMITH.

Revue d'Économie Politique

VOL. 64, NO. 4–5, JULY–OCTOBER 1954. *La France Économique en 1953. Avant Propos :* R. COURTIN. *La situation démographique de la France :* L. HENRY. *L'évolution des prix :* R. DUMAS. *Le revenu national :* P. CARRE. *L'Union française d'outre-mer :* J. PELLIER.

Revue Économique

VOL. V, NO. 2, MARCH 1954. *Le Dollar. L'asymétrie de la balance des paiements :* C. P. KINDLEBERGER. *Les investissements américains à l'étranger :* B. DUCROS. *Les problèmes monétaires de l'Amérique latine :* L. BUQUET. *La zone sterling et l'attraction du dollar :* J. L. GUGLIELMI. *Qu'advient-il du Fonds Monétaire International? :* C. L. MERWIN. *L'Union Européenne des Paiements :* M. JAOUL and O. SCHLOESING.

VOL. V, NO. 3, MAY 1954. *La Distribution. Éléments pour une théorie de la distribution :* J. and H. KRIER. *Une politique de la distribution est-elle souhaitable et possible? :* J. M. JEANNENEY. *Éléments d'une politique commerciale en France :* J. ROMIEU. *Les études de marchés aux États-Unis :* D. A. REVZAN. *Influence des entreprises commerciales sur le marché :* J. AUBERT-KRIER. *Les structures régionales du commerce :* R. GOETZ-GIREY.

VOL. V, NO. 4, JULY 1954. *Influence des phénomènes d'élasticité sur l'accélérateur :* R. MAUBY. *Variations de la circulation fiduciaire en 1952 et 1953 :* P. BERGER. *La zone monétaire belge :* C. LEFORT. *La zone sterling et les avantages de ses participants :* M. MORET. *La situation économique :* L. A. VINCENT.

VOL. V, NO. 5, SEPTEMBER 1954. *Quelques aspects de la théorie de la firme :* R. GUIHÉNEUF. *Les comptes de villages :* S. WICKHAM. *La comptabilité nationale dans les pays sous-développés :* B. DUCROS. *La sidérurgie autrichienne :* J. L. PAYART. *Politique monétaire de stabilisation aux États Unis :* R. TABATONI.

Économie Appliquée

VOL. VI, NO. 4, OCTOBER–DECEMBER 1953. *Notes sur le taux de croissance actuel de l'industrie soviétique :* A. GERSCHENKRON. *Taux de change et options sur les structures :* M. BYÉ. *Les objectifs économiques d'une coopération durable :* J. WEILLER. *Schumpeter avant 1925, livré au hasard de ma mémoire :* W. TRITSCH. *Le développement des monnaies de crédit et les cadres institutionnels qu'il nécessite :* W. TRITSCH. *Dimensions de la firme et exploitation agricole :* S. WICKHAM.

VOL. VII, NO. 1–2, JANUARY–JUNE 1954. *Le principe de dualisme appliqué aux problèmes de croissance et de cycles :* J. ÅKERMANN. *Le problème de la tendance et du cycle :* R. M. GOODWIN. *Relations entre la croissance économique et les fluctuations cycliques :* N. KALDOR. *Note sur les modèles statiques du cycle :* N. KALDOR. *Le rôle des facteurs psychologiques dans l'explication des fluctuations économiques et de leurs irrégularités :* W. A. JÖHR. *Les besoins de capitaux dans les pays sous-développés :* P. N. ROSENSTEIN-RODAN. *La relation d'insatisfaction :* P. DIETERLEN. *L'étalon monétaire et la stabilisation économique :* A. G. HART. *Dynamique économique et stabilisation économique :* H. BAYER. *Oscillation et croissance :* H. GUITTON.

Journal de la Société de Statistique de Paris

VOL. 95, NOS. 1–2–3, JANUARY–FEBRUARY–MARCH 1954. *De la possibilité de couvrir par une assurance le risque de ruine d'un ouvrage d'art :* M. PROT. *La statistique et la banque :* P. CAUBOUE. *Chronique de démographie :* P. GASC.

VOL. 95, NOS. 4–5–6, APRIL–MAY–JUNE 1954. *Les fluctuations de la production industrielle et de l'emploi dans l'industrie depuis 1914 : deux aspects du mouvement économique de longue durée :* L. FLAUS. *Chronique des salaires :* M. J. MAUFROY. *Chronique de production industrielle :* M. P. VIENNOT.

Revue de Science et de Législation Financières

VOL. XLVI, NO. 3, JULY–SEPTEMBER 1954. *Economy in Public Spending :* C. LOWELL HARRIS. *Concerning Fraud in Taxation :* F. CAPET. *Specific Points of Monetary and Credit Policy in Western Germany :* R. STUCKEN. *Internal Financial Stability and Full Employment : Can they be Reconciled? :* M. MASOIN. *The Evolution of Public Debt in Yugoslavia :* V. MURKO. *Does Public Borrowing Encourage Inflation? :* J. FONTANEAU. *Some Aspects in the Federal Budget of U.S.A. :* N. HERMANN. *Remarks on the Evolution of the Form of Tax Deduction in France in the last Fifty Years :* M. FLAMANT. *Recent Developments in Public Finance : in France :* H. KRIER and P. LE BOURVA; *in the French Union :* J. LECAILLON. *Survey of French Tax Legislation :* P. COULBOIS.

Population

VOL. 9, NO. 1, JANUARY–MARCH 1954. *Faits et problèmes du jour :* A. SAUVY. *Une enquête sur l'opinion publique à l'égard de l'alcoolisme :* H. BASTIDE. *Nouveaux documents sur l'immigration en France :* A. GIRARD and J. STOETZEL. *A propos des prestations familiales dans les territoires français d'Afrique noire :* P. AUBIN. *La fécondité des ménages*

canadiens au début du XVIIIe siècle : J. HENRIPIN. *L'évolution démographique de la Belgique* : F. HEBETTE. *Économie et population : les doctrines françaises avant 1800* : A. FAGE.

VOL. 9, NO. 2, APRIL–JUNE 1954. *Mise au point sur la natalité française* : L. HENRY. *La population vivant en meublé : quelques données pour le département de la Seine* : A. VIEILLE. *Essai sur le peuplement préhistorique de la France* : L. R. NOUGIER. *" Le niveau intellectuel des enfants d'âge scolaire " : nouveaux résultats* : A. GIRARD. *La population des villes : sa mesure sous la Révolution et l'Empire* : M. REINHARD. *" Le mouvement naturel de la population dans le monde de 1906 à 1936 "* : H. BUNLE. *La mortalité infantile à Amsterdam selon les groupes sociaux* : P. DE WOLFF and J. MEERDINK.

VOL. 9, NO. 3, JULY–SEPTEMBER 1954. *Nouvelles données sur la mortalité infantile* : M. FEBVAY and M. CROZE. *Fréquence et nature des anomalies dans les familles consanguines* : J. SUTTER and L. TABAH. *Crises démographiques : Problèmes économiques ou crises morales ?* : J. RUWET. *Vues générales sur la mortalité française depuis la guerre* : R. PRESSAT. *Quelques données inédites sur Vauban et les premiers recensements de population* : E. ESMONIN. *Du salaire minimal au revenu national* : A. SAUVY and G. MALIGNAC.

Annales de Sciences Économiques Appliquées

VOL. 12, NO. 1, FEBRUARY 1954. *Aperçu de la conjoncture économique en Belgique. Les banques et la réglementation du change* : F. COLLIN. *Le fonds monétaire international et la collaboration monétaire internationale durant la dernière décade* : M. D'HAEZE.

VOL. 12, NO. 2, APRIL 1954. *Considérations sur la banque internationale de reconstruction et de développement et sur sa politique* : A. TIMMERMANS. *La comptabilité dans l'Égypte pharaonique et hellénistique* : J. VLAEMMINCK. *L'importance et la formation des cadres dans l'économie moderne* : M. LALOIRE. *Quelques aspects sur le problème du logement des travailleurs indigènes à Léopoldville* : J. VERSTRAETE.

VOL. 12, NO. 3, JULY 1954. *Aperçu de la conjoncture économique en Belgique. Propos à bâtons rompus sur les doctrines économiques* : M. MASOIN. *A propos des reviseurs d'entreprises et des commissaires-reviseurs* : U. VAES. *Considérations sur la banque internationale de reconstruction et de développement et sur la politique* : A. TIMMERMANS. *Essai sur la démarche comptable* : J. VLAEMMINCK. *La distribution et les marchés : Une forme nouvelle de distribution au service de l'indépendant : la chaine volontaire* : J. PLANCHARD.

Bulletin de l'Institut de Recherches Économiques et Sociales

VOL. XX, NO. 5, AUGUST 1954. *Le rapport du capital au revenu : aspects théoriques* : A. KERVYN DE LETTENHOVE. *Le problème structurel et l'expansion économique en Belgique* : L. DUQUESNE DE LA VINELLE. *La population active en Belgique* : F. HÉBETTE.

VOL. XX, NO. 6, SEPTEMBER 1954. *La conjoncture économique de la Belgique* : M. WOITRIN.

Revue de l'Institut de Sociologie

NO. 1, 1954. *La " reconversion " de l'Agriculture Soviétique. Du lien entre l'évolution du sentiment national en Belgique et la position internationale du pays* : G. GORIELY. *Le problème de l'économie indigène au Congo Belge. Hommes et Betés ; Action réciproque : L'Expérience* : R. AMY.

Institut Universitaire d'Information Sociale et Economique

NO. 3, 1954. *Mode de Vie des Ouvriers, 1948–9 : III : L'alimentation* : G. JACQUEMYNS.

Schmollers Jahrbruch

VOL. 74, NO. 4, 1954. *Notwendigkeit und Freiheit im Marxismus : die marxistische Theorie der Lebenspraxis* : H. SCHACK. *Statistische Sozialforschung : Werdegang und Gegenwartsprobleme* : C. LORENZ. *Mindestreservehaltung als Mittel der Kreditpolitik* : H. H. HOHLFELD.

VOL. 74, NO. 5, 1954. *Die energetische Betrachtung des wirtschaftlichen Geschehens* : S. SAGOROFF. *Das allgemeine Stabilitätspostulat in der nationalökonomischen Klassik, insbesondere bei Ricardo* : F. JONAS. *Unternehmungen, Unternehmer und Arbeiter im Eisenerzbergbau und in der Eisenverhüttung der Oberpfalz von 1300 bis um 1630* : F. M. RESS.

Wirtschaftsdienst (in German with English Air Mail Digest)

VOL. 34, NO. 8, AUGUST 1954. *On Education for Industrial and Political Leadership. Italy's Case for her Claim to Trieste. How German Industry Trains its Younger Generation of Skilled Workers* : A. KIESLINGER. *The Training Facilities of the German Trade Unions* : H. KÜPPERS. *Diagnosis of Federal Financial Reform* : H. SULTAN.

VOL. 34, NO. 9, SEPTEMBER 1954. *Wage Claims—Cost of Living—National Product. British and German Competition for Export Markets* : W. M. SCAMMEL. *Agrarian Policy on a New Course* : H. LÜBKE. *The Structure of Trade in the Federal Republic* : M. HÜTTNER.

Wirtschaft und Statistik

VOL. 6, NO. 6, JUNE 1954. *Zum Ablauf einer Bundesstatistik* : H. REEPSCHLAEGER. *Zur Frage der Einkommensschichtung*. G. FÜRST. *Das veranlagte Einkommen und seine Besteuerung* : H. HEINE.

VOL. 6, NO. 7, JULY 1954. *Probleme der industriellen Produktionsstatistik* : G. FÜRST. *Das Einkommen aus unselbständiger Arbeit im Rahmen der Volkseinkommensberechnung* : H. BARTELS and H. SPILKER. *Das Einkommen aus unselbständiger Arbeit in den Jahren 1949 bis 1953 : Einkommen aus unselbständiger Arbeit in den Jahren 1949 bis 1953* : H. SPILKER. *Die Frau in Haushalt und Beruf* : K. HORSTMANN.

VOL. 6, NO. 8, AUGUST 1954. *Der Beitrag der Land- und Forstwirtschaft und der Fischerei zum Sozialprodukt* : K. H. RAABE. *Strukturdaten zur Berechnung der Wertschöpfung des Einzelhandels im Jahr 1950* : I. KLEEMANN. *Die Entwicklung des Bauhauptgewerbes 1950–1953* : E. v. LUCADOU. *Einkommen und Körperschaftsteuer der Körperschaftsteuerpflichtigen* : H. HEINE.

VOL. 6, NO. 9, SEPTEMBER 1954. *Das Sozialprodukt im 1 Halbjahr 1954 : I—Die Entstehung des Sozialprodukts und das Einkommen aus unselbständiger Arbeit im 1 Halbjahr 1954* : K. H. RAABE ; *II—Die Verwendung des Bruttosozialprodukts im 1 Halbjahr 1954* : O. SCHÖRRY. *Die Ausgaben von Bund, Ländern und Gemeinden für das Rechnungsjahr 1952* : F. MENGERT.

Jahrbücher für Nationalökonomie und Statistik

VOL. 166, NO. 3, AUGUST 1954. *Recht, Staatsgewalt und Wirtschaft* : O. VON ZWIEDINECK-SÜDENHORST. *Die wirtschaftlichen Grundlagen der mittelalterlichen Gesellschaft* : M. M. POSTAN.

Weltwirtschaftliches Archiv

VOL. 72, NO. 2, 1954. *The Creation of Money Income* : J. PEDERSEN. *Die Tätigkeit der Reichsbank von 1876 bis 1914* : K. R. BOPP. *Zur Frage der Auswirkungen einer Abwertung auf die internationalen Austausch-bedingungen* : K. ROTHSCHILD. *Rent Concepts and the Theory of Opportunity Cost* : M. D. BROCKIE. *Die Herkunft der Unternehmer und Kapitalisten im Aufbau der kapitalistischen Zeit* : K. WIEDENFELD.

VOL. 73, NO. 1, 1954. *The Theory of Inflation* : J. PEDERSEN. *Der Realismus der Marginalanalyse in der Preistheorie* : E. SCHNEIDER. *Multiplikator, Akzelerator, Wachstumstraten und Konjunkturzyklus* : W. KRAUS. *Bevölkerungsentwicklung und Leistungspotential* : K. M.

Zeitschrift für die Gesamte Staatswissenschaft

VOL. 110, NO. 3, 1954. *Das Problem der kontinuierlichen Expansion der amerikanischen Wirtschaft:* F. BAERWALD. *Zur Lehre von der Wirtschaftspolitik:* F. HARTOG. *Die Geschichte der deutschen Versuche zur Lösung des Kartell- und Monopol-Problems:* C. E. FISCHER. *Bemerkungen über das Verhältnis zwischen ökonomischer Theorie und sozioökonomischer Struktur:* G. EISERMANN. *Franz Oppenheimer als Lehrer und Ökonom:* B. SCHULTZ. *Von den Ansätzen einer neuen Soziologie der Technik bei Thorstein Veblen:* P. HEINTZ. *Die Lehre Pufendorfs von der beschränkten Monarchie:* B. BÖRNER. *Zur Staatsauffassung von Karl Barth:* P. SCHNEIDER.

Allgemeines Statistisches Archiv

VOL. 37, NO. 5, 1953. *Moderne Methoden der statistischen Kausalforschung in den Sozialwissenschaften:* O. ANDERSON. *Probleme und Eigentümlichkeiten sozialstatischer Erkenntnis:* A. BLIND.

VOL. 38, NO. 1, 1954. *Stichprobenpläne für Konsumerhebungen:* L. BOSSE. *Über einige Stichprobenprobleme bei der Vorbereitung des deutschen Mikrozensus:* S. KOLLER. *Stichprobenverfahren in der amtlichen westdeutschen Agrarstatistik:* H. STRECKER. *Studie zur Frage des Familieneinkommens:* H. SCHMUCKER. *Eine Abschätzung der Nährstoffpreise in den Nahrungsmitteln:* H. KRAUT and H. BRAMSEL.

VOL. 38, NO. 2, 1954. *Erziehung zur Statistik:* K. KRIEGER. *Regionale Statistik und Karte:* F. WALTER. *Marktforschung durch Befragung:* C. KAPFERER. *Über die Anwendung von Tendenzbefragungen als Mittel der Konjunkturbeobachtung im Ausland:* W. STRIGEL. *Die Problematik der Statistik des Messewesens:* H. RAHLFS. *Probleme des Wohnungsdefizits in Österreich:* H. HEIDENWAG.

Statistische Vierteljahresschrift

VOL. 6, NO. 3–4, 1953. *Verkettbare Statistiken und ihre maschinelle Auswertung:* A. ADAM. *Über eine elementare Herleitung der Shepardschen Korrekturen und eine prinzipielle Bemerkung über die letzteren:* L. HOFMANN. *Die statistische Abteilung des Mathematischen Zentrums in Amsterdam:* J. F. KOKSMA and R. DOORNBOS.

VOL. 7, NO. 1–2, 1954. *Festschrift für Hofrat Universitätsprofessor Dr. Wilhelm Winkler zum 70 Geburtstag. Zum Geleit:* G. ZIMMERMANN. *Vertrauensgrenzen eines Extremums:* A. LINDER. *Verzerrung eines Stichprobenplanes durch Nichtbeantwortung:* H. KELLERER. *Einige statistische Modelle zur Analyse von Fussballresultaten:* S. VAJDA. *Über den Umgang mit systematischen statistischen Fehlern:* O. ANDERSON. *Gangprüfung bei normal verteilten Qualitätsmerkmalen:* A. ADAM. *Bemerkungen zur statistischen Qualitätskontrolle in der Spinnerei:* J. PFANZAGL. *Mass und Richtung: Zur Aggregation dreiwertiger Signalkonstellationen im Ifo-Konjunkturtestverfahren:* E. FELS. *Ein Beitrag zur mechanischen Ausgleichung:* L. SCHMETTERER. *Tabakkonsum und Erkankungen der Atmungsorgane:* W. OSSADNIK. *Schlussworte:* A. ADAM.

Bayern in Zahlen

VOL. 8, NO. 5, MAY 1954. *Die Wanderungen über die bayerische Landesgrenze 1953:* W. MAIER. *Der Gemüseanbau in Bayern 1954:* J. EICHINGER. *Der Schweinebestand in Bayern:* F. ILLNER. *Die Lage der bayerischen Wirtschaft zu Beginn des Frühjahrs 1954:* H. RANZ. *Kraftfahrzeugbestand Bayerns im Frühjarh 1954:* J. LEIPNER. *Die Kapitalgesellschaften in Bayern:* R. SCHNEIDER.

VOL. 8, NO. 6, JUNE 1954. *Ausländer, heimatlose Ausländer und ausländische Flüchtinge in Bayern 1954:* V. RICHTER. *Die voraussichtliche Entwicklung der erwerbsfähigen Bevölkerung Bayerns:* W. MAIER. *Anbauplanung und Anbauverwicklichung 1954 in Bayern:* J. RAAB. *Der Fremdenverkehr Bayerns im Winterhalbjahr 1953/4:* J. LEIPNER.

Das Steueraufkommen in Bayern: H. ROHLAND. *Die steigende Beanspruchung der sozialen Rentenversicherung:* E. SCHMIDT. *Alterserwerbstätigkeit und Altersversorgung in Bayern:* A. VOELCKER. *Die Entwicklung des Fleischverbrauchs in Arbeitnehmerhaushaltungen seit 1949:* H. SCHMUCKER. *Die voraussichtliche Entwicklung der Schülerzahlen in den kommenden Jahren in Bayern:* H. LOHBAUER.

VOL. 8, NO. 7, JULY 1954. *Bayerns Sozialprodukt im Jahre 1953:* J. WIRNSHOFER. *Alter und Familienstand der über die bayerische Landesgrenze Abgewanderten:* W. MAYER. *Hopfenexport Bayerns aus der Ernte 1953:* J. LEIPNER. *Die ersten Auswirkungen des neuen Jugendgerichtsgesetzes:* E. SCHMIDT.

VOL. 8, NO. 8, AUGUST 1954. *Veränderung der konfessionellen Zusammensetzung Bayerns durch Wanderung:* W. MAIER. *Bayerns Viehbestände Mitte 1954:* J. BUCK. *Die Bauwirtschaft in Bayern:* H. KRESLING. *Die Lage der bayerischen Wirtschaft im Sommer 1954:* H. RANZ. *Betriebserhebung in Beherbergungsgewerbe zum 1 April 1954:* J. LEIPNER. *Das Personal der bayerischen Gebietskörperschaften:* R. SCHNEIDER. *Struktur und Entwicklung der kommunalen Finanzen in Bayern:* H. ROHLAND.

VOL. 8, NO. 9, SEPTEMBER 1954. *Wir leben länger:* H. KETTL. *Die Ehescheidungen in Bayern 1953:* R. MAIS. *Die im Jahre 1953 über die bayerische Landesgrenze Zu- und Abgewanderten nach ihrer beruflichen Tätigkeit:* W. MAIER. *Der Ölfruchtanbau in Bayern:* J. DORN. *Der Zuckerrübenanbau in Bayern:* V. BRANDES. *Italien, bester Auslandskunde Bayerns:* J. LEIPNER. *Die Anstaltsfürsorge in Bayern im Rechnungsjahr 1953:* E. SCHMIDT. *Der Wohnungsbau in Bayern:* F. ENGEL.

Vierteljahrshefte zur Wirtschaftsforschung

NO. 3, 1954. *Zur konjunkturellen Situation:* I. RIECKENBERG and H. MARTELL. *Die Ergebnisse der vierteljährlichen Volkswirtschaftlichen Gesamtrechnung für die Bundesrepublik: Zweites Quartal 1954:* F. GRÜNIG and H. SCHIMMLER. *Konjunkturforschung und Marktforschung:* M. NICOLAS.

Europa Archiv

VOL. 9, NO. 12, JUNE 1954. *Neue Aufgaben für die Völkerrechtswissenschaft:* G. SCHWARZENBERGER. *Die Eisen- und Stahlindustrie in der sowjetischen Besatzungszone Deutschlands:* R. H. MIDDENDORF. *Bemühungen um einen gemeinsamen nordischen Markt:* L. FRISK.

VOL. 9, NO. 13, JULY 1954. *Griechenland, die Grossmächte der Friede:* S. CALOGEROPOULOS-STRATIS. *Die Wirtschaft Westberlins 1950 bis 1953:* W. DÖRING.

VOL. 9, NO. 14, JULY 1954. *Die Illusion einer selbständigen französischen Deutschlandpolitik (1944–1947):* W. CORNIDES. *Die Restauration der französischen Grossmachtstellung:* W. CORNIDES.

VOL. 9, NO. 15, AUGUST 1954. *"Deutschland zwischen West und Ost." Betrachtungen zum Vortrag des Reichskanzlers a. D. Dr. Brüning über "Die Vereinigten Staaten und Europa":* D. MENDE. *Die Wiederherstellung der Konvertierbarkeit der Währungen. Beurteilung der Aussichten durch die Bank für Internationalen Zahlungsausgleich in ihrem 24 Jahresbericht:* H. VOLLE. *Zur Gerichtsbarkeit in der Europäischen Verteidigungsgemeinschaft:* W. EICHLER.

VOL. 9, NO. 16, AUGUST 1954. *Die Weltfriedensbewegung im Atomzeitalter:* J. VON HEHN.

VOL. 9, NO. 17, SEPTEMBER 1954. *Die Entwicklung der österreichischen Aussenpolitik seit dem Zweiten Weltkrieg:* L. TONČIĆ-SORINJ. *Die baltischen Staaten und Sowjetrussland 1919–1939:* I. G. VON RAUCH.

VOL. 9, NO. 18, SEPTEMBER 1954. *Vorschläge des amerikanischen Unternehmertums zur Verhütung einer Wirtschaftskrise:* W. GEBAUER. *Die Europa-Kollegs: Ansätze zu einem neuen Typus der akademischen Bildung:* E. MENZEL.

VOL. 9, NO. 19, OCTOBER 1954. *Vereinte Nationen und Menschenrechte: Nach der Fertigstellung von zwei Konventionsentwürfen*: J. W. BRÜGEL. *Die Sowjetisierung des Geschichtsbildes in Mitteldeutschland*: J. VON HEHN. *Die europäische Zusammenarbeit als Problem der Rechtswissenschaft*: W. E. GENZER.

Schweizerische Zeitschrift für Volkswirtschaft und Statistik

VOL. 90, NO. 3, SEPTEMBER 1954. *Volkswirtschaftliche Probleme der Produktivität und der Lohnpolitik*: M. WEBER. *Betriebliche Probleme der Produktivität*: W. F. DAENZER. *Bemerkungen zum Problem der Produktivität und der Lohnpolitik*: C. GASSER. *Ein internationales Schema für volkswirtschaftliche Gesamtrechnungen*: U. ZWINGLI. *Sample Surveys for Household Income and Expenditure Information*: J. E. G. UTTING. *Genfer Volksund Berufszählungen des 18 Jahrhunderts*: E. J. WALTER.

Aussenwirtschaft

VOL. 9, NO. 3, SEPTEMBER 1954. *Betrachtungen zur Aussenwirtschaftspolitik*: H. BACHMANN, A. BOSSHARDT and F. LÜTOLF. *Nationale Wirtschaftssysteme und internationaler Handel*: A. MASNATA. *Die Kontrolle des internationalen Zahlungsverkehrs*: H. BACHMANN. *Der deutsche Kapitalexport im Rahmen des volkswirtschaftlichen Gesamtkreislaufes*: G. NEUHAUSER.

Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung

VOL. XXVII, NO. 6, JUNE 1954. *Die wirtschaftliche Lage in Österreich.*
VOL. XXVII, NO. 7, JULY 1954. *Die wirtschaftliche Lage in Österreich. Hauptprobleme der Land- und Fortswirtschaft in Tirol und Vorarlberg. Die Entwicklung des österreichischen Eisenbahntransitverkehrs.*
VOL. XXVII, NO. 8, AUGUST 1954. *Die Konjunkturlage zu Beginn der Herbstsaison. Der Importgehalt der Exporte.*
VOL. XXVII, NO. 9, SEPTEMBER 1954. *Die wirtschaftliche Lage in Österreich. Der Verbrauch von Kunstdünger im Jahre 1953/54.*

De Economist

VOL. 101, NO. 6, JUNE 1954. *Zimmermans proeve van een dynamische theorie van de marktvormen*: F. J. DE JONG. *De landbouw in de ontwikkeling van Indonesië*: J. P. VAN AARTSEN. *Opmerkingen en aantekeningen: Over de theorie der economische politiek*: H. S. HOUTHAKKER; *Repliek*: J. TINBERGEN. *Economische en sociale kroniek*: W. J. VAN DE WOESTIJNE.
VOL. 101, NO. 7–8, JULY–AUGUST 1954. *De organisatie van het economisch leven*: F. DE VRIES. *De financiële en economische ontwikkeling in Indonesië*: E. P. M. TERVOOREN. *Opmerkingen en aantekeningen: Verruiming van het inter-Europese productiemiddelenverkeer*: F. HARTOG; *Repliek*: J. WEMELSFELDER. *Economische en sociale kroniek*: W. J. VAN DE WOESTIJNE.
VOL. 101, NO. 9, SEPTEMBER 1954. *Monetaire politiek als middel van economische politiek*: F. DE ROOS. *De ontwikkeling van de publiekrechtelijke bedrijfsorganisatie*: G. J. BALKESTEIN and E. A. V. VERMAAS. *Economische en sociale kroniek*: W. J. VAN DE WOESTIJNE.

Skandinaviska Banken Quarterly Review

VOL. XXXV, NO. 3, JULY 1954. *The Come-back of Europe*: P. JACOBSSON. *Export Credits as Means of Competition*: G. SÖDERLUND. *Forecasts of Power Consumption*: F. PETRI.
VOL. XXXV, NO. 4, OCTOBER 1954. *Stable or Fluctuating Exchange Rates?*: P. JACOBSSON. *The Dilemma of Exchange Rate Policy*: E. LUNDBERG. *The Finnish Economy during the Last Ten Years*: B. SUVIRANTA.

Giornale degli Economisti e Annali di Economia

VOL. XIII, NO. 5–6, MAY–JUNE 1954. *Luigi Einaudi storico delle dottrine economiche*: G. BRUGUIER PACINI. *La demografia della razze umane*: M. BOLDRINI. *Sulla direzionalità della curva di offerta individuale di lavoro*: R. MAGGI. *I modelli esplorativi statistici e le richerche di economia induttiva*: F. BRAMBILLA. *Per una storia delle dottrine economiche: lo "Schmollers Jahrbuch"*: T. BAGIOTTI.

Banca Nazionale del Lavoro Quarterly Review

VOL. VII, NO. 28–29, JANUARY–JUNE 1954. *International Currency and Reserve Plans*: R. TRIFFIN. *Banking in Switzerland*: R. S. SAYERS. *The Annual Report of the Bank of Italy for 1953*: V. C. LUTZ. *Development Problems in Southern Italy: the Second Conference of the Cassa per il Mezzogiorno*: V. C. LUTZ. *The Italian Parliamentary Inquiry into Poverty*: G. RUFFOLO. *Recent Forecasts of the Future Growth of Population in Italy*: N. FEDERICI. *Italian Emigration Movements up to 1940*: G. COSMO. *The Archives of a Fourteenth Century Merchant and Banker: Francesco Di Marco Datini, of Prato*: F. MELIS.

Review of the Economic Conditions in Italy (Banco di Roma)

VOL. VIII, NO. 4, JULY 1954. *The Italian National Income*: B. BARBERI. *The Italian Banking System after the War (II).*
VOL. VIII, NO. 5, SEPTEMBER 1954. *The Italian Merchant Marine*: H. E. FERNANDO TAMBRONI. *Harbours and Harbour Activity in Italy at the Present Moment*: G. MOSTI. *Great Italian Land Reclamation Works: The Apulian "Tavoliere"*: A. MERENDI. *The Italian Milling Industry in 1953*: I. GATTAMELATA.

Critica Economica

NO. 3, JUNE 1954. *Nostro Paese*: A. PESENTI. *Appunti e note a proposito di relazioni ufficiali sulla situazione economica del Paese*: P. FORTUNATI.

L'Industria

NO. 1, 1954. *Interesse e quantità di moneta nella teoria macroeconomica della formazione del reddito*: E. SCHNEIDER. *Analisi delle relazioni interindustriali di singoli settori produttivi*: V. CAO-PINNA. *Calcolo ed usi dei coefficienti di "attivazione" di due importanti settori industriali nel quadro dell'economia italiana*: C. RIGHI. *Valutazione degli effetti indiretti provocati dall'incremento delle esportazioni italiane di prodotti meccanici nel periodo 1950–1952*: R. PERETTI.
NO. 2, 1954. *Sulla teoria della politica economica*: J. TINBERGEN. *Sull'analisi lineare delle interdipendenze industriali*: S. CHERUBINO. *Contribution à une théorie de l'agrégation des équilibres partiels dans le domaine de la production*: M. VERHULST. *Quattro anni dopo: la Relazione Generale pel 1953*: F. DI FENIZIO.

Italian Affairs

VOL. III, NO. 4, JULY 1954. *Italy and the Atlantic Pact. Political and Ethnical Aspects of the Trieste Problem. The Problem of the Free Territory of Trieste. The Partisan Movement. Aspects of Italian Population and Economy from 1901–1951. Agriculture in 1953. Labour and Social Security. Port Reconstruction. Rapid Growth of the Film Industry.*
VOL. III, NO. 5, SEPTEMBER 1954. *Italian Efforts towards European Unity. Italo-Lybian Relations. Parliamentary Inquiry into Unemployment in Italy. The Increase in Marriages. Money and Credit during 1953. Cost of Living Index. Tax Reform. Industrial Production in 1953. The Italian Motor-vehicle Industry. Land Reform in Maremma and Fucino.*

Moneda y Credito

No. 48, MARCH 1954. *La política de inversiones en la República Federal Alemana desde la reforma monetaria :* R. MEIMBERG. *La industria química y la economía nacional :* A. ROBERT. *La Banca española en 1953 :* I. C. GARRIGOS.

Revista de Economia

VOL. VII, No. 1, MARCH 1954. *Portugal e o quadro das estruturas económicas subdesenvolvidas :* A. RAMOS PEREIRA.

VOL. VII, No. 2, JUNE 1954. *As subsistências de origem animal no quadro da economia portuguesa :* U. F. NASCIMENTO.

El Trimestre Economico

VOL. XX, No. 4, OCTOBER–DECEMBER 1953. *XX Aniversario de "El Trimestre Económico." El presupuesto como estabilizador del desarrollo económico :* R. M. ORTIZ. *Una metodología para analizar la estructura de los ahorros :* O. SUNKEL. *La balanza de pagos de México, 1947–50 :* T. D. SWEENEY. *Minería medieval de la plata y el cobre en Europa Central :* J. BAZANT. *La mecánica del desarrollo económico : respuesta al Dr. Salera :* H. W. SINGER.

Boletin de Estudios Economicos

VOL. IX, No. 32, MAY 1954. *Consideraciones sobre el Sistema Fiscal Español :* J. L. URQUIJO DE LA PUENTE. *El Impuesto sobre la Renta en Inglaterra :* J. A. S. ASIAIN. *Las Relaciones Públicas en la Empresa :* J. M. R. LAUCIRICA. *Ensayo sobre la Responsabilidad Moral del Accionista Minoritario :* S. MANTILLA. *La Verdadera Igualdad en el Socialismo :* J. J. BRASAC.

Economic Bulletin of the National Bank of Egypt

VOL. VII, No. 2, 1954. *Egypt's Balance of Payments for 1953. The New Companies Law.*

The Economic Review (in Japanese)

VOL. 5, No. 2, APRIL 1954. *Some Suggestions for Applying the Input-output Analysis to the Problems of International Trade :* S. ICHIMURA. *The problems of "stagnation" in American capitalism :* K. OHARA. *The Family Firm and Labor Market—a Study on Disguised Unemployment :* M. UMEMURA.

VOL. 5, No. 3, JULY 1954. *An Essay on Cyclical Growth :* T. YASUI. *The Over-Loan Problem of City Banks in the Post-War Japanese Economy :* T. YOSHINO. *Economic Progress and Price Structure :* M. SHINOHARA.

The Annals of the Hitotsubashi Academy

VOL. IV, No. 2, APRIL 1954. *The Income Growth and the Rate of Saving in Japan :* Y. YAMADA. *Business Income during the Inflation in Japan :* I. KATANO. *Criminality in Japan Before, During and After the War :* T. UEMATSU. *Development of the Study of Greek Philosophy in Japan :* Y. FUJII. *Human Relations in the Japanese Society :* H. MINAMI. *Mathematical Analysis of the Metabolism and Analogy of Economics :* M. SUGITA.

Osaka Economic Papers

VOL. II, No. 2, MARCH 1954. *Critical Notes on the Theory of the Rate of Interest :* Y. TAKATA. *Anti-Monopoly Law and Elimination of Excessive Concentration of Economic Power Law in Japan—Comparison between Anti-Trust Laws of Japan and those of the United States :* K. MESAKI. *Capital Accumulation and Reproduction :* T. ICHITANI. *Current Problems of Local Finance in Japan :* K. KINOSHITA. *Some Laws of Complementary and Substitutive Goods :* M. MORISHIMA.

Statisztikai Szemle (Hungarian text)

APRIL 1954. *The Methodology of Selective Statistical Sampling and Certain Questions of its Application :* G. PÁRNICZKY. *The Evaluation of Building Costs :* I. ABONYI. *Methodological Problems of Statistical Indices :* P. KÖVES. *On the Information Work of the Central Statistical Office :* I. PÁLOS.

MAY 1954. *Current Problems of the Consolidation of Statistical Organisation :* J. RÉDEI. *The Law of Averages in Statistics :* B. YASTREMSKY. *Industrial Statistics in the Light of the New Government Policy :* M. PETÖ. *Problems in the Analysis of Industrial Production Costs :* D. VAYNSHENKER.

JUNE–JULY 1954. *Statistics and Bureaucracy as Shown Up by the Party Congress :* J. ZALA. *Central Statistical Office Decision on the Control of Statistical Work. Current Problems of Agricultural Statistics :* I. ÖROS. *The 270th Anniversary of the Birth of Mátyás Bél :* I. MÉSZÁROS. *The Concept and Teaching of Industrial Statistical Analysis :* P. KORNIS. *The Evolution of Hungarian Industry in the Light of the Facts :* E. BÁLINT and T. VADNAI. *103 Questions on Ready-Cooked Foods :* I. GYÖRGY.

AUGUST 1954. *Questions of Method and Principal for the Statistical Calculation of Real Wages and Real Income :* A. MÓD. *Central Statistical Office Decision on the Simplification of Statistical Work. "Concealed Manpower" in Industrial Enterprises :* G. BÁCS. *The Situation in the Forest Economy :* G. RÓKA. *Statistics in the Ministry of Heavy Industry :* L. HALKOVICS.

SEPTEMBER 1954. *The New Method of Annual Statistical Reporting. The Application of the Principles of Socialist Remuneration of Industrial Labour :* K. SÁNDOR and R. WAGNER. *On the Public Administration Budget :* L. LENGYEL. *Food Consumption in Salaried Workers' Families in Budapest :* P. DEMÉNY. *The Teaching of Statistics at the Karl Marx University :* L. DRECHSLER. *Some Problems of Retail Trade in the Town of Baja :* F. ZALA, B. BÁTORI and E. KEMENES.

Voprosy Ekonomiki (Russian text)

No. 6, 1954. *Soviet Budgets during the Fifth Five-year Plan :* K. PLOTNIKOV. *"To Each According to His Work"—the Economic Law of Socialism :* E. KAPUSTSIN. *Some Problems in the Development of Potato and Vegetable Growing in the U.S.S.R. :* I. VASILEV. *The German Question and the Problem of Guaranteeing European Security :* N. ZHUKOV. *The Bourgeois Theory of the Business Cycle in the Service of American Monopolies :* I. BLYUMIN. *The Decline of Agriculture in Colonial and Dependent Territories :* O. KLESMET. *Applied Economics as a Science and as an Academic Discipline :* A. ZVORYKIN and D. KIRZHNER. *In Defence of Applied Economics as a Science :* T. SAKSAGANSKY. *The Transitional Period from Capitalism to Socialism :* F. DANKOVTSEV. *The Moroccan People in their Struggle for National Independence :* P. DEMCHENKO. *The New U.S. Industrial Production Index :* V. CHERMENSKY.

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Planovoe Khozyaistvo (*Russian text*)

No. 3, 1954. *Improve the Checking of Plan Fulfilment and the Use of Reserves in the Economy. The Role of the State Budget in the Economic and Cultural Construction of the U.S.S.R.*: A. ZVEREV. *Problem of Developing Agricultural Engineering*: N. ALEKSANDROV and N. BEREZNOY. *The Ploughing Up of Virgin and Waste Land—A Major Reserve for Expanding Grain Production*: B. KUDRIN. *Eliminate the Lag in Flax Growing*: A. SHIMICHEV. *On the Improvement of Quantity Surveying and Planning in Building*: V. GIROVSKY. *The Development of Consumer Goods Production in the Uzbek S.S.R.*: S. ZIYADULLAEV.

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Vestnik Statistiki (*Russian text*)

No. 2, 1954. *The Great Force of Soviet Democracy. The Programme for the Powerful Upsurge of Grain Output. Improve the Accountancy of Materials in the Economy*: M. EIDELMAN. *The Problem of the Methodology of Analysing Costs of Production*: I. VYVSHEV. *The Index Method of Analysing the Fulfilment of the Wages Fund*: V. KOSTYUKHIN. *1953 Plan Results in the European Peoples' Democracies. How to Check the Reliability of Statistics on Employment and the Use of Working Time in Industrial Enterprises*: V. DZHAPARIDZE.

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Finansy i Kredit S.S.S.R. (*Russian text*)

No. 4, 1954. *The Great Unity of the Party, Government and Nation. Control by the Rouble in the Soviet Economy*: I. SLAVNY. *Raise the Efficiency of Control of Inspection*: S. TARUNYAN. *Greater Importance to the Lowering of Overhead Costs*: G. GOFMAN. *The Role of State Bank Credit in the Development of Local and Co-operative Industry*: L. LONSKAYA. *Cost Accounting and Control by the Rouble in Railway Transport*: L. ADAMOVA and V. KRYLOVA. *Local Budgets and Urban and Rural Development in the Ukraine*: I. POPOV. *Money and Its Function in a Socialist Economy*: A. GUSAKOV. *Money under Socialism*: K. LARIONOV and A. MOLCHANOV. *The Role of Finance and Credit in the Progress of the Economy and Culture of the German Democratic Republic*: M. SEREBRYANY.

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Finansy S.S.S.R. (*title changed*)

No. 7, 1954. *Successfully Fulfil Republican and Local Budgets. Eliminate Shortcomings in Tax Collection Determinedly and Practically*: V. GARBUZOV. *Economic and Cultural Construction and the 1954 Budget for the Russian S.F.S.R.*: I. FADEEV. *The Latvian Budget in the Service of the National Economy and Culture*: M. SHCHAPOV. *The Functions of Financial Institutions in the Perfection of the Work of Government Departments*: V. LABROV. *Collect State Loan Subscriptions in Full and in Time*: P. DMITRICHEV. *Tasks of the Trade Union Organisation in Financial Agencies and Banking Institutions*: A. LOSEVA. *Financial Control of Local and Co-operative Industry*: A. DOBRYSHIN and S. KEBIETS. *Agricultural Credit Co-operatives in China*: A. ZYKOV. *The Aggressive Activity of the U.S. Export-Import Bank*: A. ABROSKIN.

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Izvestia na Vishia Finansovo—Stopanski Institut (Bulgarian text, Russian and German summaries)

VOL. VIII, No. 1. *The Party and Government Decisions on the Further Development of Agriculture :* P. MASTIKOV. *On the Problem of the Rôle and Place of the Workers' Collective in the Organisation and Investigation of Accounting in an Enterprise :* D. SPASOV. *Insurance under Socialism :* M. PETROV. *The Integration of Types of Work and of Circulating Capital on Co-operative Farms :* D. GROZDEV. *Some Scope for Improvement in Cash-Accounting Services, in Short-term Credits and in Control by the Leva :* M. RUSENOV and L. RALCHEV. *The Chief Ways to Strengthen Co-operative Farm Finances :* K. ZANEV.

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NEW BOOKS

British

BISSET (G. B.). Financial Results on Farms in the Souther Province in 1949–50, 1950–51 and in 1951–52. Farm Managemer Survey Report No. 3. Reading: University of Reading Departmer of Agricultural Economics, 1953. 9½″. Pp. 35. 5*s*.

[This continues the series based on material collected by the Department Agricultural Economics, University of Reading, under the Farm Managemer Survey of England and Wales sponsored by the Ministry of Agriculture. Pr duction rose in each of the years surveyed, but *net income* fell temporarily 1950/51 because of a bad harvest which raised cost per unit of output. Capit cost per £100 of net output rose from £117·8 in 1949/50 to £124·2 in 1951/52; t cost per unit of output of land and other resources remained roughly constant, decline in labour cost being balanced by an increase in expenditure on power an other items. Net income per hundred acres rose over the period from £357 t £397.]

BOWEN (I.). Population. Cambridge Economic Handbook London: James Nisbet and Cambridge University Press, 1954. 7½′ Pp. v + 256. 10*s*. 6*d*.

[To be reviewed.]

BRITISH INSTITUTE OF MANAGEMENT. Report of the Annual Con ference, Harrogate, 1953. London: British Institute of Management 1954. 9″. Pp. 207. 7*s*. 6*d*.

[This contains a large number of interesting papers by business leaders an others, together with discussions. The topics discussed include, in addition t problems of management in the narrower sense, work study and industria psychology, wage-differentials between skilled and unskilled workers, scientifi research in the small company and a wide range of other subjects.]

BRITISH TRAVEL AND HOLIDAYS ASSOCIATION. 26th Annua Report, for the year ended March 1954. London: British Travel an Holidays Association, 1954. 8½″. Pp. 40.

[The current activities of the Association are described, with special attentio to innovations instituted in the past year. The total amount of tourist traffic i 1953 came well up to expectation, and it was spread out over the year in a wa which reflected the success of the Association's policy of concentrating publicity on Coronation Year rather than on Coronation Day. A surprising feature wa that the number of visitors from the United States and the Continent of Europ increased, compared with 1952, in a much greater proportion than did the numbe of visitors from Commonwealth countries.]

BURTON (J. H.). Local Authority Finance, Accounts and Auditing (including Financial Administration and Control). Third Edition. London: Gee & Co., 1954. 8½″. Pp. 304. 25*s*.

[Previous editions of this handbook appeared in 1923 and 1931. It is intended chiefly for the use of councillors and officials in the local government service. Its four sections deal respectively with the general principles of local administration, the normal practice of local government finance and accountancy, certain particular problems, such as financial controls and methods of giving out contracts, and finally auditing.]

CENTRAL BANK OF CEYLON. Annual Report of the Monetary Board to the Minister of Finance, for the year 1953. Colombo: Central Bank of Ceylon, 1954. 10″. Pp. 97 and charts.

[This contains a general survey of economic conditions in Ceylon during 1953. The country's external assets continued to fall, although at a declining rate, notwithstanding some improvement in export income and a drop in import prices. This lack of balance on international account is attributed largely to the continuance of government deficit spending. It is suggested that, although some measures were taken in the course of the year to reduce the budget deficit, there is still a strong case for cutting down government expenditure.]

COURT (W. H. B.). A Concise Economic History of Britain, from 1750 to recent times. London: Cambridge University Press, 1954. 8″. Pp. v + 368. 21*s*.

[To be reviewed.]

DE KOCK (G.). A History of the South African Reserve Bank, 1920–52. Pretoria: J. L. Van Schaik, 1954. 9″. Pp. vii + 376. 32*s*. 6*d*.

[To be reviewed.]

The Economics of "Under-developed" Areas. An annotated reading list of books, articles and official publications compiled by ARTHUR HAZLEWOOD. London: Oxford University Press, for the Institute of Colonial Studies, 1954. 8½″. Pp. 89. 6*s*.

[623 items are enumerated with brief but informative notes on each. The list is arranged under twelve well-devised subject headings, with subdivisions, and there are indexes of places and authors. Statistical yearbooks, censuses and other such primary sources are in general not included. Mr. Hazlewood has done an excellent piece of work which should find wide use.]

FLANDERS (A.) and CLEGG (H. A.) (Eds.). The System of Industrial Relations in Great Britain, its History, Law and Institutions. Oxford: Basil Blackwell, 1954. 9″. Pp. v + 380. 30*s*.

[To be reviewed.]

FOGARTY (M. P.). Human Relations in Industry. Oxford: Catholic Social Guild, 1954. 7½″. Pp. 102. 2*s*.

[Professor Fogarty suggests that the reorientation of industrial methods and organisation in the interests of better human relations may in the course of the next half-century follow an evolution similar to that which has been witnessed in the last half-century in the gradual and not uninterrupted development of the social services. He argues, with some interesting and well-chosen examples, that methods of production which appear best from the engineering point of view may not always in practice lead to the highest output if they cause workers to become discontented or at odds with one another. Professor Fogarty is a great believer also in the formation of more numerous co-operative and democratic group organisations, both at the industry level—Development Councils are an example—and in the firm or smaller unit. He concludes with a chapter more specifically addressed to his fellow-Catholics, in which he discusses the best ways in which Christians as such may seek to exert an influence in the industrial world.]

HALLAM (H. E.). The New Lands of Elloe. University College of Leicester, Department of English Local History, Occasional Paper No. 6. Leicester: University College of Leicester, 1954. 10″. Pp. 42. 6*s*.

[The author uses a wide range of archaeological as well as documentary evidence to show that the reclamation of land from fen and sea by the villages of the wapentake of Elloe in South Lincolnshire took place chiefly between the Norman Conquest and the end of the thirteenth century. He contrasts this finding with the generally held belief that the drainage of the fens was an achievement of the seventeenth century.]

HARTLEY (SIR HAROLD). Science and Industry—the Pattern of the Future? Southampton: University of Southampton, 1954. 8½″. Pp. 24. 2*s*. 6*d*.

[The author takes as the starting point for this stimulating address a brief survey of the chief respects in which the growth of scientific knowledge has

contributed to industrial development in the present century. He then goes on to consider the lines of scientific advance that appear to hold the most promise for the future in the light of certain estimates which he gives of the probable order of magnitude of the growth of Man's needs for food, raw materials and power supply over the next half-century.]

HARTWELL (R. M.). The Economic Development of Van Diemen's Land 1820–1850. Melbourne: Melbourne University Press (London: Cambridge University Press), 1954. 8½". Pp. v + 273. 35*s*.

[To be reviewed.]

HEYWORTH (SIR GEOFFREY). The United Africa Group. London: Unilever, Ltd., 1954. 8". Pp. 20.

[The Chairman of Unilever here describes the origins of the United Africa group of companies and the part they have played in the economic development of tropical West Africa.]

INNIS (H. A.). The Cod Fisheries. The history of an international economy. Revised edition. Toronto: Toronto University Press (London: Geoffrey Cumberlege), 1954. 10". Pp. vii + 522. 68*s*.

[The first edition of the late Dr. Innis's remarkable book was reviewed in the ECONOMIC JOURNAL of 1941, p. 110, by Margaret Digby. The edition was a small one, and copies have in the meanwhile become almost unobtainable. In this welcome new issue the editors have incorporated some marginal notes written by Dr. Innis on his own copy of the original edition.]

JOHNSON (A.). Economic Theory. London: Frederick Muller, 1954. 7½". Pp. 144. 8*s*. 6*d*.

[To be reviewed.]

LING (T. M.) (Ed.). Mental Health and Human Relations in Industry. London: H. K. Lewis, 1954. 9". Pp. xiii + 265. 21*s*.

[The contributors to this volume are resident or visiting members of the staff of the Roffey Park Institute of Occupational Health and Social Medicine. Their papers, in which they draw on clinical experience gained at the Roffey Park Rehabilitation Centre, are based on the teaching given at short residential courses that have been held at the Institute for personnel managers, social workers and others. The contributions cover a wide range of general topics in industrial psychology and are not confined to purely medical issues.]

MACKENZIE (SIR C.). Realms of Silver. One hundred years of banking in the east. London: Routledge & Kegan Paul, 1954. 10". Pp. v + 338. 25*s*.

[The centenary of the Chartered Bank of India, Australia and China is appropriately celebrated in Sir Compton Mackenzie's lively narrative. The Chartered Bank is the senior and second largest British bank operating in the Far East and South-east Asia, and the story of its growth cannot but be instructive. The author fittingly appreciates the solid virtues of such Victorian worthies as James Wilson and Robert Lowe, who played so important a part in the Bank's inception, and relishes the more dramatic episodes and details incident to the conduct of banking in strange and often disturbed conditions. Economic historians will have their appetites whetted by Mr. Cockburn's statement in his preface that "the archives of the Bank contain material sufficient for a dozen books," and will hope that his qualification, "but there is much that cannot yet be told," does not apply to the second half of the nineteenth century. Certainly, there should be much first-rate material for research into the history of the organisation and expansion of British foreign trade and investment in the Far East. The institutional pattern of foreign trade in this crucial period is of considerable interest, and such primary sources as the Chartered Bank's archives should be particularly illuminating. As it is, enough sidelights emerge from Sir Compton's story to encourage us to ask for more.]

MALACH (V. W.). International Cycles and Canada's Balance of Payments 1921–33. Canadian Studies in Economics, No. 1. Toronto: University of Toronto Press, 1954. 10". Pp. vii + 154. 24*s*.

[This book, the first in a series of studies sponsored by the Canadian Social Science Research Council, began as a London Ph.D. Thesis, and still retains in architecture some of the characteristics of such a document. It begins with a series of brief summaries of the various theories of the trade cycle and of the mechanisms of its transmission. But it goes on to examine the history in Canada of a series of significant cyclical phases and to consider how far they fit into particular types of explanation. The phases he has chosen are the up-turn of 1921, the upswing of 1921–29, the down-turn of 1929, the downswing of 1929–33 and the major up-turn of 1933. Among a long and rather brave list of conclusions reached are "that no one business cycle theory can be singled out as universally applicable to the exclusion of all others," and that, in the Canadian case at least "one business cycle theory may explain one turning point and another the next." It would seem that theories stressing real factors are more pertinent. Quite apart from the interest of these attempts to verify theories, the book provides a great deal of useful statistical material concerning cycles in Canada.]

MENDELSOHN (R.). Social Security in the British Commonwealth. Great Britain, Canada, Australia, New Zealand. London: University of London, the Athlone Press, 1954. 8½". Pp. vii + 391. 35*s*.

[To be reviewed.]

MEYER (F. V.). Inflation and Capital. Cambridge: Bowes & Bowes, 1954. 9". Pp. 75. 12*s*. 6*d*.

[To be reviewed.]

MITCHELL (J. D. B.). The Contracts of Public Authorities. A comparative study. London: Bell, for the London School of Economics and Political Science, 1954. 9". Pp. v + 256. 25*s*.

[This is a study of legal principles and practice in England, the United States and France in respect to contractual obligations entered into by public authorities. The author's basic contention is that recognition should be granted to the general principle that the overriding duty of public authorities to serve the public interest will in certain cases justify or even compel them to disregard their contractual obligations. This being so, special rules should be evolved to govern the compensation of parties who would otherwise be the losers. The author suggests that if the special status of contracts with public authorities were generally understood, the risk involved for the other contracting parties would be already partially reflected in the prices and other terms of the contract; the amount of compensation would not therefore need necessarily be the same as in an ordinary case of breach of contract. He argues that specific recognition of the special position of government agencies may in the long run be the best way of safeguarding the rights of individuals.]

MUSSON (A. E.). The Typographical Association. Origins and history up to 1949. London: Oxford University Press, 1954. 10". Pp. v + 550. 30*s*.

[To be reviewed.]

NEEDHAM (J.). Science and Civilisation in China. Vol. I. Introductory Orientations. London: Cambridge University Press, 1954. 10". Pp. 318. 52*s*. 6*d*.

[To be reviewed.]

Oxford Economic Atlas of the World. Prepared by the Economist Intelligence Unit and the Cartographic Department of the Clarendon Press. London: Oxford University Press, 1954. 10½". Pp. 112 of maps, Pp. 152 of text. 30*s*.

[This new atlas, designed jointly by the Economist Intelligence Unit and the Cartographic Department of the Clarendon Press, will become a standard reference book for all economists. For it is very much more in practice than an atlas.

Over half of its pages take the form of readily available tables of the essential statistics of area, land-use, population, communications, currency and exchange rate, production and trade for each country, large or small. In the map section, at the beginning, after a series of introductory maps, showing soils, vegetation, relief, rainfall and temperature on a world scale, and a series of physical maps of continents for purposes of reference, the main part is devoted to a series of commodity maps, showing for each of some 120 commodities the world production and world trade in 1948–50, with the pre-war shares in world trade tabulated for comparison. If there is a criticism to be made, it is that, in pursuing the laudable object of making the volume convenient to handle, the maps have had to be drawn on a scale on which the information is very difficult to extract from the map itself (*e.g.*, chemicals, motor vehicles, locomotives) and depends largely on the textual legend, which is printed over the map itself; one is led to wonder whether a rather larger page would not have made just the difference to the usefulness of the volume.]

PASDERMADJIAN (H.). The Department Store, its origins, evolution and economics. London: Newman, 1954. 9″. Pp. 217. 16*s*.

[To be reviewed.]

RESERVE BANK OF NEW ZEALAND. Employment of Economic Resources. Wellington: Reserve Bank of New Zealand, 1954. 11″. Pp. 36. 3*s*. 6*d*.

[This reprints a series of articles that appeared in the *Bulletin of the Reserve Bank of New Zealand* between 1951 and 1953. Problems of stability and progress are dealt with partly in general terms and partly with reference to statistics relating to New Zealand. The authors' approach is summarised in the quotation from Mr. Harrod which they take as their text: "Anyone could secure full employment easily enough if that were the sole aim; art and skill are required to combine it with securing the highest possible efficiency of our economic organisation."]

ROBBINS (L. C.). The Economist in the Twentieth Century, and other lectures in political economy. London: Macmillan, 1954. 9″. Pp. vii + 225. 16*s*.

[To be reviewed.]

RUSSELL (SIR JOHN). World Population and World Food Supplies. London: Allen & Unwin, 1954. 9½″. Pp. 513. 50*s*.

[To be reviewed.]

SALTER (W. E. G.). The Measurement of Australian Industrial Production. An examination of the problems. Needlands, Western Australia: University of Western Australia Press, 1954. 9½″. Pp. 63. 5*s*.

[In the first part of this study, Mr. Salter outlines the general difficulties involved in constructing an index of production. He draws largely here on the work of Carter, Reddaway and Stone, Wilson, Geary, Fabricant and others. In the second part the author attempts to construct an experimental production index for Australia, more for the sake of ascertaining the magnitude of the difficulties involved than in the hope of producing an index suitable for immediate use. He finds that for purposes of comparison over periods of five years or so, difficulties due to problems of weighting are unimportant compared with the errors probably involved by the use of faulty indicators.]

SILVERMAN (R.). Advertising Expenditure 1952. London: The Advertising Association, 1954. 10″. Pp. 64.

[This is a sequel to an earlier report by Mr. Silverman, *Advertising Expenditure in 1948*, and follows similar lines. When allowance is made for changes in prices, the total volume of advertising in Britain in 1952 is found to have been about 85% of the pre-war amount, as compared with about half the pre-war amount in 1948. The ratio of advertising expenditure to national income, which was about 2·1% in 1938, rose after a drop to about 1·2% in the years immediately after the war to between 1·6% and 1·7% in 1953. The author points out that in the United States also the proportion of the national income devoted to advertising was still in 1953 less than before the war, although the difference—2·5% compared with 2·8%—is less than in the case of this country.]

SPIR (A.). Right and Wrong. Translated by A. F. Falconer. Edinburgh: Oliver and Boyd, for the University Court of the University of St. Andrews, 1954. 9″. Pp. 86. 10*s*. 6*d*.

[African Spir, born in South Russia in 1837, trained as a naval officer, colleague of Tolstoi in the siege of Sebastopol, resigned in 1857 and devoted himself to the study of philosophy. In 1867 he sold his land and property in Russia and moved first to Germany and later to Switzerland. Before his death in 1890 he published over twenty works. This slim volume translates for the first time into English *Recht und Unrecht*. It contains twelve essays on a variety of subjects of which several touch on the social sciences. The first essay, "How can Philosophy serve the Social Sciences," is concerned mainly with the question whether there is an "absolute process of becoming." The seventh essay is concerned with "The Task of the State." The four last essays deal with "Rights of Ownership," "The Relation between Capitalists and Workers," "Means of Compensation" and "General Observations on the Treatment of Legal and Economic Questions." Spir's general attitude to these problems is best summed up in two sentences from this last essay: "Man's individuality with its fundamental law, egoism, is conditioned by appearance and illusion, that is to say, by something abnormal and foreign to the unconditioned, eternal, normal essence of things, and, in consequence, it has within it a fundamental contradiction. . . . Today, when this inner contradiction can be demonstrated and proved from the observable relationships of social life, the reader will grasp that the salvation of humanity lies solely and entirely in true philosophical insight."]

STAGG (F. N.). West Norway and its Fjords. London: Allen & Unwin, 1954. 9″. Pp. 245. 18*s*.

[This is a popular general history of Bergen and its provinces from the earliest times. The author makes no pretence to originality or profundity in interpretation, but he has a gift for the vivid portrayal of character and an eye for the illuminating anecdote. His book contains a great deal of information not elsewhere available in English.]

STARK (W.) (Ed.). Jeremy Bentham's Economic Writings. Volume III. London: Allen & Unwin, 1954. 8½″. Pp. 600. 45*s*.

[To be reviewed.]

TINKER (H.). The Foundations of Local Self-Government in India, Pakistan and Burma. University of London Historical Studies, I. London: The Athlone Press, University of London, 1954. 9″. Pp. ix. + 376. 35*s*.

[A very valuable study of the development of local government in India. Local government started early and was enthusiastically developed by Lord Ripon in the 1880*s*. Over the years the results hardly lived up to the high expectations of that period. Mr. Tinker ascribes this failure partly to inadequate planning and drafting of legislature in later years, partly to party tactics and boycotts, but chiefly to failure to have a clear view of the final goal.]

WICKSELL (K.). Value, Capital and Rent. Translated by S. H. Frowein. London: Allen & Unwin, 1954. 9″. Pp. 180. 18*s*.

[To be reviewed.]

WILSON (C.). The History of Unilever. A study in economic growth and social change. In two volumes. London: Cassell, 1954. 9½″. Vol. I: Pp. v + 335; Vol. II: Pp. 480. 45*s*.

[To be reviewed.]

Indian

BALAKRISHNA (R.). Measurement of Productivity in Indian Industry. Madras University Economics Series, No. 8. Madras: University of Madras, 1953. 9½". Pp. v + 288. Rs. 15/-.

[The main objective of the author is to throw light on the trends of productivity within India itself and as between different regions of India. His first five chapters deal mainly with the technical problems of measurement and comparison and the possible differences of results from using different methods. According as the complex of products taken as weights in calculating the overall change of productivity is that of the base year or the current year, overall productivity is estimated to have fallen by 11·28% or 9·54% between 1938 and 1948, but both complexes clearly indicate a fall of the order of 10%, to be explained largely by deterioration of plant and equipment during the war. It will be interesting to see whether later Censuses of Production reverse this trend. Apart from the overall comparison the author attempts comparisons in some twelve individual industries.]

GHOSH (M. K.) and PRAKASH (O.). Principles and Problems of Industrial Organization. Revised and enlarged edition. Allahabad: The India Press, 1953. 8". Pp. iii + 816. Rs. 11/-.

[This introductory book by two members of the Faculty of Commerce of the University of Allahabad concentrates, first, on the forms of industrial enterprise and their promotion, finance and management. It goes on to consider industrial combination. There then follow chapters on the functions of middlemen, on the organisation of selling, on scientific management and rationalisation, on labour remuneration and industrial relations, on size and location and the sphere of cottage industries and on industrial planning. It should form a useful introduction to the subject for Indian students.]

LALWANI (K. C.). Agricultural Economics. Second edition. Handbooks on Economics and Commerce, No. 3. Calcutta: A. V. G. Mandir, 1954. 7½". Pp. 240. Rs. 6/4.

[An elementary introduction to the subject, written in terms of India and for Indian students. It discusses such problems as the size of holdings, irrigation and soil conservation, land tenure, serfdom and labour supply, indebtedness, co-operation, marketing and ends with short discussions of food policy and famines, the rural living standards of India and planning for improvement.]

MADAN (B. K.) (Ed.). Economic Problems of Underdeveloped Countries in Asia. A symposium. New Delhi: Indian Council of World Affairs (London: Geoffrey Cumberlege), 1954. 10". Pp. 290. 21*s*.

[To be reviewed.]

PATEL (G. D.). The Indian Land Problem and Legislation. Bombay: N. M. Tripathi, 1954. 9". Pp. v + 534. 30*s*.

[A detailed and well-documented account of the measures taken to deal with the manifold local and particular problems in different parts of India.]

THIRUMALAI (S.). Post-War Agricultural Problems and Policies in India. Bombay: Vora & Co., in co-operation with the Indian Society of Agricultural Economics, and under the auspices of the Institute of Pacific Relations, New York, 1954. 9½". Pp. v + 280. Rs. 12/-.

[The author of this useful monograph is Research Officer of Indian Society of Agricultural Economics, and it has been produced under their auspices. Part I is devoted to the historical background, both pre-war and war-time and to the consequences of partition. Part II studies the basic factors, such as land use,

ZACHARIAS (C. W. B.). Agricultural Planning for *Madras*. Madras University Economics Series, No. 7. Madras: University of Madras, 1953. 10". Pp. 191. Rs. 10/-.

[This is a companion volume to the same author's *Madras Agriculture*, noted in this JOURNAL in September 1951. Its purpose is described as "to depict in broad outline the directions in which development should take place." The author starts with general principles and the basic structure of Madras agriculture; he goes on to targets of production and the various measures to give effect to them. The objective for grain production represents an increase of 46%, required to meet a policy of self-sufficiency. The measures that might be adopted to secure such an expansion are then discussed: intensive measures, the extension by irrigation, land reclamation and other devices of the cultivated area, organisational improvements, credit reforms. Finally, the role and contribution of government planning and controls and the problems of finance are considered. The objective is very high, but the author does not regard it as unattainable.]

American

BERGSON (A.) and HEYMANN (H.). Soviet National Income and Product 1940–48. A research study by the RAND Corporation. New York: Columbia University Press, 1954. 9½". Pp. 248. $5.

[To be reviewed.]

BURNS (A. F.). The Frontiers of Economic Knowledge. Princeton, N.J.: Princeton University Press, for the National Bureau of Economic Research (London: Geoffrey Cumberlege), 1954. 9½". Pp. vii + 367. 40*s*.

[To be reviewed.]

DEARING (C. L.). Industrial Pensions. Washington, D.C.: The Brookings Institution, 1954. 9½". Pp. x + 310.

[This is a full-scale study of a means of providing economic security in old age which has become increasingly important in the United States in recent years. The author describes in detail the structure and coverage of industrial pension schemes, methods of contribution, the investment of pension funds and other aspects of the question. He finds that only about one-third of the labour force in the United States has a reasonable expectation of being covered by industrial pension schemes. He suggests that the drive for non-contributory pensions which labour unions undertook in 1949–50 has had some unfortunate effects in perpetuating and aggravating certain faults already then present in many industrial pension schemes. Chief among these are the tendency to make the right to benefits conditional on the worker remaining in the employment of the same firm up to the retiring age and the notion that a given money rate of benefit should be guaranteed. The author would favour instead a system under which the worker acquired a vested right to a share in the pension fund which would survive his transference to another employer and which would enable him to benefit by any appreciation taking place in the capital value of the pension fund.]

DIRLAM (J. B.) and KAHN (A. E.). Fair Competition. The law and economics of antitrust policy. Ithaca, New York: Cornell University Press (London: Geoffrey Cumberlege), 1954. 9½". Pp. vii + 307. 36*s*.

[To be reviewed.]

DUE (J. F.). Government Finance. An economic analysis. Homewood, Illinois: Richard D. Irwin, 1954. 9". Pp. ix. + 562.

GOLDSMITH (R. W.). The Share of Financial Intermediaries in National Wealth and National Assets, 1900–1949. National Bureau of Economic Research Studies in Capital Formation and Financing, Occasional Paper 42. New York: National Bureau of Economic Research, 1954. 9". Pp. 120. $1.50.

[Dr. Goldsmith starts by pointing out the over-statement of the relative importance of financial intermediaries involved by the commonly made comparison between their assets (a gross unconsolidated figure) and total national wealth (a net consolidated figure). Comparison of their assets with the unconsolidated assets of all economic units shows a ratio at the present time of about one-fifth. Dr. Goldsmith traces the growth and fluctuations of this ratio over the past half-century and provides in addition much valuable detail on first, the share of financial intermediaries in total holdings of different classes of assets, second, the relative importance of different types of financial intermediaries, and third, the composition of the assets of financial intermediaries. One of the most important changes observed over the period is the increase in the part played by financial intermediaries in the long-term external financing of business.]

Government Competition: Problem and Perspective Report of the Committee on Economic Policy. Washington, D.C.: Chamber of Commerce of the United States, 1954. 9". Pp. 16. 50 c.

[Brief particulars are given of the present extent of government business operations in the United States. The chief thesis is that while some government business operations are necessary for military and other purposes, "every effort should be made to avoid competition with private enterprise." If a government enterprise shows a loss, that proves how inefficient it is; if it makes a profit, it proves that it is enjoying some concealed subsidy or else that its sphere of operations should properly be one for private enterprise.]

GRAYSON (H.). Economic Planning under Free Enterprise. Washington, D.C.: Public Affairs Press, 1954. 8". Pp. 134.

[This is a comparative study of the techniques of government economic planning and forecasting in use in the United States, Canada and Great Britain, with briefer discussion of planning in the O.E.E.C. countries and of non-governmental work in the realm of economic forecasting.]

HABERLER (G.). Currency Convertibility. National Economic Problems, No. 451. New York: American Enterprise Association, 1954. 8½". Pp. 46. $1.

[Professor Haberler here presents with his usual clarity the case for the immediate adoption of currency convertibility. His position is a more extreme one than is usually taken by supporters of convertibility in this country. He favours convertibility for residents as well as for non-residents, for capital transactions as well as for current transactions. He regards incomplete convertibility as unsatisfactory largely because it would involve the retention of the machinery of exchange control, which he is anxious to see so thoroughly dismantled that it could not be restored to service in the future. The move to convertibility should, he maintains, be taken simultaneously by as many countries as possible and should be followed by at least a limited period of freely fluctuating exchange rates. Professor Haberler believes that such a move would not in present circumstances involve more than a slight depreciation of other currencies in terms of the dollar. The crucial condition for the subsequent success of the policy would be "the scrupulous avoidance of inflation" in the countries concerned.]

HOEFFDING (O.). Soviet National Income and Product in 1928. A research study by the RAND Corporation. New York: Columbia University Press, 1954. 9½". Pp. 156. $3.75.

[To be reviewed.]

JOHNSON (J. L.). The Economy of Northern Kentucky. Bulletin of the Bureau of Business Research, College of Commerce, University of Kentucky, No. 29. Frankfort, Kentucky: Agricultural and Industrial Development Board of Kentucky. 1954. 11". Pp. 52.

[Statistics are given, with brief discussion, of population, income, retail trade and other economic indicators in northern Kentucky in 1953, with figures for 1950 and sometimes 1939 appended for comparison. A special section is devoted to the problem of the journey to work. The author draws heavily on previous work done at the University of Kentucky Bureau of Business Research on county income in Kentucky.]

KAPLAN (A. D. H.). Big Enterprise in a Competitive System. Washington, D.C.: The Brookings Institution, 1954. 9½". Pp. v. + 269. $4.

[To be reviewed.]

KNIGHT (SIR HENRY). Food Administration in India 1939–47. Stanford University Food Research Institute Series on Food, Agriculture, and World War II. Stanford, California: Stanford University Press (London: Geoffrey Cumberlege), 1954. 9". Pp. 323. $7.50.

[Sir Henry Knight, who has contributed this volume to the series of studies of food and agriculture in the Second World War organised by the Food Research Institute of Stanford University, was himself adviser to the Governor of Bombay and responsible for the organisation and rationing of foodstuffs and their procurement. He was thus able to see at first hand in one part of India the problems which, in terms of India as a whole, he is here discussing. The acute problems of the war years arose chiefly from the loss of Burmese supplies of rice: in the years 1938–41 India was a net importer of about 1·4 million tons of food grains a year, representing about 3% of supplies. India as a whole, however, was divided into areas of surplus—the Punjab, United Provinces, Central Provinces and Central India, Orissa—and areas of very considerable deficit—principally Bombay, Bengal, Madras. If the internal movement of grain was diminished by hoarding or through any breakdown, there was grave danger of famine in certain areas. The Bengal famine of 1943 was the first major crisis. From that disaster grew the beginning of an active policy of agricultural expansion, of food-grain procurement and of rationing. Sir Henry Knight discusses very frankly the reasons why the administration was ill-prepared to deal with the Bengal crisis, and the successes and failures of the subsequent policies. He claims that, apart from those policies, the crop failures of 1946 and 1947 might have developed into major disasters.]

KURIHARA (K. K.) (Ed.). Post Keynesian Economics. New Brunswick, New Jersey: Rutgers University Press, 1954. 9". Pp. vii + 442. $8.50.

[To be reviewed.]

KUZNETS (S.). Economic Change. Selected essays in business cycles, national income and economic growth. London: Heinemann, 1954. 8½". Pp. vii + 333. 15s.

[To be reviewed.]

Labor, Management and Economic Growth. Proceedings of a conference on human resources and labor relations in underdeveloped countries. Ithaca, N.Y.: Cornell University Institute of International Industrial and Labor Relations, 1954. 11". Pp. 251. $2.

[The subjects of the various papers and discussions at this Conference included demographic aspects of the industrialisation process, labour productivity and incentives, the problems of business leadership, the development of labour organisations and the importance of outside agencies such as the I.L.O.]

LEIBENSTEIN (H.). A Theory of Economic-Demographic Development. Princeton, N.J.: Princeton University Press (London: Geoffrey Cumberlege), 1954. 9½". Pp. v + 204. 32s.

[To be reviewed.]

MACK (R. P.). Factors Influencing Consumption: an Experimental Analysis of Shoe Buying. National Bureau of Economic Research, Technical Paper No. 10. New York: National Bureau of Economic Research, 1954. 10½". Pp. 121. $2.

[This is part of the large-scale inquiry being undertaken by Mrs. Mack on the behaviour of the shoe, leather and hide industries during business cycles. As the author points out, the findings are in some respects disappointing, since the influence of income on shoe sales in the period studied was so dominant that it is very difficult to establish unequivocal relationships with any other variables. However a great deal of valuable material is included in the monograph—notably in the treatment of the effect of consumers' stocks of shoes on buying—and even where the results are inconclusive the methods employed are worthy of study.]

MAISEL (S. J.). Housebuilding in Transition. Based on studies in the San Francisco Bay area. Berkeley, California: University of California Press (London: Cambridge University Press), 1954. 9½". Pp. ix + 390. 37s. 6d.

[This is a comprehensive survey of the structure of the house building industry in the San Francisco Bay area. The author gives a good deal of attention to problems of technique. He finds that construction costs (including profit margin) were appreciably lower in large firms than in medium-sized and small ones, and he expects to see in the future "a more rapid polarization of the industry into large merchant firms, at one extreme, and small contractors, at the other." The reduction in cost to the consumer which would be made possible by such a development is rendered greater by the fact that the relative lack of competition caused the profit margins of the large firms to be unusually high in the post-war period studied.]

MCNAIR (M. P.). Operating Results of Department and Specialty Stores in 1953. Boston, Mass.: Harvard Graduate School of Business Administration (London: Baily Bros. & Swinfen), 1954. 11". Pp. 62. 32s.

[The 34th report in this annual series introduces some important changes in the basic classification of expenses. Since recent changes in methods of expense classification have not yet taken full effect in retailers' practice, the present report is in some respects transitional. In 1953 sales in total were above those of 1952, but there was some falling off in the latter part of the year, reflecting the general decline in business activity. An interesting finding is that sales of mail-order stores fell relatively to those of department stores—a phenomenon observed also in the recession year 1949.]

MIKESELL (R. F.). The Emerging Pattern of International Payments. Essays in International Finance, No. 18. Princeton: International Finance Section, Princeton University, 1954. 9". Pp. 26.

[The author traces the origins and development of the various means of international payments that have been in use since the end of the war. He then goes on to consider some alternative ways in which the transition to a fully multilateral system might be effected. He contrasts the single-country approach to the problem, as provided for by the I.M.F. Agreement, with the group or regional approach, which, as things have turned out, appears now to have more promise. Professor Mikesell suggests that the success of E.P.U. provides some strong arguments for retaining it in existence during and even after the transition to a fully multilateral system, as one of a number of regional organisations with which the I.M.F. could work in co-operation.]

NATIONAL BUREAU OF ECONOMIC RESEARCH. Economic Progress and Economic Change, by S. FABRICANT. 34th Annual Report. New York: National Bureau of Economic Research, 1954. 9". Pp. 98.

[The National Bureau's thirty-fourth report takes its title from the introductory essay by Solomon Fabricant, who has now become its Director of Research in place of A. F. Burns. In this essay the author considers a group of well-known facts about the process of economic change in the United States: viz., that income per head has increased, that capital per head has increased at about the same pace, and that the share of labour in national income has remained roughly constant. He then proceeds to look at these facts from various angles and restates them in a number of different ways. Some of these methods of approach are interesting; others, it must be confessed, seem more confusing than enlightening. Is it really very helpful, for example, to restate the proposition that the ratio of capital to output has remained roughly constant in the form: output per unit of input (including both labour and capital) has risen less fast than output per head—and to compute a figure for the difference? The remaining sections of the report contain, as usual, very full and valuable accounts of research currently in progress under the National Bureau's auspices.]

PATTERSON (R. T.). Federal Debt-Management Policies, 1865–1879. Durham, N.C.: Duke University Press (London: Cambridge University Press), 1954. 8½". Pp. vii + 244. 34s.

[This monograph treats of the problems of management of the public debt in the post-Civil War period when, as in more recent times, the debt had grown to a size which caused it for a while to dominate the loan market. Although the basic problems of converting and funding the short-term debt and reducing the total amount of indebtedness occupy the centre of the picture, the author emphasises that the Treasury was fully alive to the effect of debt management policy on the supply of credit and on the foreign exchanges.]

PERRY (R. B.). Realms of Value. A critique of human civilization. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1954. 9½". Pp. vii + 497. 60s.

[To be reviewed.]

SCHUMPETER (J. A.). History of Economic Analysis. Edited from manuscript by Elizabeth Boody Schumpeter. New York: Oxford University Press (London: Allen & Unwin), 1954. 9". Pp. v + 1260. 124s.

[To be reviewed.]

SOCIAL SCIENCE RESEARCH COUNCIL. Labor Mobility in Six Cities. A report on the survey of patterns and factors in labor mobility, 1940–1950. Prepared by G. L. PALMER with the assistance of C. P. BRAINERD for the Committee on Labor Market Research. New York: Social Science Research Council, 1954. 9". Pp. v + 177. $2.25.

[This report is based on a very elaborate sample survey of individuals' work history financed by the United States Department of Air Force. The findings are for the most part not very different from what was known or assumed before; but some new conclusions are reached, and empirical support is given to others which formerly depended merely on plausible conjecture. A minority of workers are found to account for a disproportionate share of all job changes made, a quarter of the workers having held about half of the jobs. Job mobility is higher than average among new migrants to cities, but there is no clear difference between the occupational distribution of migrants and of others. Differences in labour mobility between the six cities studied are accounted for more by differences in the proportion of migrants to labour force than by differences in industrial structure. Barriers to mobility are higher between occupations than between industries.]

STOCKING (G. W.). Basing Point Pricing and Regional Development. Chapel Hill, N.C.: University of North Carolina Press (London: Geoffrey Cumberlege), 1954. 9". Pp. v + 274. 52s.

[The sub-title of this book is *A Case Study of the Iron and Steel Industry*. It was in that industry, in the form of "Pittsburg Plus" pricing, that basing-point pricing first became of significance. In recent years there has been in the United States a considerable volume of economic literature concerned with the questions whether such pricing can emerge in a competitive industry or only in conditions of oligopoly, and whether in consequence it is a practice which law and public policy should forbid and prevent. Dr. Stocking, head of the Department of Economics at Vanderbilt University, begins by explaining the mechanics and the logic of this form of pricing and goes on in four chapters to discuss its place and significance in the steel industry, and in particular to the Southern fabricators. He comes finally to the present state of the law on the subject and to his own views on a sound public policy. He himself is convinced that systematic basing-point pricing through concerted action, together with the present ownership arrangements, has tended to retard steel production in the South. He rejects mandatory f.o.b. pricing and the forbidding of business-men to absorb freight as an encroachment on freedom and inconsistent with the function of the entrepreneur. He suggests that the Federal Trade Commission should limit its attack to conspiracy and to two sets of circumstances under the Clayton Act, cases of the charging of "phantom freight" and cases where a multi-plant firm absorbs freight to put a local rival out of business. If such a policy is insufficient, then, he argues, a direct attack should be made on the industry's structure and ownership to force firms to act more like competitors.]

TINLEY (J. M.). South African Food and Agriculture in World War II. Stanford University Food Research Institute Series on Food, Agriculture and World War II. Stanford, California: Stanford University Press (London: Geoffrey Cumberlege), 1954. 9½". Pp. 138. 40s.

[This volume, in the same series as that by Sir Henry Knight noted above, is concerned with very different problems from those which India encountered during the war years. The main problems of South African food and agriculture during the war arose partly from the emergence of surpluses of products, such as fruit, for which export markets disappeared, partly through the cutting off of the rice imports consumed by the Asiatic population, but chiefly because expansions of wages and other incomes and of consumption of foodstuffs, combined with poor harvests, led to shortages. These led to the imposition of controls over production, distribution and prices, but not during the war years to rationing, though the latter was carefully considered as late as 1946 and only narrowly averted by a good crop. Professor Tinley, now of the University of California, writes with the authority of one who was born and educated in the Union and spent a large part of his working life there.]

ULMER (M. J.). Trends and Cycles in Capital Formation by United States Railroads, 1870–1950. National Bureau of Economic Research, Studies in Capital Formation and Financing, Occasional Paper 43. New York: National Bureau of Economic Research, 1954. 9". Pp. 70. $1.50.

[This monograph summarises the conclusions of the first part of a larger research project on capital formation by public utilities generally. The most striking finding is the secular decline in the capital–product ratio on American railroads. This ratio stood at 15 in 1882; it fell to 4 by 1914, and thereafter continued to fall, apart from an interruption in the depression of the 1930s, until in 1948 it was less than 3. The decline in the thirty years before 1914 is to be contrasted with the rise that took place in the capital–output ratio in manufacturing during the same period. The extent to which the intensity of capital utilisation on the railroads increased during these years provides a vivid demonstration of the degree to which the railroads were built in advance of the traffic in the first instance. Among the other conclusions emerging from Dr. Ulmer's monograph are that investment in railroads has followed a long-wave pattern (more or less like the building cycle) at least since 1890—the cyclical pattern of the 1870s and 1880s being more difficult to classify; and that there has been a long-term trend towards internal financing, which reached its culmination in the 1940s, when all the capital needs of the railroads were met out of earnings or depreciation allowances.]

WHITTLESEY (C. R.). Principles and Practices of Money and Banking. Revised edition. New York: The Macmillan Company, 1954. 9¼. Pp. v + 579. $6.25.

[The first edition of this book was noted in the ECONOMIC JOURNAL of 1949, p. 298. The revision includes some substantial alterations and additions. The author has brought his facts up to date and has changed the emphasis in some respects so as to reflect changes in the climate of opinion since the immediate post-war years when the book was written. The theoretical sections have been much enlarged.]

WOLFENDEN (H. H.). Population Statistics and their Compilation. Revised edition, with an appendix on some theory in the sampling of human populations by W. E. DEMING. Chicago: University of Chicago Press, for the Society of Actuaries (London: Cambridge University Press), 1954. 9". Pp. vii + 258. 56s. 6d.

[To be reviewed.]

French

ALLAIS (M.). Traité d'Économie Pure. Second edition, in four volumes and annexes. Paris: Imprimerie Nationale, 1954. 12". Vol. I: Pp. 279; Vol. II: Pp. 198; Vol. III: Pp. 301; Vol. IV: Pp. 352. 5500 French francs.

[To be reviewed.]

PERROUX (F.). L'Europe sans rivages. Paris: Presses Universitaires de France, 1954. 9". Pp. 668. 1,800 Frs.

[To be reviewed.]

Belgian

HEINEMAN (D. N.). The Changing International Environment. Brussels: Société Financière de Transports et d'Entreprises Industrielles, 1954. 8½". Pp. 24.

[The Chairman of the Standing Committee of the Société Financière de Transports et d'Entreprises Industrielles here surveys the changes that have taken place in the climate of political and economic international relations since the time when he began his business career at the beginning of the century. The greatest single change he considers to have been the growth in power and international influence of the United States. While not underrating the gravity of current international dissensions, M. Heinemann holds that some progress has been made towards the recognition of the community of interests between nations; and he is confident that further progress will be made along the same road.]

Dutch

HAAVELMO (T.). A Study in the Theory of Economic Evolution. Contributions to Economic Analysis, III. Amsterdam: North Holland Publishing Company, 1954. 8½". Pp. v + 114. 15s.

[To be reviewed.]

WILLIAMS (J. B.). International Trade under Flexible Exchange Rates. Amsterdam: North Holland Publishing Company, 1954. 10¼". Pp. 332. 37s.

[To be reviewed.]

Danish

PHILIP (K.). Inter-Governmental Fiscal Relations. Copenhage Institute of Economics and History, University of Copenhagen, 19 9". Pp. 171.

[The subject of this rather misleadingly entitled book is the financial relati ship between central and local governments. After discussing the principles practice of division of functions between the central government and local auth ties, and briefly describing the advantages and disadvantages of the vari forms of local taxation in use, the author goes on to treat in greater detail problem of grants-in-aid. The countries whose experience is chiefly discus are the United States, England, Sweden and Denmark. The author writes clea and with commendable brevity, and his book is a useful contribution to growing literature on the subject.]

Swedish

HEGELAND (H.). The Multiplier Theory. Lund: C. W. Gleerup, 1954. 9½". Pp. 261.

[To be reviewed.]

Irish

HALL (F. G.). The Inadequacy of Irish Commercial Profi Dublin: The Dublin Chamber of Commerce and the Federated Uni of Employers, 1954. 7". Pp. 19.

[Dr. Hall finds from a sample of forty-nine companies that since the war Ir commercial *profits* have risen in a considerably smaller proportion than t general price level, even if no regard is taken of the excess of replacement co over income-tax wear-and-tear allowances. In the companies studied the p centage ratio of dividends to capital employed was actually below the yield gilt-edged securities. Dr. Hall points out that the figures of capital employ necessarily involve an arbitrary element, but he does not attempt to calcul yields in relation to the actual market prices of the shares of the companies.]

Official

INTERNATIONAL

BANK FOR INTERNATIONAL SETTLEMENTS. Twenty-Fourth Annu Report. Basle: Bank for International Settlements, 1954. 12". P 230.

[This year's report contains a special chapter on the factors determining t rate of economic growth, as illustrated by recent experience in the United Stat and Europe. In accordance with its usual practice, the report devotes especi attention to developments in the sphere of finance and credit.]

INTERNATIONAL LABOUR OFFICE. Higher Productivity in Man facturing Industries. Studies and Reports, New Series No. 3 Geneva: International Labour Office, 1954. 9½". Pp. 195. 7*s.* 6

[This document contains the conclusions reached at a meeting of experts he under the auspices of the I.L.O. in December 1952. These conclusions are pr ceded by a report prepared by the International Labour Office staff for the u of the experts and subsequently revised; this report takes up the greater part the present volume. It contains an enumeration and discussion of the vario factors, both internal and external to the firm, that have been held to affe productivity. Much useful material is here gathered together and presented compact form. The authors did not, however, set out to provide any gener assessment of the relative importance of the various factors discussed.]

UNITED NATIONS. Catalogue of Economic and Social Projects of the United Nations and the Specialized Agencies, 1954, No. 5. New York: United Nations, 1954. 11". Pp. 157. 12*s.* 6*d.*

[This contains information both on the basic *continuing functions* of the various agencies and on special projects and reports. The full index enables the reader to locate without difficulty any of the very numerous United Nations publications enumerated.]

UNITED NATIONS. The Determinants and Consequences of Population Trends. A summary of the findings of studies on the relationships between population changes and economic and social conditions. New York: United Nations Department of Social Affairs, Population Division, 1953. 11". Pp. 404. 30*s.*

[To be reviewed.]

UNITED NATIONS. Enlargement of the Exchange Economy in Tropical Africa. New York: United Nations Department of Economic Affairs, 1954. 9". Pp. 59. 3*s.*

UNITED NATIONS. Review of International Commodity Problems, 1953. Prepared by the Interim Co-ordinating Committee for International Commodity Arrangements. New York: United Nations Department of Economic Affairs, 1954. 11". Pp. 94. 7*s.* 6*d.*

[Detailed descriptions of current supply and demand conditions for twenty-three commodities are preceded by a more general survey of the state of commodity markets during the year. Appendices contain the texts of the International Wheat, Sugar and Tin agreements arrived at during 1953.]

UNITED NATIONS. Rural Electrification. Reports prepared by the experts for the Technical Assistance Administration, Economic Commission for Europe and the Food and Agriculture Organisation. In two volumes. Geneva: United Nations Economic and Social Council, 1954. 11". Vol. I, pp. 163, 11*s.* Vol. II, pp. 165, 9*s.*

[The chief purpose for which this report has been prepared is to make available to less industrialised countries the experience gained in Europe and elsewhere in rural electrification schemes. Most of the report is devoted to technical problems, but it includes a section on economic, financial and administrative questions, of which the author is J. Mercier. The three chief issues discussed in this section are finance, tariffs and sales promotion.]

UNITED NATIONS. Rural Progress through Co-operatives. The place of co-operative associations in agricultural development. New York: United Nations Department of Economic Affairs, 1954. 9". Pp. 112. 5*s.*

UNITED NATIONS. World Economic Report, 1952–3. New York: United Nations Department of Economic Affairs, 1954. 11". Pp. 156. 12*s.* 6*d.*

UNITED NATIONS. Summary of Recent Economic Developments in Africa, 1952–3. Supplement to World Economic Report. New York: United Nations Department of Economic Affairs, 1954. 11". Pp. 83. 6*s.*

UNITED NATIONS. Summary of Recent Economic Developments in the Middle East, 1952–3. Supplement to World Economic Report. New York: United Nations Department of Economic Affairs, 1954. 11". Pp. 128. 9*s.*

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTUR ORGANISATION. Men against Ignorance. Paris: Unesco, 1953. 9 Pp. 82. 3*s*.

[This consists of a collection of short articles by four newspaper correspond on the progress of mass education in various parts of Asia, Africa and L America. The articles are interesting and well written, though q unsystematic.]

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTUR ORGANISATION. The Teaching of the Social Sciences in the Uni States. Paris: Unesco, 1954. (Obtainable in the United Kingd from H.M. Stationery Office.) 8½". Pp. 150. 6*s*.

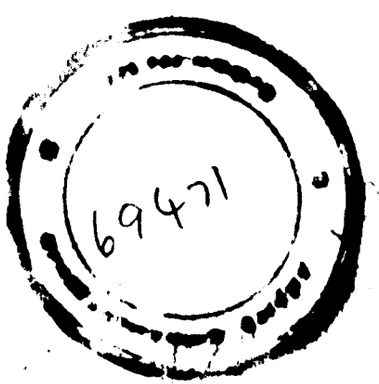
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTUR ORGANISATION. The University Teaching of Social Sciences: Int national Relations. A report prepared by C. A. W. MANNING on beh of the International Studies Conference: Paris: Unesco, 19 (Obtainable in the United Kingdom from H.M. Stationery Office.) 8 Pp. 100. 4*s*.

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTUR ORGANISATION. The University Teaching of Social Sciences: Politi Science. A report prepared by W. A. Robson on behalf of the Int national Political Science Association. Paris: Unesco, 1954. (Obta able in the United Kingdom from H.M. Stationery Office.) 8 Pp. 249. 8*s*. 6*d*.

[These are among the first volumes to appear in the series on the teach of the social sciences which is being sponsored by U.N.E.S.C.O. The volume the series fall into two classes, the one dealing with subjects and the other countries. The reports on the teaching of political science and internati relations were drafted by Professors Robson and Manning respectively on basis of information supplied by *rapporteurs* for the various countries. The re on the teaching of the social sciences in the United States is made up of chap by different authors each dealing with a different branch of the social scien edited and to some extent abridged by the general editor, Professor Ehrmann.

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTUR ORGANISATION. The University Teaching of Social Sciences: Ecc mics. A report prepared by C. W. Guillebaud on behalf of the In national Economic Association. Paris: Unesco, 1954. (Obtain in the United Kingdom from H.M. Stationery Office.) 8½". Pp. 11*s*. 6*d*., available to members of the R.E.S. at 7*s*. from the Assist Secretary, R.E.S., 6 Humberstone Road, Cambridge.

[To be reviewed.]



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