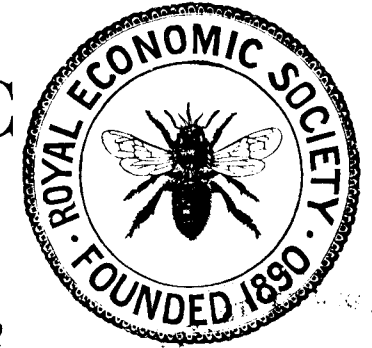


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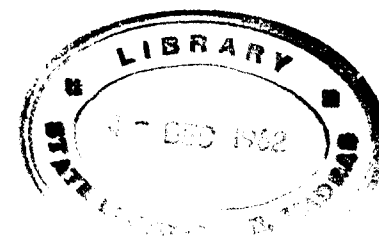
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THE ECONOMIC JOURNAL

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ACCUMULATION, PRODUCTIVITY AND DISTRIBUTION IN THE BRITISH ECONOMY, 1870-1938¹

1.0. It is possible to make some statistical application of the outline drawn in recent discussion of the theory of economic growth,² and this paper will present estimates of capital accumulation and the components of income in the United Kingdom since 1870, in an endeavour to throw light on the relation between accumulation and productivity, the determinants of the rate of accumulation, and the effect of accumulation on the distribution of income.

2.0. The materials and methods are described in the Appendix to this article, but it is well to notice some of their limitations here.

2.1. We have used two methods of estimating the growth of the real stock of capital. In the first, we take an estimate of the stock of capital in a base year, and cumulate on this our estimates of annual net investment; in the second, we apply to the flows of property incomes year by year the same number of years' purchase as were used to estimate the stock of capital in the base year; adjustments for changes in price levels being, of course, made in each case. The first method draws on a wide range of evidence for its estimates of annual investment, but will cumulate any systematic error in their coverage or composition. The second, by capitalising current profits, even after these have been deflated by a price index, gives implausible fluctuations of the inferred stock of capital in the short run, and holds good in the long run only if there has been no sustained change in the appropriate numbers of years' purchase; but it should be free from cumulative error. The two methods are independent save for a common entry in the base year. Their results prove to agree substantially in the extent of movement over each of our spans, 1870-1913 and 1924-

¹ We are indebted to Professor F. W. Paish and Mr. A. W. H. Phillips of the London School of Economics, to the former for advice and commentary throughout, to the latter specially for the form now taken by the argument in para. 9.

² R. F. Harrod, *Towards a Dynamic Economics*; J. Robinson, "The Model of an Expanding Economy," *Economic Journal*, LXII, March 1952, p. 245.

38, though there are divergences, not cyclical alone, on the way. This end-to-end agreement increases the probability that the coverage of our estimates of annual investment, and the assumption of long-run stability in the appropriate numbers of years' purchase, are both correct, but it could also arise from both erring in the same direction. We have adopted the results of the first method, which is undoubtedly preferable to the second in the short run, and does not much differ from it in the long.

2.2. The stock of capital, and annual investment, as we have delimited them, comprise houses, but not other consumers' equipment; and all revenue-producing buildings, equipment and stocks, except farmers' capital and the element of capital accretion in land. The stock of houses amounts in value to some two-fifths of the whole. No assets outside the United Kingdom are included.

2.3. The most doubtful elements in our estimates of annual net investment are depreciation, and changes in stocks. We have assumed that the trend of depreciation in 1870-1913 was that of national income, and in 1924-38 that of Schedule D allowances, while its year-to-year variations were at all times those of gross investment. Our estimates of changes in stocks rest on the assumption that the value of stocks is at all times 40% of national income.

2.4. The relation between the capital stocks of 1913 and 1924 is specially doubtful. The pre-war years we have based on Stamp's capitalisation of property incomes assessed in 1914; but his later published capitalisation of the assessments of 1928 uses different methods, and produces results which, if regarded as estimates of current replacement value, imply very improbable changes in the physical stock of capital since 1913. We have therefore made our own estimates for 1924, based for buildings on the changes in the total number of houses and in building costs since 1913, and for industrial and commercial capital on the assumption that real equipment per occupied person was the same in 1924 as in 1913.

2.5. The reduction of all buildings, equipment and stocks to a single physical total raises the familiar difficulties of index numbers, but in a special degree, because of the great changes which have occurred in the technical forms of capital goods. In effect, our procedure is to take certain standard components, those namely which enter into our index of the prices of capital goods, and, as other equipment crops up, enter it in terms of these components, according to its current opportunity cost. Alternatively, the procedure may be summarised as the comparison of capital stock and income with one another year by year, when

each is reduced from its current money value to real terms by an appropriate price index; and it is intelligible to say "nowadays we are carrying about four days' food consumption in our larder, but a year ago we were carrying five," even though the dietary at the two dates was different.

3.0. We shall express our main series of capital and income as amounts per head of the occupied population. If we wish to consider the rate of growth of aggregates, therefore, we have to multiply the changes in our own series by that in occupied population, which is shown in Fig. 1. Down to 1913 we have virtually a constant growth curve. War casualties, and the withdrawal of

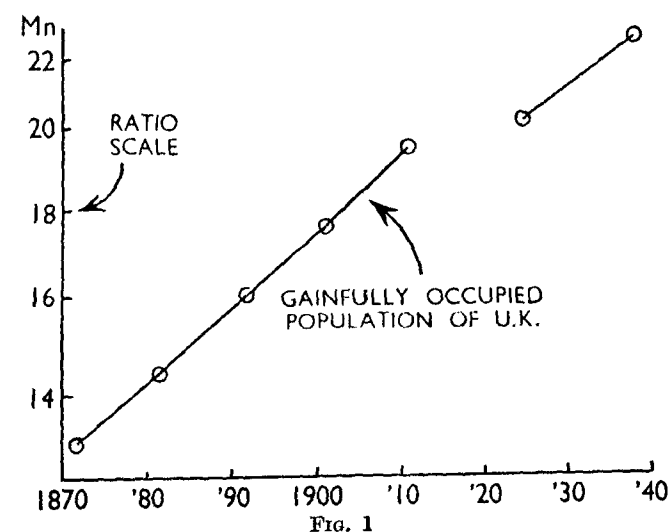


FIG. 1

Southern Ireland, enter into the difference between 1913 and 1924. The growth between 1924 and 1938 remains rapid, and is greater than that of population as a whole.

4.0. Our results show three relations which we may call stable, not because they do not change from year to year, but because the changes in them are not sustained within each of our spans 1870-1913 and 1924-38 considered separately. Between 1913 and 1924, it is true, shifts occurred which were not only big but persistent; yet the system, having accepted this displacement, proceeded with its former stability. It is also true, however, that the movements require explanation no less than the stability, and that the stability of the national aggregates does not appear in their components separately, and we must consider these things in their turn.

The three stable relations are illustrated by Figs. 2 and 3. They are:

4.1. Over the whole span, capital has grown at about the same rate as income: both real capital a head and real income a head have nearly doubled. This relation implies that technical change has followed in the main a particular course which we can express in various ways—

(a) Invention has been neutral, in Mr. Harrod's sense,¹ between labour-saving and capital-saving improvements.

(b) The amount of current productive powers embodied in equipment a head has been stable; while the equipment with which the average man worked was twice as great in 1938 as in 1870 if we reckon it in units of brick and steel, it was virtually unchanged if we reckon it with output per head as our unit.

(c) The capital coefficient, or ratio of capital stock to annual income flow, has been stable. It declined from about 3.7 in the seventies to 3.3 in the nineties, and rose again to 3.9 in 1912. In the inter-war years it moved from about 4.0 to 3.6.

(d) Output per physical unit of capital has been stable: the tendency to diminishing returns, with increases in the quantity of equipment of given types per unit of labour, has been offset by technical improvements in those types.

4.2. Earnings were much the same proportion of home-produced national income² just before 1914 as they had been in the 1870s, namely about 55%; between 1913 and 1924 the proportion was raised, to about 66%, from which it did not greatly diverge down to 1938. In the absence of marked divergences in the receipts of occupied persons other than wage- and salary-earners, this implies the similarly stable relations between real earnings per employee and real home-produced income (or output) per occupied person, which are shown in Fig. 2.

4.3. The rate of return on capital of all kinds (Fig. 3) relating yield in £s with replacement cost, both being expressed in 1912/3 £s, remained between 10 and 11% throughout most of 1870–1913; from 1924 to 1938 it fluctuated about a level of 7½%. Constancy in the rate of return on equipment, while output a head was rising,

¹ R. F. Harrod, *Towards a Dynamic Economics*, pp. 22–8.

² By home-produced national income we mean total net national income minus property incomes from overseas. It includes receipts from the overseas activities of British firms so far as these receipts are within the scope of the British tax-collector.

implies that the proportion of the average man's income that he must give up to obtain a year's use of a unit of equipment has

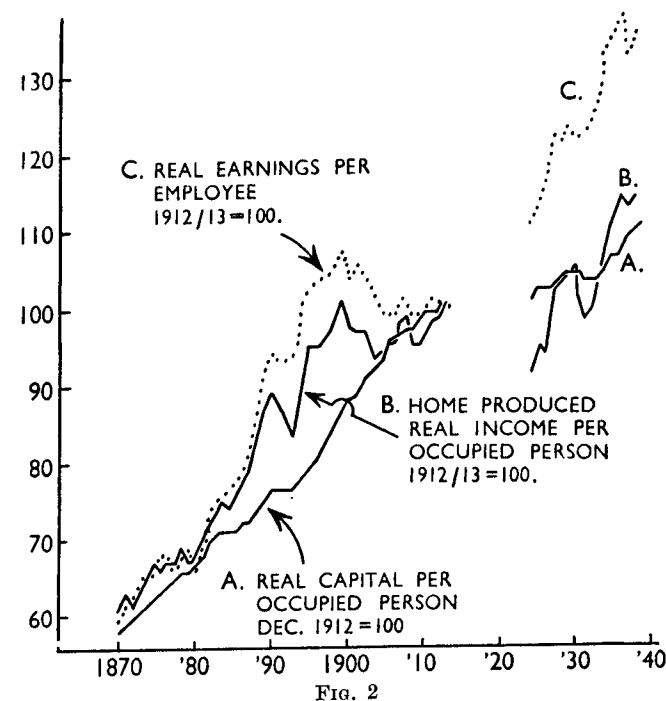


FIG. 2

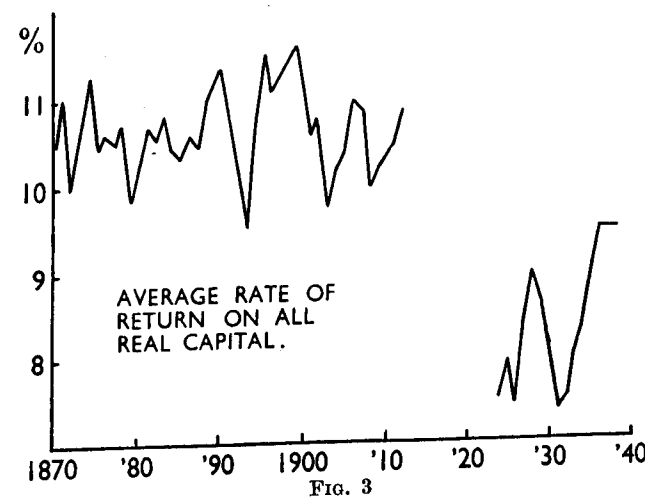


FIG. 3

fallen. To hire a wage-earner for a year he had to give up about 48% of his own annual income in the 1870s, about 55% in the 1930s; but the use for a year of a piece of equipment worth £100

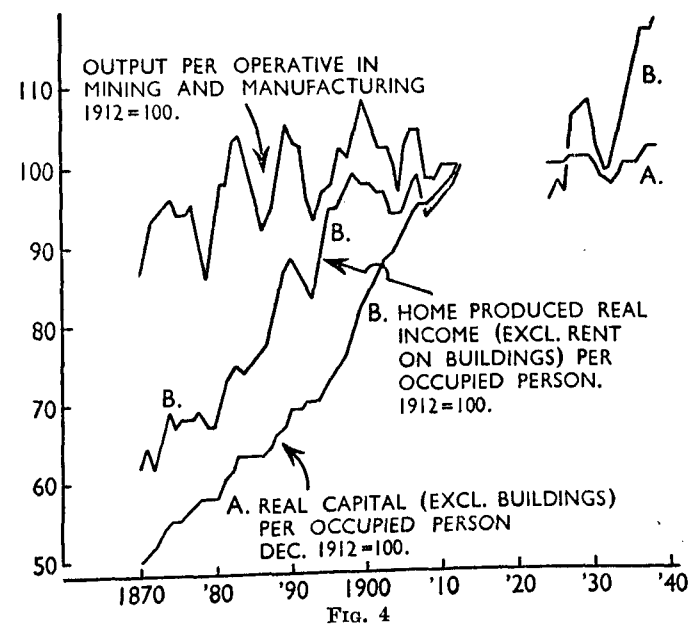
in 1912 cost him about 15% of his income in the 1870s, 10% in 1900-13, and 8% in 1924-38. Here is a virtuous spiral of accumulation: the more equipment was held, the lower was the cost of using equipment relatively to the cost of using labour, and the greater therefore the inducement to increase still further the equipment of the average worker.

5.0. These three relations are, of course, not independent. Given the neutrality of invention, for instance, and the stable ratio of earnings to total income, we can deduce the stability of the rate of return to capital: if capital and income have grown at the same rate, and earnings have been a stable proportion of all income, then the total return to capital has borne a stable ratio to all income, and hence to the stock of capital itself, so that the return to the unit of capital must have been stable. Similarly, we can show that if the neutrality of invention and the stability of the return to capital are given, the stability of the share of earnings in all income follows. Which elements are the actual determinants of economic growth and which is only their by-product? The neutrality of invention may be a fact of history, imposing a particular course of adjustment on the market-place; or it may be brought about in response to market forces, firms pressing harder to achieve economies in the construction of equipment, and improvements in its design, when the rate of return on existing types of equipment falls off. Of the other two elements, we might give primacy to the stable share of earnings in income, deriving it from a general propensity of firms to check divergences from some normal relation between direct cost and price,¹ in which case, given the neutrality of invention, the stability of the return to capital will be the by-product; or we might suppose that managerial adjustment acts directly to normalise the rate of return on capital, and in that case it will be the stability of the share of earnings which is the by-product. But in either case, the long-recognised fact of the comparative stability of the division of the national income between work and property now appears as the joint outcome of the neutrality of invention and a stable propensity of entrepreneurial behaviour. Both determinants are necessary: if output could be raised, for example, only by accumulating more and more capital per unit of output, then to stabilise the ratio of direct cost to price would progressively reduce the return per unit of capital, and to stabilise the return per unit of capital would lower the share of earnings in national

¹ Para. 13 of Phelps Brown and Hart, "The Share of Wages in National Income," *ECONOMIC JOURNAL*, LXII, June 1952, p. 246.

income. But when invention is neutral, a propensity of firms to stabilise either the ratio of direct cost to price, or the return per unit of capital, will result in the other being stabilised too. It may be that the line of determination runs differently in different firms or periods, that the active pressure has been in some times and places towards the adjustment of price to cost, and in others towards the maintenance of a normal dividend, but in the presence of the neutrality of invention each pressure reinforces the other.

6.0. The stability we have been considering did not exclude



some marked divergences. Fig. 2 shows how from 1880 to near 1900 real income rose faster than the stock of capital; then from 1900 to 1913 real income a head hardly rose at all, whereas the stock of capital a head continued to increase; but in the inter-war years, once again income rose faster than capital.

To study these changes it is useful to take the stock of buildings and the income received on them away from the totals of capital and income, and concentrate our attention on the remainder, and we may call the industrial sector. In Fig. 4 we can trace three phases in the relative movements of output and capital here. Through "the Great Depression" real output and the stock of capital moved together, both rising, when expressed as amounts per occupied person, by more than 40% in twenty-five years.

From 1895 to 1913 real output a head hardly rose at all, whereas capital a head rose by much the same annual increments as before. How capital and output were related in 1924, by comparison with 1913, we cannot exactly say, for our estimate of the change in the stock of capital over that interval is uncertain; but it does seem clear that in our third phase, from 1924 to 1938, real output rose substantially more than the stock of capital.

6.1. These divergences are too great to be dismissed as a matter of the error of estimate. Formally, the divergence from 1895 to 1913 represented a rise in the capital coefficient, and that between 1924 and 1938 a fall. More substantially, we may say that in the first period steady accumulation could only take the form of the extension of equipment of existing or only moderately improved types, but in the second a very low rate of accumulation went with the coming into being of new techniques, which only now obtained a general application and exploitation on the large scale. It is probable that before 1895 "the Great Depression" had been dominated by the same sort of widespread fruition of techniques, at that time those of steam and steel. Comparison in Fig. 4 of the movements of output a head in the whole national economy and within mining and manufacturing alone suggests that mining and manufacturing were already progressing more slowly before 1895, and that it was especially to economies of transport that the more rapid rise of national output before then was due. (A clear type of capital-saving change is the fuller exploitation of equipment such as a railroad which has had to be on the large scale from the first.) In the 1890s this impetus seems to have given out; adding one steel steamship to another, even though the new one was of improved design, could make no such difference as substituting a steel steamship for a sailing-ship. New techniques were being developed—electricity, the internal-combustion engine, chemical engineering and the synthetic fibres—but only after the First World War did they attain massive application. When they did, they brought about for the time being a substantial rise in the standard of living of a people which had then virtually ceased to add to its industrial equipment.¹

¹ This argument is developed more fully in Phelps Brown and Handfield-Jones, "The Climacteric of the 1890's," *Oxford Economic Papers*, October 1952. The sources of rising productivity in the inter-war years are examined in R. S. Sayers, "The Springs of Technical Progress in Britain, 1919-39," *Economic Journal*, LX, June 1950. Dr. Rostas gives the rise in output per wage-earner in British manufacturing, 1924-37, as 37% (p. 43 of his *Comparative Productivity in British and American Industry*).

6.2. But the fifteen years down to 1914 confront us with not merely a slower rate of rise in output a head than before, but a failure of output a head to rise at all, and this despite a continued steady rise in the physical amount of equipment a head, which increased by more than a sixth. This suggests the presence of some actively adverse factor, such as the exhaustion of natural resources might be in some economies, and in the coal-mines at least was in Britain at this time; or a decreased efficiency, or annual effort, of managers and men.

6.3. Whether the above lines of explanation be accepted or not, the facts they attempt to explain of themselves justify the inference that capital accumulation bears an uncertain relation to industrial productivity, the movements of which may be dominated for a quarter of a century at a time by the course of technical development, with little dependence on the contemporary rate of accumulation. This inference raises again the question whether the comparative stability of the capital coefficient which we have found from end to end of our period is only a matter of where those ends happen to fall, or whether there are in fact normative tendencies at work, to check the merely labour-saving extension of equipment of constant type, and push enterprise forward into the development of new and capital-saving techniques, so as to check the variation of the capital coefficient in the long run. The same inference suggests that it is not realistic, in models of the expanding economy, to postulate any constant relation between the rates of growth of capital and output. It also shows the danger, in practical planning, of counting upon any sustained rate of rise in productivity.

7.0. The separation of the building and industrial sectors also brings to light divergences in the rate of return on capital. The main data are shown in Fig. 5.

7.1. The rate of return which we estimate for buildings is the ratio of the total of rents (so far as this is recorded by the Schedule A assessments) to a total replacement value reckoned by valuing the physical stock of buildings at current building costs. This rate rose from 4 to over 6% between 1870 and 1895, and remained around 6% until 1913. In 1924 (though both terms of the ratio are now more uncertain) it seems to have been much lower again, at about 3½%, from which it recovered to around 5% in the later 1930s. The dominating factors here seem to be the stickiness of money rents, reinforced after 1913 by rent restriction, and the movements of the price level, including building costs. Thus the rate rose down to 1895 because money rents were slow

to fall at a time when building costs fell substantially¹; from 1895 onwards money rents must have risen nearly enough to keep pace with the rise in building costs; the doubling of costs between 1913 and 1924 was not matched by anything like an equal rise in rents, but costs then fell somewhat while money rents rose.²

7.2. In the sector which excludes buildings, and which we call the industrial sector, the rate of return was very stable, apart, of course, from cyclical fluctuations, at about 15%, from 1879 to 1900; it had been rather higher, around 17 and 16%, in the 1870s, and from 1900 to 1913 it was rather lower, around 14%. In the inter-war years it fluctuated about 11%. Over the period as

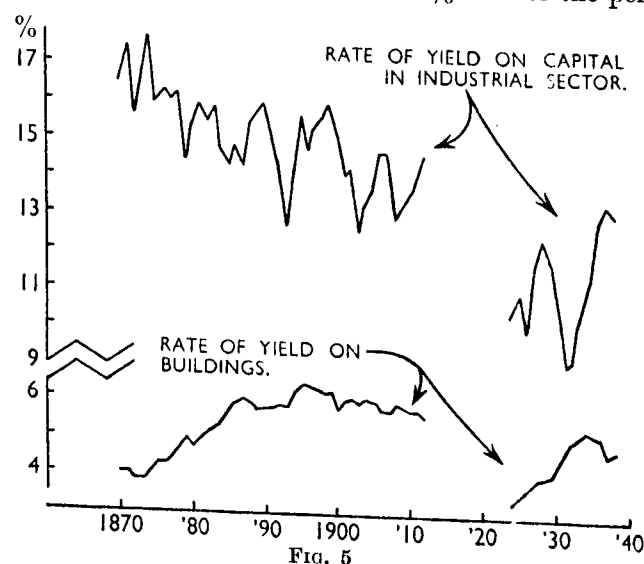


FIG. 5

a whole it might perhaps be held to show a falling trend, which agrees with expectations of a decline in the return to capital as accumulation proceeds; but the shift between 1913 and 1924 was the outcome probably of the post-war deflation, not of accumulation, and the expectations themselves are justified only in the absence of capital-saving innovations. We therefore do best to consider the successive levels of the rate of return each in its historical setting, rather than as the outcome of a single underlying relation.

¹ An index of rents in London and twenty large towns is given in *British and Foreign Trade and Industrial Conditions* (Cmd. 2337 of 1904) as follows:

1880	86.6	1890	98.9	1900	100
1885	90.1	1895	96.3		

² The index of rents within the coverage of the Ministry of Labour cost-of-living index number stood at 147 (1914 = 100) in 1924 and 159 in 1937.

The lower rate of return prevailing at home after 1900 throws its light on the growth of foreign investment after 1904. The money profits of existing enterprises were no doubt generally higher than in the last two decades before 1900, but the rate of return we have estimated here, being the ratio of the current receipts on a piece of equipment to its current replacement cost, comes nearer the return to new investment, and this seems to have been actually lower than before 1900.

8.0. We should expect to be able to trace some connections between the rate of return on real capital, the rate of interest, and the rate of accumulation.

The rates of return given here are not, it is true, direct estimates of the marginal efficiency of capital: they are marginal to the extent that they are reckoned on replacement cost, but they are derived from aggregate and not marginal receipts, and when the returns to existing equipment are as sticky as they are in housing, the changes of aggregate receipts may be a poor guide to those of marginal. But for most kinds of equipment a change which raises marginal yields will raise average too, so that though we do not measure the actual inducement to invest at any one time, we can at least expect that the changes in what we do measure will be in the same direction as those in that inducement.

The rate of interest is also difficult to measure. The yield of gilt-edged, it is true, is readily come by, and has some claim to be regarded as a basic rate; but to the extent that security-holders take trends of the purchasing power of money into account, a fixed-interest security becomes a peculiar type of asset. There is a margin of varying width, moreover, between the yield of gilt-edged and the rate of return required by the provider of funds to industry, and it is mainly the latter rate that concerns us here. An estimate of the changes in it may be made as follows. The price (p) of a given portfolio of industrial equities may be expected in the long run to vary *directly* with the general level of prices (π), and with the rate of return (R) currently obtained per unit of industrial capital, and *inversely* with the yield (y) required by the provider of funds to industry, or

$$p = \text{constant times } \frac{\pi R}{y}.$$

$$\text{Then } y = \text{constant times } \frac{\pi R}{p},$$

and we can calculate the right-hand side in index-number form from available indexes. The outcome is shown, together with

indexes of the yield on fixed-interest securities and of the general level of product prices, in Fig. 6.

Can these indications of changes in the price of loanable funds to industry be connected on the demand side with the rate of return to capital in industry, or on the supply side with the quantity of funds provided?

8.1. Comparison of the index of the yield of industrial equities (or terms of borrowing) in Fig. 6, with the rate of return on industrial capital in Fig. 5, shows both agreement and divergence. Between 1870-73 and 1887 both series came down by about an eighth, but then the rate of return rises again, until 1900, whereas

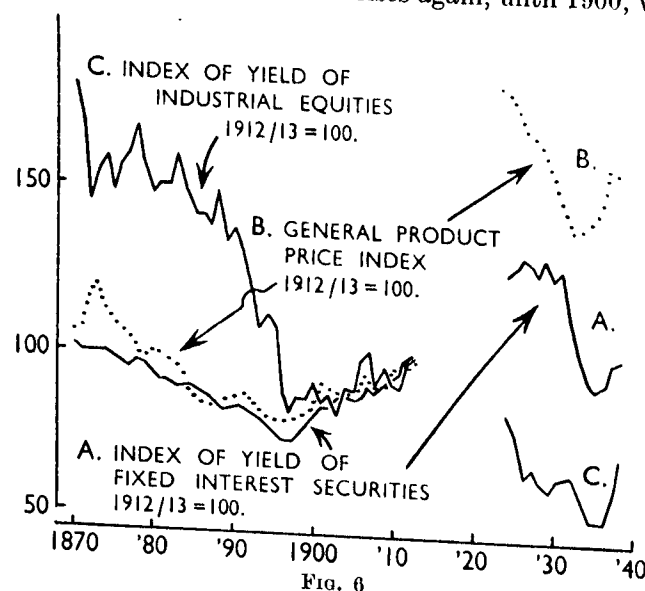


FIG. 6

the terms of borrowing come down by another 40%. After 1900 neither series changes very much down to 1912, but on the whole the rate of return comes down and the terms of borrowing go up. By 1924 there is the same big change in both, a fall of about a quarter; but thenceforward the rate of return lies about an upward trend, the terms of borrowing about a downward. In sum, there is enough agreement, especially in the big change between 1912 and 1924, to suggest some connection; and on general grounds we should not expect this connection to be close, because annual investment can make so small a proportionate change within a few years in the total stock of capital. What connection there was, moreover, was displaced in the 1890s by a big fall in the terms of borrowing; we naturally look for the cause of this in the contemporary increase in the supply of money. We conclude that the

terms of borrowing appear to be connected with the marginal efficiency of capital, but the relation between them can be displaced by changes in the supply of money without setting up quickly corrective reactions.

8.2. To trace the connection between the price of loanable funds and the quantity of funds supplied, we have on the one side our index of the terms of industrial borrowing, based on an index of home borrowers' equities alone, and on the other estimates of net accumulation at home and overseas. In a period which saw the drastic curtailment of overseas investment after the Baring crisis, and its six-fold increase again between 1903 and 1907, we cannot assume a constant agio between the rates at which the investor would lend at home and abroad, by virtue of which an index of the terms of home lending might serve for the terms of lending in the aggregate: in effect, if the investor worried less about the risks of overseas investment, he raised the terms open to him. We can, however, make some mental allowances: to be representative of the terms of borrowing of all kinds, our index of the terms of industrial borrowing should go above its actual course in the periods when overseas investment was rising relatively to home, that is, from 1877 to 1890, and from 1903 to 1913; and go lower in 1873-77, 1890-1903 and 1913-24. Now with these adjustments, the index does show quite close association with the movements of the proportion of national income saved, taking accumulation at home and overseas together. This proportion is shown in Fig. 7. From 1870 to 1913 it fluctuated cyclically about a norm which was near 10% most of the time, but seems to have been higher in the early 1870s, and was evidently rising through 1893-1913; in 1924-38 it had been pushed down, to 5 or 6%. Thus the facts do not disprove the hypothesis, that a higher price for loanable funds calls forth a greater supply, and conversely.

8.3. But they may have another explanation: they would have come about if fairly constant proportions both of earned income and profits were saved irrespective of the price offered for savings, and the proportion of profits saved were the larger.¹

¹ Let total savings S be made up of a constant proportion of earned income E plus a constant proportion of all other income, or property income, P .

$$S = \alpha E + \beta P$$

If we divide through by national income we can express each variable as a proportion of national income; let this be represented by the corresponding small letter:

$$s = \alpha e + \beta p.$$

$$e = 1 - p.$$

$$s = \alpha + (\beta - \alpha)p.$$

Also we have

Then

and s will vary in the same direction as p if $\beta > \alpha$

For in that case the proportion of national income saved would rise and fall with the share of profits in national income, and Fig. 7 shows that it has in fact done so. The effect would be even more marked if, as is likely, the proportion of profits saved rises and falls with the level of profits themselves. Two pieces of evidence support this interpretation. First, a detailed study of firms' reserve allocations in the inter-war years¹ shows that the proportion of profits put to reserve was generally higher, the higher were profits themselves: which departs from the assumption of

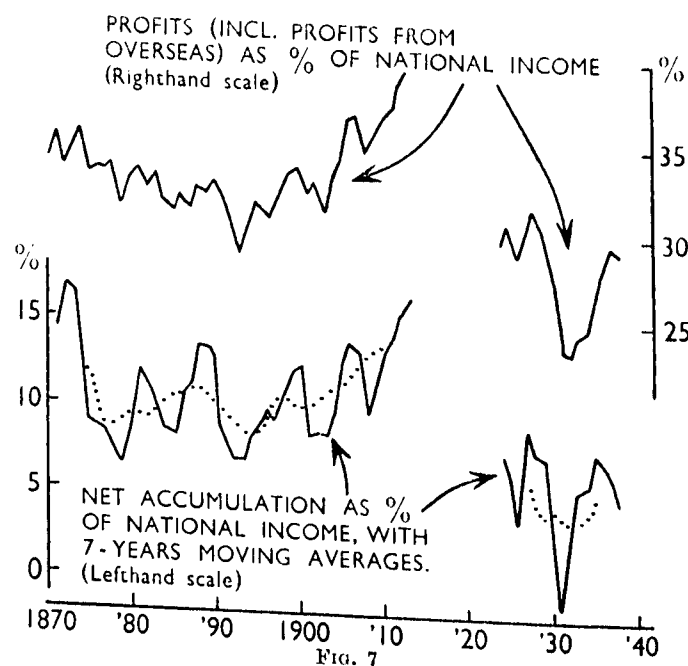


FIG. 7

simple proportionality in the direction which would bring out the observed effect *a fortiori*. Second, there are indications, independent of the data of Fig. 7, that the proportion of profits saved was substantially higher than that of earned incomes before 1914, though perhaps not in the inter-war years; and that the fall in the proportion of national income saved between 1914 and the inter-war years went with a sharp reduction in the proportion of profits, but not of earned incomes, saved. These indications are shown in Table I, which sets out particulars of some of the main components of saving out of earned income which we can trace through both periods. These particulars suggest that from 3 to

¹ R. S. Hope, "Profits in British Industry from 1924 to 1935," *Oxford Economic Papers*, N.S., I, June 1949, p. 2; especially para. 50 and Table V.

5% of wages and salaries were saved, before 1914 and in 1924-34; whereas the proportion of profits and rents saved was over 25% before 1914, but under 10% in 1924-34.

TABLE I

Certain Institutional Savings as a Proportion of Total Net Accumulation in the U.K.¹

	Average £Mn.	
	1901-13.	1924-34
1. Net increases in		
(a) Savings certificates	—	5.1
(b) P.O. and Trustee Savings Banks—		
(i) Due to depositors	4.2	14.6
(ii) Govt. stock held for depositors	1.4	-18.3
2. Building societies		
(a) Net increase in amounts due to depositors, shareholders and other creditors.	1.4 ²	37.3
(b) Effective repayment of mortgages, estimated at 5% of outstanding total ³	2.8	14.1
3. Life insurance		
(a) Net increase in funds	10.7	32.9
(b) 75% of claims paid, less surrenders ⁴	11.5	24.6
4. TOTAL (1)-(3)	32.0	110.3
5. Total net accumulation	242	207
6. Ratio of (4) to (5)	13.2%	53.3%

¹ See E. A. Radice, *Savings in Great Britain 1922-1935*. Data from *Statistical Abstract and Reports of the Chief Registrar of Friendly Societies*. We can trace categories 1 (b) and 3 back to the 1880s, when together they bore about the same relation to total net accumulation as in 1901-13.

² Average excludes 1911.

³ The total repayment of mortgages is believed to be too high as a measure of savings, because many repayments are made out of the proceeds of sale of the property, and it is believed that 5% of the balances due on mortgages is a better approximation to the actual savings under this head.

⁴ It is assumed that much the greater part, say three-quarters, of claims paid is reinvested, so that there is a channel of savings under this head additional to the net increase of insurance funds after claims have been met.

8.4. In sum, the record is consistent with a straightforward supply-and-demand analysis for loanable funds, in that changes in the terms of lending were fairly closely associated with those in the rate of return on capital, and when those terms were higher the proportion of national income saved was higher; but these changes in the proportion of national income saved were also closely associated with changes in the share of profits in national income, and there are independent grounds for believing that this association was significant. The mainspring of the whole action, indeed, may be the relative size of profits, and changes in this can account for the associated movements in the proportion of national income saved and in the rate of return on capital, without leaving more than a subsidiary influence to the supply-and-demand functions of the market for loanable funds. What

those changes in the share of profits do not at first seem able to account for, however, is the associated movement (subject to some displacement) of the actual terms of lending. We shall now show how changes in both the share of profits and the terms of lending can possibly arise out of one and the same process.

9.0. This account rests upon the observed association, which Fig. 6 illustrates, between the movements of the general level of prices and those of the terms of lending. It is true that between 1913 and 1924 the association was broken: evidently when prices and costs have been lifted bodily to a quite new level, there is no presumption that the terms of lending will have been raised too; but apparently when the trend of prices was gradually but persistently downwards, from 1873 to 1895, and similarly upwards, from 1895 to 1913, the terms of lending moved in much the same way. There is good reason to believe that this association extends much farther back. For despite the possible peculiarity of the price of a fixed-interest stock, the index of the yield of such stocks in Fig. 6 shows considerable agreement with the terms of lending to industrial borrowers, the gap which appears in 1924 being explicable by the great increase meanwhile in the quantity of fixed-interest stock; and if then the long-term course of change in the yield of fixed interest stocks can be taken as an indication of changes in the terms of lending to industry, we can trace these changes a long way back. In that case we have the well-established fact of the "Gibson paradox"¹—the inverse relation between the trend movements of the general price level and the price of Consols—to make it probable that throughout the nineteenth century and down to 1914 the terms of lending were stiffening when the general price-level was on an upward trend, and conversely.

9.1. How do we account for it? Keynes' explanation was, in effect, that the rates charged to borrowers are in practice sticky, so that when the rate of return on equipment (he says "the natural rate of interest") is rising, for example, and entrepreneurs are trying to borrow more, the actual terms of lending, though they do rise, do not do so quickly enough to keep the supply of savings and the demand adjusted, and credit is created in excess of voluntary savings, and prices rise; conversely on a fall. Now the mainspring of this process would be a change in the rate of return on equipment sufficiently sustained to keep ahead of the actual terms of lending that are moving after it for as much as twenty-five years together; but our present material

¹ J. M. Keynes, *A Treatise on Money*, II, c. 30 (viii).

makes it appear rather doubtful whether any such changes in the rate of return have taken place, and still more so whether there have been any that were coterminous with phases in the trends of prices and the rate of interest.

Any alternative explanation must provide, as Keynes did, both a motive force to carry the process on, and a mechanism which makes the terms of lending not merely higher when prices are rising than when they are falling, but successively higher at each stage of the rise. One such explanation begins by noting that whether the rate of interest moves in the same direction as the product price level, or the opposite, depends on the quarter from which the original impulse comes. There are two cases, well explored in the trade cycle, in which the rate of interest and the price-level move in opposite directions: when the original impulse comes from an expansion or contraction of the monetary base or of credit, and when it comes from a change in the liquidity preference of the public. Two other cases, at least, are conceivable in which the movements will be in the same direction. The first occurs when there is a change in profit expectations or the marginal efficiency of capital. The second is found when the price-level itself is taking the initiative, and moving under the influence of a preponderant expectation about the likelihood and feasibility of rises or falls in product prices, which itself has been built up by such factors as changes in raw-material costs, costs of manufacture and competitive pressures, and the expected availability of credit, which have been comprised under the term "the market environment."¹ Any explanation of trend movements of the price-level and the rate of interest persisting in the same direction through several trade cycles together must be based on factors capable of equal persistence. Profit expectations hardly seem capable of a life sustained beyond the phases of the trade cycle. But the factors of the market environment do have this longer life. We conceive them as imparting a gentle but continuing motion to the price-level, and this in turn puts some effective pressure on the monetary system to adapt the supply of money to it.² But this adaptation encounters resistance. If prices have risen, for instance, so that firms need to hold more units of money in the aggregate in their working balances, the monetary system may be able to provide some but not all of these, and the remainder must be sought by inducing transfer from idle balances: firms selling

¹ Cf. paras 15–17 of Phelps Brown and Hart, "The Share of Wages in National Income," *ECONOMIC JOURNAL*, LXII, June 1952, p. 246.

² Cf. *A Treatise on Money*, VI, 30, pp. 204–6.
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securities to raise cash provide this inducement by raising the rate of interest. Similarly, if prices have fallen sufficiently, despite any rise in physical turnover, to liberate working balances, the monetary system may make some reduction in the total stock of money, but some units surplus to working requirements may remain, and the holders of idle balances must be induced to take them over by a fall in the rate of interest. So long, moreover, as the liquidity preference of the holders of idle balances does not move against the gradual trend of prices, does not fall, for instance, when prices are rising, each such process will be cumulative, successive rises in prices requiring successive reductions of idle balances, and therefore successive rises in the rate of interest. Further, the banking system may not merely respond with some inertia to the prevailing pull, but may consciously react to check it, and such reactions will tend to raise the rate of interest when the pull is towards higher prices, and lower it when the pull is downward. In sum, then, we conceive of movements of the general level of prices, arising out of the market environment, which tend to move the supply of money with them; but this supply has inertia and sets up a drag, or corrective reactions, which show themselves in a progressively rising or falling rate of interest. The association between the movements of the terms of lending and the rate of return on capital would thus be explained by the influence on each, through different channels, of the trend of the product price level.

10.0. The tendency of the market environment, indeed, could be the *primum mobile* from which all our observed movements separately depend. When that tendency is upward, for instance, firms can maintain or widen their profit margins, and the rate of return on industrial capital rises; because profits are now becoming a larger share of national income, and at all times a higher proportion of profits than of other incomes is saved, the proportion of national income saved rises; because of the pressure of the rising flow of money payments on the supply of money, the terms of lending also rise. This explanation has the attraction of unity, and is consistent with, though of course not uniquely required by, the observed behaviour of the economy.

11.0. It remains to emphasise the importance of the changes between 1913 and 1924. They confront us with a geological fault in the economy. There was an unusually big distributive shift: rents and profits were squeezed, earned income rose from about 55 to over 65% of home-produced national income. With this went a fall in the rate of return on investment in buildings and industrial capital: we are not sure how the total of equipment

stood in 1924, compared with 1913, but unless the physical total had fallen absolutely, the rate of return on it must have fallen, and on the most probable estimate the average rate of return, which had lain between 10 and 13% from 1870 to 1914, lay around 7% in 1924-26, and was still under 9% when at its highest in 1937-38. As a source of savings, profits were not only relatively reduced, but subjected to much higher taxation, which also diminished the effective yield offered to induce abstention from consumption. Total accumulation, at home and overseas, fell sharply as a proportion of national income, from over 14% just before the war to less than 8% through most of the inter-war years. Despite a severe reduction in accumulation overseas, which indeed after 1930 became negative, the rate of accumulation at home was lower than before; between 1870 and 1913 the physical quantity of capital other than buildings per occupied person almost doubled, and its growth had never been interrupted for more than two years at a time, but from 1924 to 1938 it did not on balance rise at all; and though house-building was more active, only after 1932 did aggregate accumulation at home go on at its pre-war pace.

An explanation of the distributive shift has been attempted elsewhere.¹ In para. 8.3 above we have suggested its effect on the sources and total of accumulation. The outcome, in the virtual failure to make any increase for fourteen years in industrial equipment per head of the occupied population, was very serious: the more so because it occurred even after the virtual abandonment of foreign investment, itself necessary for the development of supplies of food and raw materials for an island conurbation. It may have escaped adequate notice at the time, partly because of the extent of current investment in building, as also in roads, which are not included in our figures of capital, and these do indeed provide some offset; but also because this proved to be a time of technical harvesting, when the wider application of new techniques raised productivity at home substantially despite the scantiness of industrial investment in the aggregate, and when the terms of trade moved in our favour.

12.0. SUMMARY

(i) The growth of the stock of capital in the United Kingdom between 1870 and 1938 has been estimated by two independent methods, the limitations of which are noted (paras. 1-3).

¹ Para. 18 of Phelps Brown and Hart, "The Share of Wages in National Income," *ECONOMIC JOURNAL*, LXII, June 1952, p. 246.

(ii) The estimates show three relations with some stability : (a) capital has grown at about the same rate as income ; (b) over each span 1870–1913 and 1924–38 earnings remained much the same proportion of national income ; (c) in each span the rate of return on capital was stable (para. 4).

(iii) Any two of these relations together imply the third. The stability of the division of the national income between work and property appears as the joint outcome of (ii(a)), *i.e.*, the neutrality of invention, and a stable propensity of entrepreneurial behaviour (para. 5).

(iv) (ii(a)) is qualified by a failure of real income a head to rise despite a continued rise in real capital a head between 1895 and 1913, and a rise in real income a head much greater than that in real capital a head between 1924 and 1938. Possible reasons for this are suggested (para. 6).

(v) (ii(c)) is qualified when buildings and other real capital are considered separately : they show different, and greater, movements in the rate of return (para. 7).

(vi) An index of the terms of industrial borrowing shows both agreement with the rate of return on industrial capital and some divergence ; what connection there was, was sharply displaced in the 1890s. There is a positive association between the movements of the terms of industrial borrowing and the proportion of national income saved (paras. 8.0–8.2).

(vii) The above observations are consistent with a supply-and-demand analysis for loanable funds, but would also have come about if fairly constant proportions both of earned incomes and profits were saved irrespective of the price offered for savings, and the proportion of profits saved were the larger. Some evidence indicative of this is cited (paras. 8.3, 8.4).

(viii) The suggestion in (vii) accounts for all the associated movements observed except that of the terms of lending. The “Gibson paradox” suggests how these terms may be affected by the predominant tendency of the market environment, which indeed could be the *primum mobile* on which the movements previously noted also depended (paras. 9, 10).

(ix) The extent and importance of the distributive shift between 1913 and 1924, and the associated change in accumulation, are emphasised (para. 11).

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APPENDIX

STATISTICAL METHODS AND SOURCES

1. The estimates of capital accumulation and stock for 1870–1913 are those given in Appendix C of Phelps Brown and Handfield-Jones, “The Climacteric of the 1890’s,” *Oxford Economic Papers*, October 1952. For 1924–38 we have used the same methods, *viz.* : (i) we made an estimate of the capital stock in a base year, and cumulated on this our own estimates of annual net investment, in £s of constant purchasing power over capital goods ; (ii) we took the flows of property incomes reported in the income-tax returns, reduced them to real terms by applying a general price index, and capitalised each throughout at the number of years’ purchase used in a base year.

2. *First Method.* (a) *Capital Stock in Base Year.* Sir Josiah Stamp, *The National Capital* (1937), made estimates from the tax assessments of 1927/28 and 1934/35. But the results are not comparable, at least as measures of physical stock valued at current replacement cost, with those he obtained from the assessments of 1913/14. His capitalisation of the Schedule A assessments shows houses as making up less than 31% of the total value of the capital within our scope, as compared with 41% in 1912. The new methods of capitalisation which he applied to Schedule D incomes yielded current values which, given the change in replacement costs, imply a rise in real equipment per head of 8 or 9% since 1913, which is very different from the negligible change, over the same span, in real home-produced income a head, and does not agree with what we know of the intervening years. But if we continue to apply the methods of capitalisation he used for 1914, we get a substantial reduction in equipment a head, which goes too far the other way, and takes no account of the known decline of the level of profits. We have therefore made our own estimates (figures in 1912/13 £s) :

(i) *Buildings.* We assume that the aggregate replacement cost of the stock of buildings in 1924 was that of 1912 (less Southern Ireland) raised in proportion to the increase in the total number of houses and the rise in building costs. £Mn. 3,519.

(ii) *All Capital other than Buildings.* We assume real equipment per occupied person the same in 1924 as in 1912 : £Mn. 4,910.

(iii) *Total.* £Mn. 8,429.

3. *First Method.* (b) *Annual Net Investment, 1924–38.* (i) We made the following estimates by detailed inspection of the Censuses of Production :

	1924.		1930.		1935.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.
Building and contracting . . .	283.9	173.9	336.3	216.3	375.1	240.1
Less non-revenue yielding construction . . .	80.4	44.0	107.2	61.5	101.6	58.2
Revenue-yielding building . . .	203.5	129.9	229.1	154.8	273.5	181.9
Mechanical engineering . . .	96.7	64.4	102.3	78.1	119.8	96.4
Electrical engineering . . .	47.8	38.4	62.6	50.3	66.1	53.1
Shipbuilding . . .	48.7	31.3	38.5	23.3	23.8	11.8
Commercial vehicles . . .	10.0	6.2	15.8	9.9	15.7	10.3
Railways . . .	82.0	24.9	67.7	16.6	60.0	15.7
	488.7	295.1	516.0	333.0	558.9	369.2

(ii) In each of the above six categories, we interpolated annual values, by use of an index of activity formed as follows :

(a) *Building*. Number of insured persons in employment in building and contracting (excluding public contracting), multiplied by *The Economist* index of building costs.

(b) *Mechanical Engineering*. Number of insured persons in employment in general engineering multiplied by wage-rate of engineering fitters (Bowley, *London and Cambridge Economic Service, Special Memo. No. 50*, May 1947).

(c) *Electrical Engineering*. Number of insured persons in employment in electrical engineering multiplied by same wage-rate as in (b).

(d) *Shipbuilding*. Net tonnage built in United Kingdom minus tonnage exported, multiplied by wage-rate for shipbuilding in Bowley (*op. cit.* in (b)).

(e) *Commercial Vehicles*. Number of commercial vehicles produced multiplied by retail-price index of commercial vehicles (*Motor Industry of Great Britain, 1939*, pp. 45, 47).

(f) *Railways*. Number of insured persons in employment as shop and artisan staff of railways (*Annual Railway Staff Returns*, Ministry of Transport) and in railway wagon and carriage building, multiplied by same wage-rate as in (b).

These indexes were used to predict net outputs for 1930 from the base of 1924, and for 1935 from the base of 1930; each difference between the predicted and actual outputs was then removed by a linear-trend correction over the span. For 1936-38 we extrapolated the trend corrections for 1930-35.

(iii) The above procedure yielded estimates of total annual new construction, which contains both net investment and replacement of scrapped equipment. The main evidence for replacement is in the Schedule D allowances for wear and tear. These show the amount of depreciation reckoned to be going on (Stamp, *British Incomes and Property*, pp. 178-80) rather than the amount of actual replacement, which is likely to vary in sympathy with new construction. This makes a case for taking a representative trend of depreciation, and modulating it proportionally to new construction. In the estimate for 1870-1913 (para. 1 above), the trend taken was that of national income, but in 1924-38 the Schedule D returns show a great rise in depreciation allowances, which, even after adjustment for the 10% rises in rates in 1931 and 1937, still more than double over a span in which national income, in current £s, ends much where it began. Even in the early 1920s, moreover, the Schedule D allowances bear a higher ratio to new construction than they did in 1907, and we seem to be confronted with a marked shortening of the average working life of industrial equipment. We have therefore taken as the trend of depreciation the trend of Schedule D allowances, after adjustment for administrative changes, and modulated this proportionally to the variation of new construction about its own trend for the period. To this we have added annual estimates of depreciation of buildings (so far as not covered by repairs), taken very roughly at 0.25% of total value; and of depreciation of Post Office telephones and telegraphs; together with a constant £Mn. 5 for other equipment not covered by Schedule D.

(iv) Net investment in stocks, in current £s, is estimated as in 1870-1913 (para. 1 above) at 40% of the first difference of national income in current £s.

(v) Net investment = new construction (ii) - replacement (iii) + addition to stocks (iv).

(vi) These workings give for 1938 an estimated net investment of £Mn. 276, which compares with an estimate of £Mn. 285 derived as follows from the White Paper on National Income (Cmd. 8203 of 1951).

(a) Gross domestic capital formation, £Mn. 845 (Tables 29, 30). This includes "the value of the increase in the quantity of stocks and work in progress" (pp. 58 and 74-5); and "all expenditure on the maintenance and repair of buildings and works" (note to Table 30, p. 74); but excludes

all maintenance and repair of plant and vehicles normally charged against current activity.

(b) Depreciation £Mn. 457 (Table 6, 16 (b)). This includes the repair of buildings included in (a) (p. 54) and also all replacement.

(c) Total net investment, (a) - (b), £Mn. 388.

(d) We have to deduct from (c) net investment in equipment not included in our scope, viz., in non-revenue-earning equipment, and in farmers' capital. From the Census of Production the former may be put at £Mn. 58 in 1935; if it grew proportionally to local authorities' capital outlay on this type of asset (Bretherton, Burchardt and Rutherford, *Public Investment and the Trade Cycle*, Table 30, p. 421) it may be put, with some allowance for depreciation, at about £Mn. 95 in 1938. Farmers' capital is put by Stamp at £Mn. 475 in 1935 (*The National Capital*, p. 18): a 2% increase would be about £Mn. 10. In all, say £Mn. 105, which deducted from (c) leaves around £Mn. 285.

The closeness of agreement with our own result is probably fortuitous, and may conceal differences in the components; but the order of magnitude is confirmed.

4. *Price Indexes*. (a) *Building Costs*. G. T. Jones's index of the selling price of building in London (*Increasing Returns*, pp. 268-9) through 1922; continued with such component series as are available through 1924; spliced in 1924 with *The Economist* index of building costs. As a check for the years 1914, 1924, we constructed another index independently from: (1) prices of certain building materials (*4th Interim Report of Inter-departmental Committee Appointed to Survey the Prices of Building Materials*, Cmd. 2153 of 1924), weighted according to the relative amounts required for the non-parlour house (Tudor Walters Committee, 1918: see H. Barnes, *Housing*, p. 293); (2) mean of wage-rates of bricklayers and their labourers (Bowley, *London and Cambridge Economic Service, Special Memo. No. 50*). We combined (1) and (2) with equal weights, and found an index (1914 = 100) of 192 for 1924, the same as that given by the original index.

(b) *Capital Goods other than Buildings*. (1) Through 1924, average values of iron and steel exports (Burnham and Hoskins, *Iron and Steel in Great Britain, 1870-1930*, p. 279); spliced in 1924 with average values of United Kingdom exports of machinery (Board of Trade). (2) Sauerbeck's index of raw material prices (Layton and Crowther, *Introduction to the Study of Prices*, p. 238). (3) Through 1924, index of prices of finished export goods (W. Schlote, *Entwicklung und Strukturwandlungen des englischen Aussenhandels von 1700 bis zur Gegenwart*, p. 180, col. 7); spliced in 1924 with average value of United Kingdom export goods (Board of Trade). Weights: 1912-24, (1) 1, (2) and (3) 3 each; 1924-38, (1), 36; (2) and (3), 32 each.

(c) *General Product Price Index*. (1) Wage-earners' cost of living (Bowley, *Wages and Income in the U.K.*, Table xvii, pp. 121-2); spliced in 1914 with Ministry of Labour index. (2) Money wage-rates (Phelps Brown and Hopkins, *Oxford Economic Papers*, II, 2, June 1950). (3) Prices of capital goods: (a) and (b) above combined with weights, 1912-24, 3, 7; 1924-38, 53, 47. (4) Mean of Sauerbeck's index of wholesale prices and Schlote's index of prices of finished export goods (sources as for (b.2) and (b.3)). Weights: 1912-24, (1) 60, (2) 10, (3) 10, (4) 20; 1924-38, (1) 50, (2) 10, (3) 15, (4) 25.

5. *First Method: Cumulation*. We applied the indexes of (1) building costs and (2) the prices of other capital goods (4(a) and (b) above) to our estimated net investment in (1) building and (2) all other forms of accumulation, to get annual investment in £s of 1912/13 purchasing power, and we then cumulated these net investment, in £s of 1912/13 purchasing power, and we then cumulated these series on the stocks at the end of 1924 to get estimates of the stock at the end of each year 1924-38, in 1912/13 £s throughout. We divided these by the number of occupied persons from Table II, p. 56, of Bowley's *Studies in the National Income, 1924-38*.

Second Method: Capitalisation of Income Flows. In the two sectors, buildings and other capital, we took the corresponding annual flows of rents and of Schedule D incomes, so as to calculate the number of years' purchase implied in each

sector. As the base date at which to make this comparison we took December 1925, as a change in the method of assessment leaves us without assessments strictly applicable to 1924. We then applied these numbers of years' purchase to the assessed incomes of other years. The Schedule A assessments were adjusted by us over the intervals between reassessment years. We deflated all income flows by the general product price index. The estimates obtained from the second method rise above those from the first after 1926 and are much more affected by the slump of 1931, but there is fair agreement in the extent of movement from end to end. See Table III, series 13, 14.

TABLE II
U.K.: 1870-1914

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1870	100	106	1,588	1,556	63	10.5	16.7	34.2	4.0	25	—	102	180
1871	100	108	1,614	1,609	65	11.0	17.6	35.4	4.0	57	14.5	100	170
1872	100	122	1,639	1,663	62	10.0	15.7	33.7	3.8	71	16.6	100	148
1873	106	125	1,667	1,730	63	10.6	16.8	34.9	3.8	60	16.3	100	155
1874	108	115	1,698	1,776	68	11.3	17.8	35.9	4.0	49	12.5	100	160
1875	104	106	1,738	1,802	74	10.4	16.0	33.3	4.3	26	8.9	98	147
1876	108	100	1,786	1,850	77	10.6	16.3	33.6	4.3	—	8.8	96	157
1877	107	96	1,842	1,903	82	10.5	16.0	33.6	4.4	—	16	8.7	95
1878	107	90	1,889	1,942	89	10.7	16.2	33.7	4.7	—	3	7.7	96
1879	106	85	1,925	1,961	97	9.8	14.3	31.0	5.0	16	6.7	95	156
1880	107	90	1,964	2,009	95	10.2	15.3	33.3	4.8	6	8.6	93	147
1881	103	86	1,999	2,081	101	10.7	16.0	33.7	5.0	42	12.2	90	151
1882	101	87	2,034	2,159	105	10.6	15.6	32.6	5.1	33	11.6	90	151
1883	98	84	2,070	2,226	108	10.9	15.9	33.4	5.2	27	9.8	89	161
1884	98	81	2,102	2,247	115	10.4	14.7	31.8	5.5	55	8.4	90	150
1885	97	78	2,133	2,276	124	10.3	14.4	31.3	5.8	44	8.1	89	142
1886	94	74	2,166	2,318	128	10.6	14.9	32.2	5.9	75	10.7	88	142
1887	93	74	2,198	2,366	132	10.4	14.3	31.2	6.0	81	11.1	86	139
1888	92	76	2,231	2,450	132	11.0	15.6	32.6	5.9	90	13.3	84	148
1889	98	77	2,264	2,548	132	11.2	15.8	32.4	5.8	80	13.1	83	134
1890	94	81	2,296	2,632	133	11.4	16.1	33.0	5.8	95	12.8	84	139
1891	92	80	2,331	2,674	135	10.8	15.1	32.1	5.8	55	8.1	84	133
1892	92	77	2,362	2,716	139	10.3	14.1	31.1	5.9	40	6.8	83	124
1893	87	75	2,396	2,748	143	9.6	12.5	29.0	5.9	47	6.8	81	108
1894	87	71	2,433	2,835	154	10.7	14.3	30.2	6.3	23	8.0	80	113
1895	88	70	2,478	2,834	161	11.6	15.8	31.9	6.5	27	8.9	76	110
1896	88	70	2,533	2,918	162	11.1	15.0	31.1	6.4	48	9.7	73	88
1897	90	69	2,577	3,129	163	11.3	15.4	32.0	6.3	32	9.3	73	83
1898	90	70	2,638	3,273	165	11.6	15.6	32.8	6.2	18	10.6	75	87
1899	93	77	2,711	3,416	168	11.7	16.0	33.5	6.2	32	12.2	78	87
1900	97	88	2,776	3,562	161	11.2	15.3	33.8	5.8	31	12.4	81	91
1901	100	83	2,834	3,654	170	10.6	14.1	32.4	6.0	14	8.5	84	86
1902	100	80	2,884	3,768	175	10.7	14.2	33.0	6.1	10	8.7	84	88
1903	100	82	2,939	3,858	177	9.7	12.5	31.4	6.0	23	8.6	86	81
1904	103	83	2,998	3,963	182	10.2	13.3	33.1	6.1	27	9.9	89	90
1905	103	84	3,066	4,092	184	10.4	13.7	34.6	6.0	66	13.1	87	89
1906	102	90	3,118	4,234	182	11.0	14.7	36.5	5.8	108	14.5	89	97
1907	103	94	3,160	4,346	182	10.9	14.7	36.7	5.8	139	14.0	92	101
1908	106	88	3,207	4,368	191	10.0	13.0	34.8	6.0	135	9.7	90	93
1909	103	87	3,249	4,450	193	10.2	13.3	35.7	5.9	113	11.6	92	96
1910	97	92	3,287	4,557	191	10.3	13.6	36.5	5.8	164	13.6	94	91
1911	97	94	3,311	4,662	191	10.5	13.9	37.1	5.8	193	14.3	95	90
1912	98	98	3,330	4,789	188	10.9	14.6	38.5	5.6	207	15.8	98	98
1913	102	102	—	—	186	—	—	39.5	—	212	16.1	102	102
1914	111	100	—	—	—	—	—	—	—	—	—	—	—

- G. T. Jones's index of cost of building, 1912/13 = 100.
- Index of prices of capital goods other than buildings, 1912/13 = 100.
- Estimated stock of revenue-yielding buildings, valued at replacement cost, reduced to 1912/13 £s. £Mn.
- Estimated stock of capital goods (within given categories) other than buildings, valued at replacement cost, reduced to 1912/13 £s. £Mn.
- Total rent of buildings in 1912/13 £s. £Mn.
- Profits and rent of buildings in 1912/13 £s, as % of total stock of capital (within given categories) valued at replacement cost, reduced to 1912/13 £s.
- Profits, in 1912/13 £s, as % of series 4.
- Profits (including profits from overseas) as % of total net national income.
- Rents of buildings, in 1912/13 £s, as % of series 3.
- Net overseas investment, estimates in current £s by A. K. Cairncross, given by J. H. Lenfant in "Great Britain's Capital Formation 1865-1914," *Economica*, May 1951, p. 180; here reduced to 1912/13 £s. £Mn.
- Total net investment (home and overseas) in current £s, as % of net national income in current £s.
- Index of yield of fixed interest securities, 1912/13 = 100.
- Index of estimated yield of industrial equities, 1912/13 = 100.

TABLE III
U.K.: 1924-38

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1924	184	197	212	181	130	165	53	+ 30	59	37	7.4	2,040
1925	180	191	205	176	138	162	58	+ 24	53	24	6.5	2,056
1926	176	188	206	168	147	152	62	+ 26	17	—	3.7	2,070
1927	169	185	203	164	160	176	70	+ 92	95	44	9.2	2,091
1928	168	181	199	161	157	181	69	+ 4	42	68	7.9	2,104
1929	165	177	193	159	160	184	72	+ 10	45	58	7.5	2,122
1930	158	173	193	151	155	178	69	+ 88	—	22	16	3.2
1931	147	168	190	142	150	155	67	+ 116	—	56	—	2,162
1932	142	160	182	135	128	145	58	+ 39	—	32	1.4	2,179
1933	140	158	176	138	141	145	67	+ 64	67	—	5.6	2,181
1934	141	157	175	137	156	173	75	+ 61	73	—	4	2,182
1935	145	165	188	140	182	187	84	+ 91	90	19	7.7	2,208
1936	149	171	195	144	206	229	92	+ 112	111	—	7.3	2,232
1937	159	183	207	157	225	267	96	+ 91	97	—	6.5	2,242
1938	167	185	207	160	225	266	96	+ 22	49	—	4.7	2,266

	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
1924	8,429	—	3,519	4,910	121	7.5	10.5	3.4	29.8	126	83	219
1925	8,541	8,541	3,577	4,964	129	7.9	11.0	3.6	31.0	128	77	212
1926	8,620	8,652	3,639	4,981	138	7.4	10.0	3.8	28.8	132	65	156
1927	8,785	9,174	3,709	5,076	149	8.5	11.8	4.0	30.5	130	68	298
1928	8,896	9,603	3,778	5,118	156	9.0	12.6	4.1	32.0	126	63	205
1929	8,993	9,640	3,850	5,163	164	8.7	12.1	4.2	30.6	132	61	211
1930	9,013	9,640	3,919	5,141	177	8.1	10.8	4.5	27.7	126	64	100
1931	9,060	9,471	3,986	5,086	197	7.3	9.1	4.9	23.2	128	65	48
1932	9,072	9,274	3,986	5,083	210	7.5	9.3	5.2	23.0	112	66	103
1933	9,127	9,639	4,044	5,151	219	8.1	10.3	5.3	24.3	101	59	210
1934	9,262	10,265	4,111	5,151	219	8.1	10.3	5.3	24.3	101	59	210
1935	9,410	10,434	4,186	5,224	225	8.4	10.9	5.4	24.7	95	52	231
1936	9,584	10,696	4,270	5,314	224	8.9	11.8	5.3	26.5	93	52	284
1937	9,787	10,913	4,362	5,425	225	9.5	13.0	5.2	28.4	93	51	339
1938	9,980	10,818	4,458	5,522	216	9.5	13.3	4.8	29.8	99	59	351
1938	10,125	10,493	4,554	5,571	224	9.5	13.2	4.9	29.2	100	71	277

- General product price index, 1912/13 = 100.
- General index of price of capital goods, 1912/13 = 100.
- Index of cost of building, 1912/13 = 100.
- Index of prices of capital goods other than buildings, 1912/13 = 100.
- New construction of revenue yielding properties by building and contracting, in current £s. £Mn.
- New construction other than building and contracting, in current £s. £Mn.
- Net investment in revenue yielding properties by building and contracting, in 1912/13 £s. £Mn.
- Net investment in stocks, in current £s. £Mn.
- Estimated net investment in capital goods other than buildings and contracting, in 1912/13 £s. £Mn.
- Net investment (including stocks) in capital goods other than buildings and contracting, in 1912/13 £s. £Mn.
- Net overseas investment, estimates in current £s. by the Board of Trade, here reduced to 1912/13 £s. £Mn.
- Total net investment (home and overseas) in current £s as % of net national income in current £s. £Mn.
- Estimated number of occupied persons (from Bowley, *Studies in National Income*, p. 56). 0,000's.
- Total capital stock (within given categories); estimated by cumulating annual investment, in 1912/13 £s. £Mn.
- Total capital stock (within given categories), estimated by capitalising annual property incomes in 1912/13 £s. £Mn.
- Estimated stock of revenue-yielding buildings, valued at replacement cost, reduced to 1912/13 £s. £Mn.
- Estimated stock of capital goods (within given categories) other than buildings, valued at replacement cost, reduced to 1912/13 £s. £Mn.
- Total rents of buildings in 1912/13 £s. £Mn.
- Profits and rents of buildings in 1912/13 £s, as % of series 13.
- Profits, in 1912/13 £s, as % of series 16.
- Rents of buildings in 1912/13 £s, as % of series 15.
- Profits (including profits from overseas) as % of total net national income.
- Index of yield of fixed-interest securities, 1912/13 = 100.
- Index of estimated yield of industrial equities, 1912/13 = 100.
- Total net home investment (incl. stocks), in current £s. £Mn.

7. The main series relating to capital accumulation, the occupied population, the rate of interest and price indexes are set out in the Appendixes of Phelps Brown and Handfield-Jones, "The Climacteric of the 1890's," *Oxford Economic Papers*, October 1952, and in the present Tables II and III. Other sources are: Fig. 2. B. Home-produced real income per occupied person: home-produced income in current £s from Phelps Brown and Hart, "The Share of Wages in

National Income," *ECONOMIC JOURNAL*, LXII, June 1952, p. 246; deflated by general product price index in present Tables II, III. C. *Real earnings per employee*: sum of Wages and Salaries in Phelps Brown and Hart, *op. cit.*, divided by total occupied population, so neglecting changes in proportion of that population who are employers and self-employed; deflated by product price index.

Fig. 4. B. *Home-produced real income (excluding rent of buildings) per occupied person*: deduction for rent from present Tables II, III; otherwise as under Fig. 2, B. C. *Output per operative in mining and manufacturing*: series 7 in Table II of Appendix B of Phelps Brown and Handfield-Jones, *op. cit.*

Fig. 6. A. *Index of yield of fixed-interest securities*: K. C. Smith and G. F. Horne, "An Index Number of Securities 1867-1914," *Royal Economic Society Memo No. 47*, June 1934, Table III; continued after 1933 from London and Cambridge Economic Series. C. *Index of yield of industrial equities*: index of industrials, same source as A above, divided into product of index of rate of return on industrial capital (present article, Table II, series 7, and Table III, series 19) and index of product prices (Phelps Brown and Handfield-Jones, *op. cit.*, and series 1 in present Table III).

Fig. 7. *Net Accumulation (Home and Overseas) as % of National Income*: national income from A. R. Prest, *ECONOMIC JOURNAL*, March 1948. *Profits (including profits from overseas) as % of national income*: home-produced profits from Phelps Brown and Hart, *op. cit.*, plus profits from overseas as in *ibid.*, Appendix A.

FOREIGN EXCHANGE RATES AND MONOPOLISTIC COMPETITION

"The role of monopolistic and imperfect competition in actual international trade is crucial and . . . needs extensive further examination."

P. A. Samuelson

(*The Economic Journal*, June 1952)

1. THE PROBLEM

IN their brilliant pre-war essays, Mrs. Robinson¹ and Professor Machlup² have presented the theory of foreign exchanges. Both analyses were purely deductive, and both ran in terms of elasticities of supply of and demand for imports and exports. The same was true of a third outstanding contribution, A. J. Brown's article in *Oxford Economic Papers*,³ whereas Hirschman⁴ presented an analysis in terms of elasticities of demand for foreign exchange. A summary of post-war empirical estimates of the elasticities of supply of and demand for imports and exports is presented by A. J. Brown in his recent contribution to *Oxford Studies in the Price Mechanism*.⁵

As analytical tools, the demand curve assumes pure competition among buyers, and the supply curve assumes pure competition among sellers. Markets for manufactured consumers' goods may satisfy the former condition, but they almost never satisfy the latter. The supply curve clearly must be discarded. But the existence of a unique demand curve faced by the firm also assumes that the product is set and that selling effort is either non-existent or constant. Such is clearly not the case of British export of men's clothing, automobiles, whisky and other consumers' goods. How can the theory of foreign exchanges be modified accordingly?

¹ Joan Robinson, "The Foreign Exchanges," *Essays in the Theory of Employment*, 2nd ed. (Oxford: Basil Blackwell, 1947), reprinted in *Readings in the Theory of International Trade* (Philadelphia: The Blakiston Company, 1949), pp. 83-103.

² Fritz Machlup, "The Theory of Foreign Exchanges," *Economica* (November 1939 and February 1940), also reprinted in the Blakiston *Readings*, pp. 104-58.

³ A. J. Brown, "Trade Balances and Exchange Stability," *Oxford Economic Papers* (April 1942), pp. 57-75, reprinted in *Oxford Studies in the Price Mechanism* (Oxford: At the Clarendon Press, 1951), pp. 75-90.

⁴ Albert O. Hirschman, "Devaluation and the Trade Balance: A Note," *The Review of Economics and Statistics* (February 1949), pp. 50-3.

⁵ A. J. Brown, "The Fundamental Elasticities in International Trade," *Oxford Studies in the Price Mechanism*, pp. 91-106.

2. BRITISH EXPORTS

First, let us examine *price* competition. Let a British product be sold in a United States market for differentiated products. But let product differentiation be given once and for all. In other words, for the moment products and selling effort are not assumed to be variables in our problem. Only price adjustment is considered. In the United States market there exists a firm demand curve, faced by the British firm, for the British product. The curve is determined by tastes and desires, national income

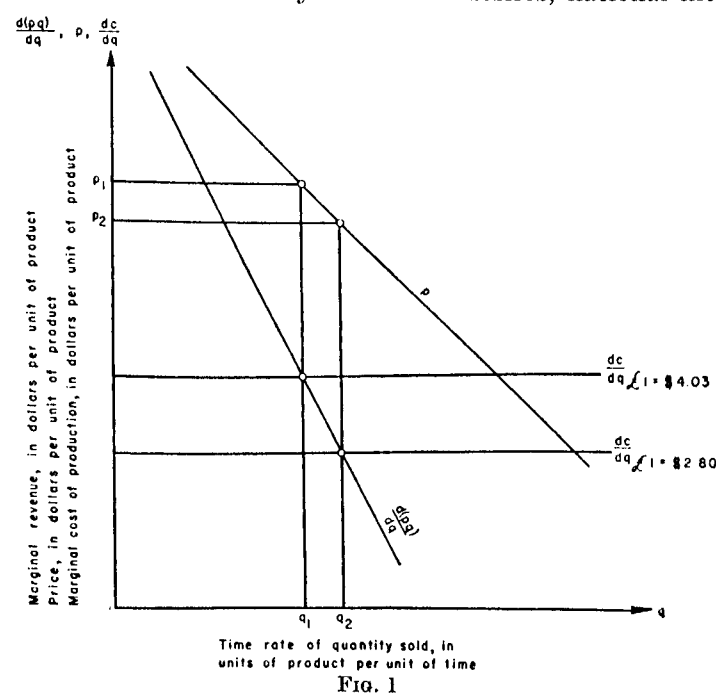


FIG. 1

and competition in the United States market. The demand curve is a price-quantity relationship, and if price is expressed in dollars per unit of product the demand curve is, to all intents and purposes, unaffected by the dollar-pound exchange rate. Let the demand curve be p in Fig. 1. According to established theory, price is determined by demand and cost. There also exists a British marginal-cost curve of the British product. Assume that no non-British factor inputs are required. The British marginal-cost curve is then determined solely by *British* factor prices and *British* input-output relationships. Assume that both determinants are unaffected by the exchange rate. The British marginal-cost curve, expressed in pounds per additional unit of product, can then be translated into a dollar curve by multiplying

all the ordinates of the curve by the exchange rate. In Fig. 1 the same British marginal-cost curve has been translated into two different dollar curves, one based on the exchange rate $\text{£}1 = \$4.03$, the other based on $\text{£}1 = \$2.80$. The curves are labelled dc/dq with the exchange rates as subscripts.

From Fig. 1 it is readily apparent that devaluation of the pound from $\$4.03$ to $\$2.80$ will reduce the optimum American price of the British product and expand American sales. Gross dollar revenue will increase for the following reason. The theoretical

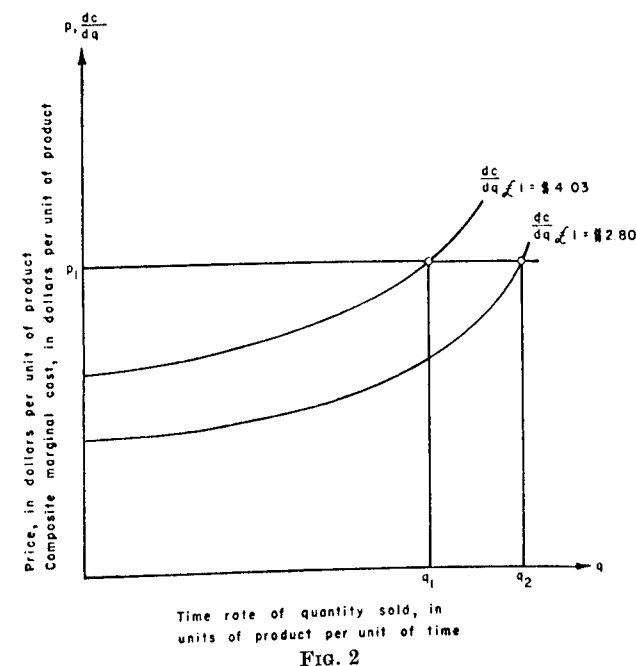


FIG. 2

optimum output is the output at which marginal cost and marginal revenue are equal. Since marginal cost is always positive, marginal revenue is also positive. Therefore, if marginal cost—still positive—is reduced gross revenue increases. This, of course, is only an alternative way of saying that the elasticity of demand in the optimum point is always numerically larger than unity.

Second, let us examine *non-price* competition. Let price be fixed at p_1 . Product and selling effort are now regarded as variables. At a fixed price there exists in this case what the present writer has called the *composite* marginal-cost curve.¹ In Fig. 2, that curve is dc/dq at price p_1 . The composite marginal-

¹ Hans Brems, *Product Equilibrium under Monopolistic Competition* (Cambridge, Mass.: Harvard University Press, 1951), Chapter 5, particularly pp. 76-87.

cost curve is a generalisation of Professor Chamberlin's marginal cost curve MM' in his Fig. 22 in *Monopolistic Competition*, p. 142. The difference is that Chamberlin's curve is a combined curve of marginal costs of production and marginal selling outlay in case the product is set, whereas our composite marginal-cost curve also includes the marginal costs of *varying the product*.

(a) If we could disregard selling costs completely we would once again assume that no non-British factor inputs are required. Thus varying the product could be done by British designers and British suppliers of materials, and routine production of the new product could, perhaps, be assumed to require no non-British factor inputs. Once again we would have a purely British marginal-cost curve that could be translated into a dollar curve by multiplying all the ordinates by the exchange rate. Reducing the exchange rate from \$4.03 to \$2.80 would thus reduce in the same proportion all the ordinates of the composite dollar-cost curve. Consequently, the point of intersection between price line on the one hand and the horizontal price line on the other, would move to the right. This point indicates maximum profits or, more specifically, the "product equilibrium." Thus in Fig. 2 volume increases from q_1 to q_2 . Dollar revenue earned by the British in this case is price times number of units sold, and therefore dollar revenue will increase from p_1q_1 to p_1q_2 if the exchange rate is reduced from \$4.03 to \$2.80.

(b) However, we cannot disregard selling costs. From the point of view of international trade, selling costs are peculiar in that the selling job has to be done in the export market itself. Selling British products in the United States means buying space in United States newspapers and magazines, buying time in United States networks, employing United States residents as salesmen. Thus selling the product does require the input of non-British factors. In this case, what happens to dollar revenue earned by the British? For one thing, it should be remembered that sales can be made either by varying the product or by impressing the buyer's mind. Product variation and selling effort, in other words, are substitutes. The reduced exchange rate will encourage substitution of product variation for selling effort, for in terms of dollars the reduced exchange rate reduces the cost of varying the product, whereas the cost of impressing the buyer by means of selling effort is unaffected. Our result is that at any given price and volume, total selling cost is down. However, volume is up from q_1 to q_2 . But marginal selling cost must always be less than price, for the latter also includes marginal profits and

labor and material costs of production. For both these reasons, then, the difference between price times volume, on the one hand, and total selling cost, on the other, is larger than before. But that difference is precisely the dollar revenue earned by the British.

3. BRITISH IMPORTS

Essentially the same technique of analysis can be applied to British imports. Fig. 3 shows *price* competition. Taking product and selling effort as constants, there exists in the British market a demand curve for the imported, U.S.-produced, commodity. The British demand curve can be translated into a

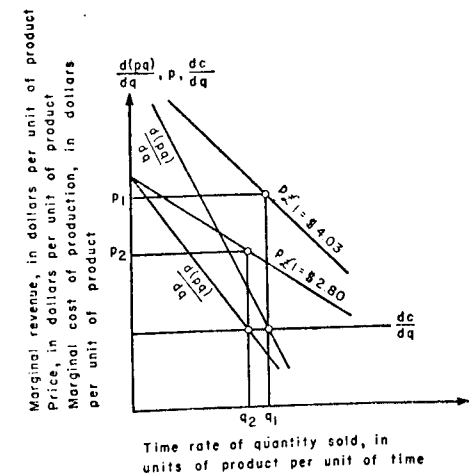


FIG. 3

dollar curve by multiplying all the ordinates of the curve by the exchange rate. Two positions of the curve are shown in Fig. 3. There also exists a dollar marginal-cost curve of the imported commodity. Since this curve is determined by United States factor prices and United States input-output relationships it is unaffected by the exchange rate. From Fig. 3 it is seen that a devaluation of the pound will reduce British gross dollar expenditure, for the rectangle representing that expenditure has its height as well as its base reduced, $p_2q_2 < p_1q_1$.

Fig. 4 shows *non-price* competition. In this case the British price in terms of pounds is assumed to stay unchanged. In terms of dollars, therefore, the British price is reduced by devaluation. United States dollar costs of production are unaffected by devaluation, but British selling costs are reduced in terms of dollars. The composite dollar marginal-cost curve is thus reduced *less* than

the dollar-price line, and their intersection point consequently moves left. In Fig. 4, volume is reduced from q_1 to q_2 . What is the effect upon British dollar expenditure? The reduced exchange rate will encourage some substitution of selling effort for

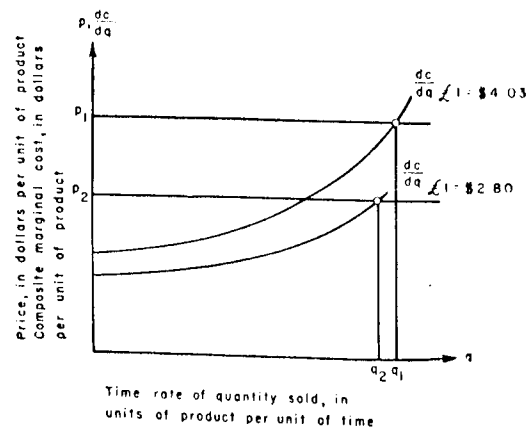


FIG. 4

product variation; add to this the fact that marginal selling cost is always less than price, and the result is that the difference between price times volume on the one hand and selling cost, on the other, is smaller than before. This difference is the British dollar expenditure.

HANS BREMS

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COMMENT

1. The foregoing article is an elegant and, within the limits of its assumptions, unexceptionable piece of analysis. By relating the theory of imperfect competition to foreign-exchange-rate changes Professor Brems touches on a matter of topical and very serious practical importance. I wish to put forward the view that the assumptions are inappropriate and already somewhat *démodé* as normal tools for the analysis of imperfect competition, that, if these are modified, his main conclusions cannot be upheld, and that, in the circumstances of to-day, they could well be used as arguments in favour of dangerous courses.

2. I will confine myself to the first passage of the second section. Similar arguments lie, *mutatis mutandis*, against the remaining passages of the note.

3. The key points in Professor Brems' argument are: (i) that the demand curve "is determined by tastes and desires, national income and competition in the United States market" . . . and "to all intents and purposes unaffected by the dollar-pound exchange rate," and (ii) that, if there is equilibrium prior to the exchange-rate change, the elasticity of demand is numerically larger than unity. It follows that after the exchange-rate change, the demand curve, expressed in dollars, will be unchanged, the marginal cost of the representative British exporter, expressed in dollars, will be reduced and, the elasticity of demand being greater than one, the British exporter will have the opportunity, which he would doubtless take, of profitably increasing his gross dollar receipts.

4. From the early days of the theory of imperfect competition it was recognised that the complete independence of the demand curve confronting the particular producer and its derived marginal revenue curve could not be upheld if the situation was notably oligopolistic. If each supplier was sufficiently important for other suppliers to take note of any change in his price policy and react to it, the analysis had to become a little more complicated. More recently it has been recognised that similar considerations apply if the supplier is too small to have notice taken of him. Each supplier in imperfect competition, however small, has constantly to consider whether the price he is charging is vulnerable and likely to cause an erosion of his own market over a longish period. He will normally tend to temper his price policy by having regard to its likely long-run effects in securing his own market against potential competitors.

5. If this doctrine is applied to the case before us, Professor Brems' first point, as stated in paragraph 3 above, ceases to be valid. The elasticity of the demand curve in the United States for the product of a particular British producer can no longer be regarded as dependent on United States conditions alone, but also depends on the competitive potential of the British producer's British rivals. It follows that the demand in the United States market for the product of a particular British firm is *not* independent of the dollar-pound exchange rate. It also follows that, if the pound is devalued, the United States demand curve confronting the individual British producer simultaneously drops, since the drop in the exchange rate puts his rivals in a position to offer lower quotations. (It should be noted that if other countries join in the devaluation the British producer will have to think of the competitive potential of rivals in those countries also.)

6. Professor Brems' other point also becomes invalid. While it is doubtless true that in equilibrium the United States demand curve confronting each separate British producer must have elasticity greater than one, it does not follow that the United States demand curve confronting the British producers of a given article *considered as a group* has elasticity greater than one. The words "competition in the United States market" in the passage quoted above are ambiguous, since it is not clear if competition is intended to refer to American competition only, or also competition by third country, *e.g.*, German, producers. If we ignore third countries, it is quite possible for the elasticity of demand for the product of the British producers as a group to have less than unitary elasticity; in such conditions, owing to the drop in the demand curve caused by the change in the exchange rate, each producer might correctly judge that he had to lower the dollar price merely to maintain previous sales, and total dollar proceeds accruing from the sale of the article in the United States would accordingly fall. It might well happen that the demand for the product of the British producers as a group was rendered elastic only by the presence of third-country competition. If that were so, the drop in the exchange rate would be expected to increase dollar earnings, *provided that the third countries did not also devalue, but not otherwise*. But it cannot be asserted *a priori* that the United States demand for the product of the British producers as a group is elastic, even taking into account third-country competition. If it were inelastic British dollar proceeds would fall even if the third countries did not also devalue.

7. It is not to be inferred from the foregoing arguments that a devaluation would be likely to make the dollar proceeds of British exports fall, but only that an *a priori* presumption that they would rise cannot be established by Professor Brems' reasoning.

8. Some time after the devaluation of 1949 I had occasion to discuss with a group of British producers the point that some British exports, particularly from heavy industry, were being under-priced in sterling in relation to what foreign markets would bear, to the detriment of the British external balance of payments. I was met with the reply that it was the habit of the firms in question to charge honest prices, *viz.*, prices related in some way to sterling costs of production, that it was not their practice or part of their expertise to soak their markets and that they were convinced that a conservative pricing policy would be of greater benefit in the long run. To this I replied by suggesting

that an exception to their normal procedures might be made in the special circumstances of the period after devaluation, since Britain had been going through an exchange crisis, and it was in the minds of those who judged devaluation a suitable remedy that it would give an opportunity for Britain to enlarge her foreign-exchange receipts. This opportunity would be in large part missed if those producers, who could maximise gross receipts in the new situation by marking up sterling prices, failed to do so. The group in question acknowledged that there was force in this, but adduced an objection which they claimed to be insuperable. If they were to pursue such a policy with success, they would have to discuss matters with *their British competitors*, and that they were altogether unwilling to do.

9. It need not and should not be inferred that all British producers were in the circumstances or frame of mind outlined in the foregoing paragraph. Some may have been in a near-monopolistic position, others may have been willing to concert plans with competitors and others again may have been able to find a way amid the thickets of competition to frame a price policy which gained them increased dollar proceeds. But if a substantial number were in the situation described above, that would be sufficient to invalidate the *a priori* presumption of a probable net gain of dollar proceeds for Britain.

10. In 1948 the dollar value of the exports of British finished manufactures to the United States was \$165 million; in 1950 it was \$173 million.¹ This increase was less than the rise in United States national income, expressed in dollars, which was 10% in that period. At the same time the *volume* of British exports of finished manufactures to the United States rose 30%. While no hard-and-fast inference can be made from these figures, they do not suggest a price elasticity of demand above one. At the same time the dollar value of British exports to the Latin American area, where United States competition is strong, fell, although their volume rose.

11. Americans sometimes show mental resistance to accepting the view that internal competition in Britain might have been an obstacle to British producers choosing freely the sterling prices that would have maximised dollar proceeds, to choosing freely, that is, whether to retain the pre-devaluation sterling prices or to mark them up by part or all of the full amount of devaluation. There is an old doctrine that competition tends to adjust prices

¹ Federal Reserve Bank of New York, *Pattern of U.S. Import Trade since 1923* (1952).

to production costs; this appears to have been lost sight of in devaluation discussions in certain quarters. This may (or may not) be due to a tendency by Americans to assume that competition in Britain is moribund. I sometimes ask my American friends whether they wish the British to establish cartels—*real* price-fixing cartels—throughout British industry, so that in the event of their wishing another devaluation on us, we might be sure of making it a resounding success.

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DEVELOPMENT CHARGES AND THE COMPENSATION-BETTERMENT PROBLEM

THE Town and Country Planning Act of 1947 has recently been amended. The changes, which were confined to the financial provisions of the Act, included the abolition of development charges and thus ended an ingenious attempt to deal with the compensation-betterment problem. The purpose of this paper is to explain what development charges were and why they had to be abandoned and to pose some questions concerning the alternative proposals which the Government has put forward.¹ First, however, a brief discussion of the nature of the problem is presented.

THE COMPENSATION-BETTERMENT PROBLEM

Any town and country planning activity, for example the zoning of a particular area as a green belt or the regulation of building heights, makes some people better off and others worse off in a variety of ways. Thus the construction of a new street improves traffic conditions but requires the acquisition and demolition of property along its route. Furthermore, neighbouring property which is not physically affected may appreciate or depreciate in value.² This and some of the other effects are, at least in principle, measurable in money terms.

The problem is : (a) *When is it both practicable and desirable to compensate those people made worse off and to levy some charge on those people made better off ;* (b) *How shall this be done ?*

Since the answer given will affect the cost of much planning activity and therefore exert an influence on the amount and type of planning that the planning authorities can afford to do, it is evident that the problem relates to the allocation of resources as well as to the distribution of income and wealth. Furthermore, because the financial position of planning authorities is another factor determining what they can afford, the problem of local government finance is interlinked with the compensation-betterment problem. Thus any thorough analysis of the latter

¹ In writing this paper I have been greatly helped by a number of people professionally concerned with the property market who were kind enough to grant me interviews.

² For instance the construction of Charing Cross Road destroyed the trade of a number of small shopkeepers near by.

problem must involve consideration of a very wide range of issues.

At least in recent years, more attention seems to have been directed to the distributional aspects than to the allocational aspect. But it has often been said that under the 1932 Town and Country Planning Act planning cost too much money, so that not enough was done. In particular, two arguments were put forward, the doctrines of shifting and floating value, to explain that compensation was in some respects too favourable to land-owners as a whole. The Uthwatt Committee on Compensation and Betterment summarised them as follows in paragraph 28 of its final report :¹

"If land with potential development value is purchased by a public authority or is restricted against development or certain forms of development, compensation has to be paid for individual loss of land values which have not in fact been destroyed but which have only shifted to other land. In addition, where the land belongs to a number of owners, the aggregate of values claimable by individual owners when separately assessed, owing to the factor of "floating value," greatly exceeds the real loss of the claimants taken as a group."

The principle of 100% shift in value was clearly stated in 1929 by Sir Raymond Unwin with reference to the preservation of open spaces in areas suitable for residential development. He contended :

"... that where land is withdrawn from the area available for building, the value of the prospect of building increment on the remaining land is increased by the actual value of the prospect thus extinguished on the withdrawn land."²

In paragraph 26 of its final report the Uthwatt Committee stated more generally that :

"The public control of the use of land . . . increases the value of some land and decreases the value of other land, but it does not destroy land values. Neither the total demand for development nor its average annual rate is materially affected, if at all, by planning ordinances."

It is not clear whether this last sentence is a historical statement about the nineteen thirties or a generalisation about all planning, past and future. In the latter sense the statement is

¹ Cmd. 6386. 1942.

² Memorandum on Open Spaces, p. 22 in the First Report of the Greater London Regional Planning Committee.

simply not true. Of course, the prohibition of development, which would not have taken place in any case, will hardly affect land values, but the prohibition of profitable intended development will often drive developers to inferior alternative sites for which they are not prepared to offer as high a price. In such cases the rise in the value of the inferior sites will generally be less than the fall in the value of the superior sites where development has been prohibited. If the prohibition of development on a good site causes the potential developer to give up altogether, as may sometimes happen, there will be no shift of value at all. Thus "There is no economic law of the conservation of value,"¹ and the importance of shifting value has been exaggerated.

The development value of a piece of land is the amount it is expected to be worth if and when it is developed less the cost of development appropriately discounted for the futurity and uncertainty of the development, minus the present existing-use value of the land. It is not very clear whether the Uthwatt Committee defined floating value as simply development value, or whether they meant it to indicate that land changed hands at prices which showed an over-valuation of the possibility of development.

In the first sense, that of development value, floating value does exist, but why this should mean that compensation on a market-value basis is "excessive" was not explained by the Committee. In the second sense the existence of floating value is inconsistent with the 100% shifting of values which the Committee believed to happen.

This can be shown by a simple analytical example. Suppose an expanding town to be surrounded by four equal-sized areas of fringe land, all equally suitable for development and equally likely to be developed. Assume that the development of the foreseeable future will take up only one of these areas. Then if the existing-use value of the fringe land is £*x* per acre, and the excess over existing-use value which will be paid for the land on development actually taking place is £*y* per acre, the land will be worth £*x* + $\frac{1}{4}$ *y* per acre.² If it sells for more, say £*x* + $\frac{1}{3}$ *y* per acre, then (on this definition) floating value exists. Now suppose that development on three of the areas is prohibited; according to the

¹ This phrase is taken from an address by Sir Arnold Plant to the Chartered Auctioneers' and Estate Agents' Institute, printed in the May 1949 issue of their Journal. They quote Sir Arnold's statement with approval on page 7 of their Memorandum on the 1947 Act.

² Ignoring the discount to obtain present value.

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doctrine of 100% shift, the remaining area will then have a market value of $\text{£}x + 4/3y$ per acre. Since the true development value is only $\text{£}y$, this is manifestly absurd, and so therefore must be at least one of the two doctrines which, when combined, produce such an answer.

As has just been argued, the doctrine that value will always shift 100% is incorrect. What about the doctrine of floating value in the sense now under consideration?

The idea that land which is capable of development normally sold at prices which reflected an over-estimation of the imminence and likelihood of that development implies that developers were consistently over-optimistic. The Uthwatt Committee provided no explanation in their Report of why this should be so, and since the minutes and memoranda of evidence are unfortunately not available, it is impossible to assess their conclusions on this matter. But it is interesting to note that the Land Agents' Society, in their observations (submitted to the Government) on the report of the Uthwatt Committee, stated (p. 5) that, "It is the experience of members of the Society . . . that purchasers are not so optimistic as the 'floating value' theory implies, and that when buying from a willing seller, they discount very fully the risks attaching to the time and place at which development will take place."

However, even if it is granted that the average developer was over-optimistic and thus prepared to pay as a maximum too high a price, it does not follow that he actually paid too high a price. For when there is competition in the supply of sites developers can obtain land for less than the maximum price they would be prepared to pay. In other words "the existence of several properties suitable for development or redevelopment of a particular type automatically depresses the price obtainable for each, below what any one property could command in the absence of competition."¹

Finally, the factor of floating value may be understood in a third meaning which does make sense and is relevant to compensation problems. It may be that even though private developers did not pay "over-bid" prices, local authorities had to. Since the rules of the Acquisition of Land (Assessment of Compensation) Act of 1919 require open-market value to be the basis, the allegation that the compensation that had to be paid by local authorities was excessive must mean that where the compensation was judicially decided, the awards were too generous to the land-

¹ *R.I.C.S. Memorandum*, p. 11.

owners. Thus if the owner of land which was designated for compulsory acquisition put in a claim based on the assumption that his property would shortly have been developed, it was said to be extremely difficult for the acquiring authority to prove in the courts that development was actually not very probable. If this be true, the question arises whether a change in the rules for the assessment of compensation might not have been adequate to reduce, if not abolish, over-compensation.

The conclusion of this discussion is that the arguments relating to the cost of compensation for planning restrictions and compulsory acquisition need to be reconsidered. The importance of shifting value has been exaggerated, and the doctrine of floating value is unclear, unless it be understood in the third sense considered, in which case it may well be that the matter could be dealt with by some modification of the 1919 rules.

THE 1947 ACT

The basic principle of the financial provisions of the 1947 Act was very simple: nationalisation of the development value of land so that private owners were to keep only the value of their real property in its existing use. Private transactions in land were consequently supposed to take place at existing-use value. The following main financial provisions of the Act were obviously consistent with this basic principles:

- (a) The price paid for land on compulsory purchase (by local authorities, statutory undertakers, etc.) was limited to its value in its existing use.
- (b) No compensation was to be payable on the imposition of planning restrictions except when they diminished the value of land below its value in its existing use.
- (c) When land use was changed, or land built on, a development charge could be levied equal to the consequential increase in the value of the property.

Furthermore, £300 million in Government stock (plus accrued interest in cash) was to be paid as compensation by July 1, 1953, to landowners who filed claims for loss of development rights in their property.

Development charges were paid not only by private developers but also by local authorities in respect of development on land acquired since July 1, 1948, which was the "appointed day" when the bulk of the Act came into force. But if we lump together the central government and the local authorities these

payments cancel out; the net financial result to them together as compared to the pre-war system was composed of the following main items:

They now paid hardly any compensation for planning restrictions.

They purchased land at its existing use value instead of at its free market value including development value.

They received development charges.¹

They were to pay interest to landowners on £300 million (at a rate of interest not announced).

A justification of the nationalisation of the development value of land as being an improvement upon the financial provisions of the 1932 Town and Country Planning Act must therefore have rested on the following propositions:

(1) For any given amount of planning activity the net financial result just mentioned was favourable to local authorities and the government together (*i.e.*, it was unfavourable to property owners) and ought to have been so; and/or

(2) Insofar as the amount of planning activity is influenced by financial considerations the new system was more likely to encourage the "right" amount of planning activity than the 1932 Act; provided that

(3) The incidental effects of the system were not so undesirable as to offset these advantages.

Development charges have been abolished mainly because this last proviso was not fulfilled.

DEVELOPMENT CHARGES

In order to examine the effects of Development Charges the system must now be briefly described. Development, upon which Development Charges were levied, is defined in the Act as "the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land." Not all development was charged, however; apart from transitional

¹ At a rate of about £8 million a year in 1952. A considerable proportion were set off against claims on the £300 million in respect of single plots and builders' "near ripe" land, their owners being promised 100% compensation for loss of development value and allowed to offset charges against their claims.

provisions (and the provisions relating to statutory undertakers, local authorities, charities, etc.), the following main kinds of private development were free of charge:

Operations

Erection of plant and machinery within a building.

Repairs and maintenance.

Building and erecting for agriculture or forestry.

Erection of advertisements, fences, walls and gates.

Rebuilding, enlarging or improving a building if this did not increase its cubic content by more than 10% (or, in the case of dwelling-houses, by 7,500 cubic feet if this were greater) of its cubic content on July 1, 1948, or (if later) when first built.

Erection, alteration or extension of buildings on property certified by the Minister as dead ripe for the development in question.¹

Change of Use

Increase in one use in a multi-use property by not more than 10%.

Display of advertisements, camping, temporary use.

Change of use to agriculture or forestry.

Change of use within certain specified "use classes," and certain changes from one use class to another.

Examples of chargeable changes of use were: light industrial building to general industrial building; shop to wholesale warehouse; house to hotel; boarding school to social centre. Examples of changes of use which were free of charge were: Shop to office; bone burning to blood boiling; nursing home to hospital; one general industrial use to another general industrial use or to a light industrial use.

This gives a broad idea of what was liable to charge (though it was possible for development which was liable to be assessed with a nil charge on valuation grounds). The principle of assessment must now be described. This was laid down by a Statutory Regulation² which required that:

"Development charge shall not be more than the . . . additional value, measured by normal processes of valuation, of the land due to planning permission for a particular development" and not less than this unless it "ought

¹ 1948 No. 1189.

² No payment from the £300 million was to be made in respect of the value for this development.

properly to be less in order to comply with the Governing Principle" that "land can be freely bought and sold . . . in the open market at a price neither greater nor less than its value for its existing use."

The Central Land Board, which, working with the valuers of the Inland Revenue, was responsible for assessing and collecting development charges, reformulated the first part of this by saying that development charge was to equal the difference between the Consent Value and the Refusal Value of the land, where :

Consent Value was the value of the land on the assumption that its owner might carry out any development which was not liable to charge and the particular development for which he had planning permission, *i.e.*, it excluded all other development for which planning permission was required.

Refusal Value was the value of the land on the assumption that its owner might carry out any development which was not liable to charge but that all other operations and uses were permanently prohibited. For present purposes this can also be called existing use value.¹

Development charge was thus to be 100% of the increase in capital value due to planning permission to develop.

By the use of the words "normal processes of valuation" in the Regulation the Central Land Board was, in effect, left to decide how charges were assessed. As it said rather plaintively in its *Practice Notes*,² the application of the Regulations "depends almost entirely on the meaning to be given to the word 'value.' This word is not defined either by the Act or by the Regulations"!

The simplest case to consider is that where an owner-occupier contemplated 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. (The capital loss is whichever is the less of (a) the present value to him of the net returns from the property, or (b) the cost of equivalent re-instatement. Where the returns from

¹ In some cases existing-use value as Refusal Value differs from existing-use value as the price paid on compulsory acquisition, but such differences are not important in the present context.

² Pp. 11. The *Practice Notes* were published by H.M.S.O. in 1949.

the property are non-pecuniary, as in the case of a dwelling-house, only (b) is relevant.) It follows that unless refusal value were greater or consent value less than the corresponding conceptual capital loss, development charges would have prevented development.

There are in fact a number of reasons why development charges were assessed at a lower level than that which would remove all incentive to develop in the manner just described.

(1) Value was taken as being the price land would fetch if offered for sale in the open market and not as including "the whole of the profit-earning capacity of the land in the hands of the owner."¹ Where there is competition in the sense that a number of properties suitable for a particular type of development are available it is often possible to buy any one of them at a price considerably less than its full profit-earning capacity for development. In such cases the principle just quoted gives a Constant Value lower than the capital value to the developer of the property with the right to develop.

Furthermore :

(2) Regard was had to developer's risk and profit. In the arithmetic which constituted or explained the assessment of Consent Value this was done in a number of alternative ways. Thus if similar adjacent land free of charge had sold at £x per acre and this figure was taken as the consent value, the charge allowed the developer roughly the same profit as the developers of this adjacent land expected to receive when they paid £x per acre. Alternatively, consent value might be estimated by subtracting the cost of development plus an allowance for risk and profit from the present value of the developed property. Or the rate of interest at which the expected returns were capitalised to obtain the present value might allow an adequate rate of return to the developer.

(3) "It is realised that values may at the present time be considerably affected by the possession or otherwise of a building licence. Consent Values will not be assessed at the higher figure which might result if the land were being sold with a licence attached to it in a market of potential developers who had no building licences, but could obtain one by buying the particular land with its planning permission. On the other hand, they will not be assessed at the depressed figure which might result if the land were being sold in a market composed solely of bidders unlikely to get a licence."² This means that where building

¹ *Practice Notes*, p. 11.

² *Ibid.*, p. 19.

licences had a "scarcity value"¹ development charges did not make development unprofitable. Since the scarcity value of building licences was (and is) not confined to houses, where it is cheaper to build a new house than to buy an equivalent existing house with vacant possession, this factor was of considerable general importance. Even for types of property where there is no rent control, the market is not so perfect that space can always be obtained by would-be tenants prepared to pay for it.

(4) The 10% "tolerance" which was free of charge on rebuilding, improving, enlarging or changing the proportions of various uses in a building in many cases raised the refusal value above the existing use value in its narrow sense, so that other factors apart the charge tended to be less than the development value.

Development charges were an arbitrary fee² in that there was legitimate room for disagreement as to the figures to be placed on the refusal and consent values of a property. 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. But in the absence of useful information about rents paid, the estimation of a refusal value was extremely difficult, since land very rarely changes hands at existing-use value (refusal value) where it has any development potential. Nor was consent value much easier to estimate; it is revealing that the rents paid for factory space in the New Towns were sometimes used in the south of England as a basis for assessing the consent value for factories of land elsewhere. And where a consent value was reached by deducting the cost of development from the present value of the expected rental value of the developed property,³ a small change in the expected future rental value per foot of floor space might make a big difference in the development charge. Furthermore, there was room for considerable ingenuity in securing that the part of a proposed extension which was allowed as being within the 10% tolerance⁴ was the most valuable part.

It is evident that there was considerable room for argument between a developer and a district valuer. The Central Land Board said:⁵ "The process is not so much one of bargaining, as

¹ I.e., where they would fetch a positive price if all the licences the Government is prepared to grant were auctioned.

² The literature of public finance uses the word "fee" for such a payment.

³ The "residual" method.

⁴ I.e., exempt from charge.

⁵ Second annual report, p. 6.

has been suggested, but rather of investigating merits in the light of all available information." Many developers, however, regarded this process as one where they used every argument they could think of to induce the district valuer to lower his figure. But the approach of different district valuers could differ, and there were cases where a developer and district valuer spent several hours trying to get the charge as low as possible. Also, it was argued that just because there was no appeal against a determination of development charge, district valuers were more generous than they would have been had a right of appeal been instituted. Lastly, when a district valuer was asked to give an informal preliminary indication, prior to formal determination, of development charge, he would obviously prefer to err by giving too high a figure rather than too low a figure, since it was much easier to reduce it later on than to raise it.

Development charge had normally to be paid in a single capital sum before development commenced, although in order that protracted negotiations should not hold up development the Central Land Board occasionally accepted a covenant to pay the charge as finally determined. The disadvantageous effect of this upon the developer's liquidity was removed in many cases from May 1952 when developers were allowed to set off charge to an amount not exceeding 80% of their agreed claim upon the £300 million compensation fund against that claim. In the case of certain single-house plots and "near-ripe" land owned by builders which had been promised 100% compensation for loss of development rights, a complete offset was allowed since the coming into force of the Act. But if the Treasury scheme for the distribution of the £300 million (in Government stock) had been introduced in July 1953 as was provided, offsetting would have no longer been possible.

It is impossible to discover how much development charges prevented development by people or firms in possession of the land which they wished to develop. There may have been very few cases where developers decided to stop when the final determination of the charge was made. Such final determination was only made, however, when the applicant had the necessary planning permission, building licence, etc., so that evidence on the last point would not be conclusive, since the charge may have put off developers right at the start.

Two of the four factors listed above as causing development charges to be below the level which would have completely checked development would probably have been temporary.

First, the scarcity value of building licences may disappear.¹ Second, the 10% tolerance on the extension of existing buildings was being used up, at least as concerns industrial buildings. It must be remembered that if development charges were not to check those types of development liable to charge it was not sufficient that they should have left developers a profit; this profit must have been greater than they could earn on alternative uses of their capital. These considerations lead to two important conclusions :

(1) Development charges were likely to have become considerably more restrictive in their effects than they were up to the time of their repeal.

(2) It is likely that development charges affected the type of development, increasing the proportion of development which was not liable to charge (*e.g.*, agricultural improvements, small extensions of existing buildings, conversion of big houses into flats). The relative encouragement of agriculture was no doubt deliberate, but otherwise the effect on the pattern of development seems to have been arbitrary.²

In cases where the developer had to acquire the land on which he developed there are some additional factors to be considered. It was one of the principles of the Act that the development value of land was taken out of private ownership (£300 million being granted as compensation) so that it had to be bought back by developers from the Central Land Board, the fee being the development charge. As a corollary of this the "Governing Principle" of the Development Charge Regulations was that "so far as is practicable" land should freely change hands at existing-use value.³ Since this was normally the same as refusal value, the aim was that the total amount paid in purchase price and development charge by a developer should be the consent value of the land, which was rarely more than the price he would have paid in the absence of the Act. In fact, however, private sales of land with any development potential at existing-use value were the exception, not the rule. This requires discussion, firstly, of why

¹ It is already less than in, say, 1946, since building costs have risen more than the price with vacant possession of some types of buildings.

² In the debates on the Bill the possibility was mooted that differential rates of development charge could be used as an instrument of planning to stimulate desired development and check undesired development.

³ Except where (i) the vendor accepted liability for development charge; (ii) near-ripe and single-plot land was sold; (iii) where local authorities and statutory undertakers disposed of land they had previously been using, in which case the "prevailing use" was free of charge; and (iv) dead-ripe land was sold.

owners often would not (and will not) willingly dispose of land at existing-use value, and, secondly, of why developers were prepared to pay more than existing-use value despite the charge.

The case of the vendor (or grantor of a long lease) is simple.¹ The minimum price at which he would be willing to sell land will be the capital loss he would suffer if it were confiscated without compensation. For an investor-owner this approximates to existing-use value, provided that he capitalises the returns from the property at the market rate for the type of property in question, and provided that the present value of the reversion includes no potential development value.

In the case of owner-occupiers a possible reason for unwillingness to sell at existing-use value is that they may suffer severance, disturbance, injurious affection or temporary loss of profits, depending on circumstances. The Central Land Board, however, stated that it would "in such cases make a proper allowance in arriving at the development charge."² If this allowance included such a sum as was necessary to compensate the owner for the bother and inconvenience caused by surrendering his property as well as for all the pecuniary loss involved, no difficulty need have arisen under this head.

Where a property had some development value, the owner would, when development charge existed, only have been prepared to sell at existing-use value (*i.e.*, at a price reflecting no part of the development value) if he expected that the charge payable upon development by him would have reduced its profitability to zero. In other words, if development charges were high enough for owners of properties with a development value to be willing to sell those properties at existing-use value, they would have had to be high enough to remove completely the profitability of the development of those properties by their owners.

The Central Land Board listed three reasons why developers should have been unwilling to purchase land at more than its existing-use value :³

"(1) No compensation is generally payable on refusal of planning permission. Thus if a person buys land above existing use value and fails to get planning permission for further development, he will be out of pocket on the deal.

"(2) The development charge will not be assessed at a lower figure because a purchase has taken place above

¹ The complications of assignment of the compensation claim and uncertainty regarding the future of the Act are mentioned later on.

² *Practice Notes*, p. 19.

³ *Ibid.*, p. 2.

existing use value. Thus again, such a purchaser will pay more than he should.

"(3) Most compulsory purchases, including those of the Central Land Board, are to be at existing use value. So yet again a previous purchaser at a higher figure will be a loser."

The first reason cannot have been very important: a developer who knows his business will not acquire land unless he is fairly certain that he can get planning permission. Nor could the fear of compulsory purchase have been very significant; it is possible to discover whether acquisition by a local authority, if not by a statutory undertaker, is likely, while the compulsory purchase powers of the Central Land Board were rarely exercised, and then only where an owner would not sell at existing-use value to a developer.

This leaves the second reason, and here the point is not how much the developer "should" have paid but how much he could afford to pay. If the maximum amount he would have paid for the developed property rather than go without it minus the cost of the development operations was £*a*, and the consent value was £*b*, then he would have preferred to pay up to £*a* — £*b* above refusal value for the land than not develop. But such an excess normally existed for the four reasons listed above on pp. 307-8.¹ If this excess were less than the minimum excess above existing-use value at which the present owner of the land would sell it, then the charge would have prevented development. If it were greater, then the charge would not have abolished, but only reduced, the profitability of the development. Even so, however, the existence of the charge might have caused the developer to go elsewhere if there were an alternative property available the existing use of which was the same as the developer's proposed use so that the charge on it would be nil (unless there were an extension above the 10% tolerance). Thus, whereas without the Act a developer wishing to build a factory might prefer site 1 (heath) to site 2 (bombed factory), development charges might have led him to locate on site 2.

¹ The following extract is from p. 10 of the second report of the Central Land Board. "Building licences are difficult to get and the developer who has been fortunate enough to obtain one is often willing to pay a much inflated price for a piece of land upon which to build. In other words a 'scarcity value' attaches at present to the possession of a licence. The theory that the development charge would leave the developer unwilling or unable to pay more than existing use value for his land is not at present working out in practice, especially since a would-be house-owner who pays building value to the seller of the land, as well as a development charge to the Board, is still paying less in the total cost of his house than he would have to pay for an existing house with vacant possession."

The argument of the last paragraph leads to the following conclusions concerning development in those cases where the developer had to acquire land:

- (1) Development charges were liable to render some such development unprofitable, thus stopping it.
- (2) They may have altered the pattern of the development that did take place by stimulating redevelopment as against new development.
- (3) As tolerances were used up and if building costs rose relatively to the price of properties with vacant possession, more and more development would have been prevented by development charges.

Another factor must now be mentioned. While many owners sold at prices much in excess of existing-use value,¹ others held their land off the market altogether for two reasons. Firstly, the Central Land Board only exercised its power of compulsory purchase where the owner of land had actually offered to sell (at a price above existing-use value). Secondly, in the early days of the Act people were waiting to see how it would work; later they waited to see how it would be altered.² Lastly, there is a reason in a different category from those so far discussed why more than existing-use value was paid for land. This is that the vendor (or lessor) sometimes assigned his claim on the £300 million. In the early days of the Act the general expectation was that such claims were worth very little;³ the transfer of them served as an excuse for the high price. When expectations became more definite and more optimistic they probably figured more explicitly in negotiations and in the price paid. Later still, the expectation that the financial provisions would be altered again caused uncertainty as to the worth of claims.

Development charges have now been abolished largely because of the strong disincentive effect which they exerted, or would have come to exert, on private development of land, both directly and by upsetting the market in land for development.

¹ It may be noted that since land capable of development changed hands at prices above refusal value and below consent value, the records of many current transactions were of no help to district valuers in assessing development charges. Since sales free of charge of single plots and builders' near-ripe land were to cease in January 1953 and since pre-Act values were becoming more and more out of date, it follows that the assessment of charges would have become more arbitrary.

² When it appeared that the average rate of payment on compensation claims would be 80%, owners became less likely to sell for liquidity reasons.

³ In January 1951 a claim for £4,193 was sold by auction for £220; other sales took place at 2s. 6d. in the pound.

Since, except in the longest of long runs, they must inevitably have reduced the profitability of development and/or the price at which land could be sold for development, this is hardly surprising. The important question which the experiment raises is, therefore, how it was that these results were not foreseen when the scheme was introduced.

The answer would seem to be that the attention of its promoters was fixed almost exclusively on the distributional aspect of the problem. Granted the premisses of the argument, the scheme was indeed a most ingenious method of securing that landowners did not obtain "too much" compensation. But only one of its effects upon the allocation of resources was considered; that by making planning cheaper it would enable more to be done. Its other effect upon the allocation of resources, on development by private property owners, was not sufficiently considered. Thus the distributional aspect of the compensation-betterment problem received relatively too much attention and the allocational aspects relatively too little. Has this mistake been made again?

THE WHITE PAPER PROPOSALS

The White Paper Cmd. 8699 "Amendment of Financial Provisions" was published in November 1952, together with the Town and Country Planning Bill. The latter provided that:

- (1) Development charges be abolished.
- (2) No distribution of the £300 million compensation fund be made.

The White Paper contained a broad outline of the proposals to be embodied in the main amending legislation (which will not be introduced before the autumn of 1953). Without this further legislation the price paid for land on compulsory acquisition is at present its existing-use value, and no compensation is payable on planning restrictions which do not interfere with existing use. The proposals are that in the case of land for which a claim on the £300 million for loss of development value has been accepted by the Central Land Board, compensation up to 100% of the value of the claim shall be paid:

- (1) From central funds if a planning restriction is imposed which prevents development (*i.e.*, does not interfere with existing use). Not all such restriction is to carry a right to compensation, however.

- (2) By the acquiring authority, in addition to the existing use value, if the land is compulsorily acquired.¹

Existing-use value in this context is apparently to be the same as refusal value in the assessment of development charge, *i.e.*, the value of land is to be assessed on the assumption that all operations and changes of use which would have been liable to charge are permanently prohibited.²

In addition, the new legislation will have to deal with a large number of technical difficulties which will arise both from using the claims for loss of development value as the basis for compensation and from the transition period. There will also have to be special arrangements in the case of land owned by local authorities and statutory undertakers. Furthermore, there is the problem of the extent to which compensation should be paid retrospectively where restrictions have been imposed or development charge levied in the period up to November 1952. Apart from its technical aspects, this latter problem is entirely a matter of distribution, however. On this, and the fairness or unfairness of using 1947 development value as the basis for compensation, nothing will be said here, except to point out that what is considered just must depend on expectations about the future movement of the general price level.

Paragraph 35 of the White Paper, which concerns the scope of compensation for planning restrictions on land with an admitted claim for loss of 1947 development value, runs as follows:

"Her Majesty's Government do not intend that compensation should be payable in every case in which permission to develop is refused or conditions are attached to a permission. They consider it reasonable to exclude compensation in respect of restrictions based on the principle of good neighbourliness, and there is precedent for doing so in the Planning Acts of 1932. On this principle compensation will not in general be payable for refusal to allow a change in the use of a building, or refusal to allow a particular type of building, or for restrictions on the size of a building; nor for refusal to permit development which

¹ "Where some part of the admitted claim has already been used to compensate for a partial restriction of development, the amount payable on complete restriction or on compulsory acquisition will be correspondingly reduced Additional compensation will be paid for abortive expenditure incurred in good faith on the strength of a planning permission which cannot be used because of subsequent compulsory acquisition." (White Paper, para. 28.)

² It would probably make no difference in the vast majority of cases if existing-use value were to be taken in its narrower sense, as in rating valuations where the *rebus sic stantibus* rule applies.

would place an undue burden on the community (*e.g.*, in the provision of services) or which would endanger public health or safety. These are only examples and the precise extent of the exclusions remains to be worked out."

It is evident that the considerations behind this passage are almost entirely distributional.¹ But the allocational aspects also deserve consideration. There are two questions to be answered. Firstly, are the principles of compensation such that the compensation figure in any particular case is useful in deciding whether or not the planning restriction in question ought to be imposed? The answer to this is in the negative, since the current development value may be very different from the 1947 development value. [This is not meant 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.]

Secondly, and much more important, are the principles of compensation, such that the cost to the planning authority of imposing restrictions will be neither so high that they cannot afford to do all that is desirable, nor so low that they do more than is desirable? The answer to the first part of the question is certainly in the affirmative; the answer to the latter part may be in the negative. This is because compensation for those planning restrictions which do not interfere with existing use is to be paid from central funds on the decision of local planning authorities. Thus, whether or not there is a claim for loss of development value for a particular property and whether or not compensation is payable for the type of planning restriction in question, the cost to the decision-taking authority of imposing that restriction on that property is nil. This *may* lead some planning authorities to impose too many restrictions, particularly since estimates of the development values destroyed by restrictions are not automatically made available to them.²

Similar questions may now be asked in examining the allocative aspect of the principles of compensation for compulsory

¹ The reference to precedent presumably implies that the fact that Parliament made certain decisions in 1932 proves them to be wise decisions, an argument which the present Government might be reluctant to apply to some Parliamentary decisions of 1945-50.

² See the preceding paragraph.

acquisition, where it is the acquiring authority that is to pay the compensation. Where property currently has a development value, its value for compulsory acquisition will very often be less than its market value,¹ so that its cost to the acquiring authority will be less than its value to a private developer. This may affect the amount of property compulsorily acquired; it is very likely to determine which particular properties are acquired. Suppose, for example, that a school is to be built and that from the point of view of the education authorities two alternative sites are equally suitable. The site chosen will presumably be that which is cheapest to acquire, *i.e.*, whose existing-use value + 1947 development value (if any) is lowest; yet this may be the site with the higher current market value and therefore, *cet. par.*, not the site which (from the allocational aspect) should be chosen.

These brief considerations indicate that unless planning authorities possess great wisdom the proposed basis for compensation has certain drawbacks. Compensation at market-value would reduce the need for wisdom and make valuation for compensation less arbitrary. On the other hand, it might be considered too favourable (distributionally) to property owners and too expensive for planning authorities, given their present financial resources, to be able to afford enough planning. A new general property tax the proceeds of which were given to planning authorities in the form of lump-sum grants could deal with these problems, however. Thus the question of whether market value should replace the compensation formula in the new proposals can be discussed without reference to considerations of fairness in so far as property-owners are considered as a group.

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¹ It will be equal where current development value is no greater than its 1947 development value.

A MODEL OF INCOME DISTRIBUTION

SUMMARY

In the models discussed in this paper the distribution of incomes between an enumerable infinity of income ranges is assumed to develop by means of a stochastic process. In most models the stochastic matrix is assumed to remain constant through time. Under these circumstances, and provided certain other conditions are satisfied, the distribution will tend towards a unique equilibrium distribution dependent upon the stochastic matrix but not on the initial distribution. It is found that under fairly general conditions, provided the prospects of change of income as described by the matrix are in a certain sense independent of income for incomes above some limit then the Pareto curve of the equilibrium distribution will be asymptotic to a straight line. This result is preserved even when some of the effects of age on income are allowed for, and also when allowance is made for the effect of an occupational stratification of the population. Some consideration is also given to the fact that changes in the income distribution may cause the stochastic matrix itself to change. Some discussion is also given of cases where the Pareto curve of the equilibrium distribution is not asymptotic to a straight line.

§ 1. INTRODUCTION

In a recent article¹ instructions were given for graduating the distribution of personal incomes before tax by means of the distribution function

$$(1.1) \quad F(t) = \frac{N}{\theta} \tan^{-1} \frac{\sin \theta}{\cos \theta + (t/t_0)^\alpha}$$

where $F(t)$ is the number of incomes exceeding t , and N , α , t_0 and θ are fitted parameters. For high incomes this formula closely approximates the form

$$(1.2) \quad F(t) = Ct^{-\alpha}$$

with $C = \frac{N\pi}{180} t_0^\alpha \sin \theta$

which is the form predicted by Pareto's law.

It has been frequently claimed that actual distributions do

¹ Champernowne [3]. See references at the end of this article.

approximate closely to this form for high income levels, and it is the purpose of this note to seek theoretical reasons for this. I am indebted to Mr. M. Crum of New College, Oxford, for critical advice and enabling me to correct several inaccuracies. Needless to say, he is in no degree responsible for any mis-statements which may remain.

§ 2. THE DEVELOPMENT OF INCOME DISTRIBUTION REGARDED AS A STOCHASTIC PROCESS

The forces determining the distribution of incomes in any community are so varied and complex, and interact and fluctuate so continuously, that any theoretical model must either be unrealistically simplified or hopelessly complicated. We shall choose the former alternative but then give indications that the introduction of some of the more obvious complications of the real world does not seem to disturb the general trend of our conclusions.

The ideas underlying our theoretical model have been briefly indicated in an earlier publication,¹ but a more complete statement may be conveniently put forward at the present time, since recent developments in the theory of stochastic processes involving infinite matrices have enabled more rigorous and neater formulation to be made than was previously found possible.

We shall suppose that the income scale is divided into an enumerable infinity of income ranges, which, for reasons to be later explained, we shall assume to have uniform proportionate extent. For example, we might consider the ranges of income per annum to be £50-£100, £100-£200, £200-£400, £400-£800, . . . although a finer graduation would be more interesting. We shall regard the development through time of the distribution of incomes between these ranges as being a stochastic process, so that the income of any individual in one year may depend on what it was in the previous year and on a chance process. In reality new income-receivers appear every year and old ones pass away, but an obvious and fruitful simplifying assumption to make is that to every "dying" income-receiver there corresponds an heir to his income in the following year, and vice versa. This assumption will imply that the number of incomes is constant through time and that the incomes live on individually, although their recipients are transitory. Not very much difficulty would be involved in allowing more or less than one heir to each dying

¹ Champernowne [1], [2].

person, but on the whole the loss of simplicity would be likely to outweigh the advantages due to the gain in verisimilitude.

Under such assumptions any historical development of the distribution of incomes could be summarily described in terms of the following vectors and matrices, $X_r(0)$, telling us the number $X_r(0)$ of the income-receivers in each range R_r , $r = 1, 2 \dots$ in the initial year Y_0 and a series of matrices $p'_{rs}(t)$ telling us in each year Y_t , the proportions of the occupants of R_r who are shifted to range R_s in the following year Y_{t+1} . With these definitions the income distributions $x_r(t)$ in the successive years will be generated according to

$$(2.1) \quad X_s(t+1) = \sum_{r=0}^{\infty} X_r(t) p'_{rs}(t)$$

If we suppose, as is convenient, that the income ranges are paraded in order of size (there being a lowest income range R_0), then there will be some advantage in defining a new set of matrices

$$(2.2) \quad p_{ru}(t) = p'_{r, r+u}(t)$$

and rewriting (2.1) in the form

$$(2.3) \quad X_s(t+1) = \sum_{u=-\infty}^s X_{s-u}(t) p_{s-u, u}(t)$$

$p_{ru}(t)$ then tells us the proportion in Y_t of the occupants in R_r who shift up by various numbers u of ranges.

The advantage arises from the fact that in the real world the sizes of such shifts from year to year are mostly fairly limited, so that each $p_{ru}(t)$, regarded as a frequency distribution in u , is likely to be centred round $u = 0$.

In order to make simple models, we should like to be able to assume that the $p_{ru}(t)$ regarded as a frequency distribution in u differed very little in form for variations over a wide range of values of r and t .

When we consider the practical counterpart to this suggestion we see that it means that the prospects of shifts upwards and downwards along the ladder of income ranges differ little as between the occupants of different income ranges, and differ little from year to year.

This obviously cannot apply to all income ranges. For example, a rich man's income must be allowed some risk through death or misadventure of being degraded to a lower range in the following year; but the incomes in the lowest range cannot by definition be allowed this possibility. Again the *absolute* changes in income are liable to be much higher for incomes of £1,000,000 than for incomes of £100, so that the ranges must

have a greater absolute width for high than for low incomes if our simplification is to have any plausibility. The obvious choice of ranges is that indicated above whereby each range has equal proportionate extent, for then any universal effects, such as price and interest movements, which are likely to alter income prospects for widely different ranges R_r and R_q in approximately the same manner proportionately, will affect the various functions $p_{ru}(t)$ and $p_{qu}(t)$ in roughly the same fashion.

Our other assumption that the functions $p'_{r, r+u}(t) = p_{ru}(t)$ remain constant as t changes through time, takes us far from reality: but an essential preliminary to the study (not here attempted) of the dynamic equilibrium with moving $p'_{rs}(t)$ is to examine the static equilibrium generated by a fixed set of functions $p'_{rs}(t)$.

For it is known that under very general conditions the repeated application of the same set of income-changes represented by an irreducible matrix $p'_{rs}(t)$ will make *any* initial income distribution eventually approach a unique equilibrium distribution which is determined by the matrix $p'_{rs}(t)$ alone. Considerable interest may therefore be found in the question of the type of income distribution which will correspond to the repeated operation of the changes represented by any realistic form of the matrix $p'_{rs}(t)$.

It would be a great advantage in constructing models of income distribution if we had empirical evidence about the matrices $p'_{rs}(t)$ describing actual movements of income in modern

TABLE I

Gross income 1951, £ :	0-199	200-399	400-599	600-999	1000 and over
1952 income as percentage of 1951 income.	Proportion of cases per hundred.				
150 and over	7.53	2.62	0.99	0.70	0.36
125 to 149	4.65	5.47	1.90	3.87	0.89
115 to 124	4.68	6.50	6.68	5.64	6.57
105 to 114	24.53	20.69	23.36	23.87	20.35
101 to 104	7.67	16.16	18.13	14.40	7.00
100 exactly	46.51	36.53	30.33	29.57	43.55
96 to 99	0.27	0.96	2.36	2.61	1.10
86 to 95	1.47	4.93	6.69	4.12	5.61
76 to 85	0.74	2.23	5.69	6.93	6.52
57 to 75	1.95	2.41	2.81	7.06	7.32
50 and under	—	1.35	1.06	1.21	0.72
Not available	—	0.14	—	—	—
All ratios	100.00	100.00	100.00	100.00	100.00

We may refer to this equation (3.2), and to later modifications of it, as our *basic postulate*. It here means that the prospects of shifts upwards and downwards along the ladder of income ranges are distributed in a manner independent of present income, apart from the limitations imposed by the impossibility of descending below the bottom rung of the ladder. This is the postulate which we shall retain in some modified form in nearly all our models, and which always leads to an income distribution which obeys Pareto's law at least asymptotically for high incomes.

We also need to assume that for each value of r and t

$$(3.3) \quad \sum_{s=0}^{\infty} p'_{rs}(t) = \sum_{u=-r}^{\infty} p_{ru}(t) = 1$$

which by (3.2) also implies

$$(3.3a) \quad \sum_{u=-n}^1 p_u = 1.$$

This assumption (3.3) expresses the fiction that all incomes preserve their identity throughout time in the manner described in Section 2 above.

One other assumption must be introduced in order to ensure that the process is not dissipative, *i.e.*, that the incomes do not go on increasing indefinitely without settling down to an equilibrium distribution. Let us denote

$$(3.4) \quad g(z) \equiv \sum_{u=-n}^1 p_u z^{1-u} - z$$

then our stability assumption is that

$$(3.5) \quad g'(1) \equiv - \sum_{u=-n}^1 u p_u \text{ is positive.}$$

This means that for all incomes, initially in any one of the ranges $R_n, R_{n+1}, R_{n+2} \dots$, the average number of ranges shifted during the next year is negative.

This completes the list of assumptions for our first model and when $n = 5$ they give rise to a matrix of Diagram 1.

Now we may determine the equilibrium distribution corresponding to any matrix $p'_{r,r+u}(t) = p_{r,u}(t)$ conforming to our assumed rules. Owing to the uniqueness theorem mentioned above in Section 2, it will be sufficient to find any distribution which remains exactly unchanged under the action of the matrix $p'_{rs}(t)$ for one year. For this distribution when found must (apart from an arbitrary multiplying constant) be the unique distribution which will be approached by all distributions under

$s =$	0	1	2	3	4	5	6	7	8
$r =$	$p'_{rs}(t)$								
0	$1 - p_1$	p_1	0	0	0	0	0	0	0
1	$1 - p_0 - p_1$	p_0	p_1	0	0	0	0	0	0
2	$p_{-5} + p_{-4} + p_{-3} + p_{-2}$	p_{-1}	p_0	p_1	0	0	0	0	0
3	$p_{-5} + p_{-4} + p_{-3}$	p_{-2}	p_{-1}	p_0	p_1	0	0	0	0
4	$p_{-5} + p_{-4}$	p_{-3}	p_{-2}	p_{-1}	p_0	p_1	0	0	0
5	p_{-5}	p_{-4}	p_{-3}	p_{-2}	p_{-1}	p_0	p_1	0	0
6	0	p_{-5}	p_{-4}	p_{-3}	p_{-2}	p_{-1}	p_0	p_1	0
7	0	0	p_{-5}	p_{-4}	p_{-3}	p_{-2}	p_{-1}	p_0	p_1
8	0	0	0	p_{-5}	p_{-4}	p_{-3}	p_{-2}	p_{-1}	p_0
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.

DIAGRAM 1

the repeated action of the matrix multiplier $p'_{rs}(t)$ year after year.

Our assumptions (3.1) to (3.5) have deliberately been chosen so as to make the solution obvious. Indeed, if X_s is the desired equilibrium distribution, we need by (2.3), (3.1) and (3.2)

$$(3.6) \quad X_s = \sum_{u=-n}^1 p_u X_{s-u} \quad \text{for all } s > 0$$

and

$$(3.7) \quad X_0 = \sum_{u=-n}^0 q_u X_{-u} \quad \text{where } q_u = \sum_{v=-n}^u p_v.$$

We need only satisfy (3.6), since (3.6), (3.1), (3.2) and (3.3) ensure the satisfaction of (3.7) as well.

Now an obvious solution of (3.6) is

$$(3.8) \quad X_s = b^s$$

where b is the real positive root other than unity of the equation

$$(3.9) \quad g(z) = \sum_{u=-n}^1 p_u z^{1-u} - z = 0$$

where $g(z)$ was already defined in (3.4) above.

Descartes' rule of signs establishes the fact that (3.9) has no more than two real positive roots: since unity is one root, and $g(0) = p_0 > 0$, and $g'(1) > 0$ by (3.5), the other real positive root must satisfy

$$(3.10) \quad 0 < b < 1.$$

Hence the solution (3.8) implies a total number of incomes given by

$$(3.11) \quad N' = \frac{1}{1-b}$$

and, to arrange for any other total number N , we need merely modify (3.8) to the form

$$(3.8a) \quad X_s = N(1 - b)^s.$$

Now suppose that the proportionate extent of each income range is 10^h , and that the lowest income is $y_{\min}$: then X_s is the number of incomes in the range R_s whose lower bound is given by

$$(3.12) \quad y_s = 10^{sh} y_{\min}. \text{ whence } \log_{10} y_s = sh + \log_{10} y_{\min}.$$

By summing a geometrical progression, using (3.8a), we now find that in the equilibrium distribution the number of incomes exceeding y_s is given by

$$(3.13) \quad F(y_s) = Nb^s \text{ whence } \log_{10} F(y_s) = \log_{10} N + s \log_{10} b$$

Now put

$$(3.14) \quad a = \log_{10} b^{-1/h} \text{ and } \gamma = \log_{10} N + a \log_{10} y_{\min}.$$

Then it follows from (3.12) and (3.13) that

$$(3.15) \quad \log_{10} F(y_s) = \gamma - a \log_{10} y_s$$

This means that for $y = y_0, y_1, y_2 \dots$, the logarithm of the number of incomes exceeding y is a linear function of y . This states Pareto's law in its exact form.

Thus if all ranges are of equal proportionate extent, our simplifying assumptions ensure that any initial distribution of income will in the course of time approach the exact Pareto distribution given by (3.14), (3.15).

The very simple model discussed in this section brings out clearly the tendency for Pareto's law to be obeyed in a community where, above a certain minimum income, the prospects of various amounts of percentage change of income are independent of the initial income.

Most of the remainder of the article will be spent in generalising this very simple model so that it is less unrealistic.

In actual income distributions, Pareto's law is not even approximately obeyed for low incomes: if logarithm of income is measured along the horizontal axis, the frequency distributions found in practice are not J-shaped like that obtained in our model, but single humped and moderately symmetrical. The first modification which we make to our model is to remove the assumption that there is a lowest income range R_0 and to set up conditions which lead to a two-tailed distribution, one for the poor and one for the rich.

In these simple models, Pareto's law is obeyed exactly, not merely asymptotically. We next introduce two generalisations

which limit observance of the law to the occupants of high income groups and render it no longer exact but asymptotic. These generalisations consist in:

(i) allowing incomes to shift upwards by more than one range in a year;

(ii) limiting our basic assumption (3.2) that the prospects of various amounts of percentage change of income are independent of initial income to apply to higher incomes only.

These two generalisations bring our model much closer to the conditions indicated by Table II above.

In real life a man's age has a great influence on his prospects of increasing his income. Our next generalisation takes this into account. We now allow a man's prospects of change of income to depend on his age. Finally, we use the same technical device to allow a man's occupation to influence his prospects of change of income.

Despite these generalisations of the model, it is still found that the Pareto curve must be asymptotic to a straight line. Is it then possible that the approximate linearity over high income ranges of the Pareto curves found for many modern communities is due to the approximate fulfilment in the real world of our basic assumption? This question is briefly discussed in the final sections of the paper.

§ 4. A MODEL GENERATING A TWO-TAILED INCOME DISTRIBUTION OBEYING PARETO'S LAW

The simple model described in the last section generated a distribution with only one Pareto tail. The essential modifications required to introduce a two-tailed distribution are the following:

(i) We drop the assumption that there is a lowest income-range R_0 , and adopt an infinite sequence of income ranges R_r , of equal proportionate extent, allowing r to run from minus infinity to plus infinity.

(ii) We adopt assumptions about that part of the matrix $p'_{rs}(t)$ for which r is negative analogous to those adopted about that part for which r is positive.

(iii) We allow for some movement of incomes to and from between ranges R_r for which r is positive and those for which r is negative.

In particular, we assume as in (3.1)

$$(4.1) \quad p'_{r,r+u}(t) = p_{ru}(t) = 0 \text{ when } r \geq 0 \text{ and } u \geq 1 \text{ or } u < -n$$

and we retain our basic postulate (3.2)

$$(4.2) \quad p'_{r,r+u}(t) = p_{ru}(t) = p_u > 0 \text{ if } -n \leq u \leq 1 \text{ and } u > -r$$

We further assume that

$$(4.3) \quad \text{when } r \geq 0 \text{ and } u < -r, \text{ and when } r < 0 \\ \text{and } u > r, u < -1 \text{ or } u > v, \\ p'_{r,r+u}(t) = p_{ru}(t) = 0$$

We now introduce a positive integer r and non-negative constants $\pi_{-1} \pi_0 \pi_1 \dots \pi_v$ and satisfying

$$(4.4) \quad \pi_{-1} > 0 \pi_0 > 0 \pi_1 > 0 \pi_v > 0 \lambda > 0 \sum_{s=1}^v \pi_s = 1 \sum_{u=1}^v u \pi_u > 1 \\ 1 - \lambda - \pi_{-1} > 0 \quad 1 - \lambda - p_1 > 0$$

and put

$$(4.5) \quad p_{ru}(t) = \pi_u \text{ when } r < 0 \text{ and } u < -r - 1 \\ \text{and } -1 \leq u \leq v \\ p_{0,-1}(t) = p_{-1,2}(t) = \lambda \quad p_{00}(t) = 1 - \lambda - p_1 > 0 \\ p_{-10}(t) = 1 - \lambda - \pi_{-1} > 0$$

and assume as before that for all r

$$(4.6) \quad \sum_{u=-\infty}^{\infty} p_{ru}(t) = 1 \text{ and } p'_{r,r+u}(t) = p_{ru}(t).$$

These assumptions can best be understood by considering their effects when n and v take particular values. Thus when $n = 3$ and $v = 2$, they give rise to a matrix for $p'_{rs}(t)$ whose centre is of the following form :

$s =$	-4	-3	-2	-1	0	1	2	3	4	5
$r =$										
-5	π_1	π_2	0	0	0	0	0	0	0	0
-4	π_0	π_1	π_2	0	0	0	0	0	0	0
-3	π_{-1}	π_0	π_1	π_2	0	0	0	0	0	0
-2	0	π_{-1}	π_0	$1 - \pi_0 - \pi_{-1}$	0	0	0	0	0	0
-1	0	0	π_{-1}	$1 - \lambda - \pi_{-1}$	λ	0	0	0	0	0
0	0	0	0	λ	$1 - \lambda - p_1$	p_1	0	0	0	0
1	0	0	0	0	$1 - p_0 - p_1$	p_0	p_1	0	0	0
2	0	0	0	0	$p_{-3} + p_{-2}$	p_{-1}	p_0	p_1	0	0
3	0	0	0	0	p_{-3}	p_{-2}	p_{-1}	p_0	p_1	0
4	0	0	0	0	0	p_{-3}	p_{-2}	p_{-1}	p_0	p_1
5	0	0	0	0	0	0	p_{-3}	p_{-2}	p_{-1}	p_0
6	0	0	0	0	0	0	0	p_{-3}	p_{-2}	p_{-1}

DIAGRAM 2

We retain our assumption (3.5) that

$$(4.7) \quad g'(1) = - \sum_{u=-n}^1 u p_u \text{ is positive}$$

and introduce the analogous assumption that

$$(4.8) \quad \gamma'(1) = - \sum_{v=-1}^m v \pi_v \text{ is negative}$$

where

$$(4.9) \quad \gamma(z) \equiv \sum_{v=-1}^1 \pi_v z^{1-v} - z$$

Then, by an argument analogous to that of Section 3, the equation

$$(4.10) \quad \gamma(z) = 0$$

must have a single real root β satisfying

$$(4.11) \quad \beta > 1$$

It may be easily verified that the distribution

$$(4.12) \quad X_s = A b^s \text{ when } s \geq 0 \\ X_s = A \beta^{s+1} \text{ when } s < 0$$

satisfies the equilibrium condition

$$(4.13) \quad X_s = \sum_{r=-\infty}^{\infty} p'_{rs}(t) X_r$$

Hence for some value of A , this must be the equilibrium distribution towards which any actual distribution must tend under the repeated action of the multiplying matrix $p'_{rs}(t)$ determined by the various assumptions of this model.

To secure any total number of incomes, N say, we need only put

$$(4.14) \quad A = \frac{(1-b)(\beta-1)N}{2\beta-b\beta-1}$$

In this solution there are two Pareto tails, one relating to high incomes and one to low incomes. The distribution is kept stable by the two conditions (4.7), (4.8), which ensure that for large incomes the expected change u is negative and for small incomes it is positive. This pair of conditions is needed to offset the continual dispersal of incomes due to the variance of the frequency distributions in u , p_u and π_u .

This example has been hand-picked so as to yield a crystal-clear solution, but one essential feature of this solution, namely the conformity to Pareto's law of the distribution, will be found to be approximately preserved through a series of modifications and relaxations of our simplifying assumptions. The basic postulate which leads to the approximate obedience of this law was retained in assumption (4.2), which determines that the functions of type $p_{ru}(t)$ should be the same for all values of r relating to high income ranges.

One minor generalisation which can be made to the above example without essentially altering the form of the solution is to enlarge the channels of communication between income ranges with $r \geq 0$ and those with $r < 0$, hitherto limited to the flow of a proportion λ from each of R_{-1} and R_0 . We may adjust the values of $p'_{r,-1}(t)$ and $p'_{r0}(t)$ in such a manner as to allow the flow of incomes from each of $R_0 R_1 \dots R_{n-1}$ to R_{-1} and from each of $R_{-1} R_{-2} \dots R_{-r}$ to R_0 without altering the solution further than to the form

$$(4.15) \quad \begin{aligned} x_s &= Bb^s \text{ when } s \geq 0 \\ x_{-s} &= B\beta^{s-1} \text{ when } s < 0 \end{aligned}$$

where the ratio between β and B will now depend on the value of $p'_{r,-1}(t)$ and $p'_{r0}(t)$, and need no longer be unity.

§ 5. A MORE GENERAL MODEL GENERATING A DISTRIBUTION ASYMPTOTIC TO A PARETO DISTRIBUTION

One of the most restrictive assumptions in the example we have discussed was that

$$p_{ru}(t) = 0 \text{ when } u > 1 \text{ and } r \geq 0$$

The abandonment of this assumption destroys the complete simplicity of the solution.

In order to concentrate attention on the new generalisation, let us first restore the assumption that R_0 is the minimum income range so that we shall only have to consider one tail of the distribution. Then let us replace the assumption (3.1) by

(5.1) $p_{ru}(t) = 0$ if $u > m$ a given positive integer or $u < -n$ and modify (3.2) to the form

$$(5.2) \quad \begin{aligned} p_{ru}(t) &= p_u \text{ (defined for } u = -n, 1-n, \dots, m) \\ \text{if } u+r &\geq m \text{ where } \sum_{u=-n}^m p_u = 1 \text{ and no } p_u \text{ is negative.} \end{aligned}$$

We may retain assumptions (3.3), (3.4) and (3.5) (extending the summation in (3.4) and (3.5) from $-n$ to m) and add the additional assumption, $p_m > 0$.

The assumptions made so far have defined $p'_{rs}(t)$ for $s \geq m$ and determined $\sum_{s=0}^{m-1} p'_{rs}(t)$ for each $r = 0, 1, \dots, n$ and $\sum_{s=r-n}^{m-1} p'_{rs}(t)$ for each $r = n+1, \dots, n+m-1$. But the individual values $p'_{rs}(t)$ for $r = 0, 1, \dots, n+m-2$ and $r-n \leq s < m$ are, subject to these linear restraints, still at our disposal. We shall

make no further assumption about these individual values, except that none are negative and that when $1r-s \leq 1$, $p'_{rs}(t)$ is positive.

The effect of these assumptions in the case $n=2$ $m=3$ is to give the matrix $p'_{rs}(t)$ the following form:

$p'_{00}(t)$	$p'_{01}(t)$	$p'_{02}(t)$	p_1	0	0	0	0
$p'_{10}(t)$	$p'_{11}(t)$	$p'_{12}(t)$	p_2	p_3	0	0	0
$p'_{20}(t)$	$p'_{21}(t)$	$p'_{22}(t)$	p_1	p_2	p_3	0	0
0	$p'_{31}(t)$	$p'_{32}(t)$	p_0	p_1	p_2	p_3	0
0	0	p_{-3}	p_{-1}	p_0	p_1	p_2	p_3
0	0	0	p_{-2}	p_{-1}	p_0	p_1	p_2
0	0	0	0	p_{-2}	p_{-1}	p_0	p_1
0	0	0	0	0	p_{-3}	p_{-1}	p_0
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.

DIAGRAM 3

subject to the conditions:

- (i) that the sum of the elements in each row are unity;
- (ii) that the elements in the three central diagonals are all positive, and no elements are negative.

In the general case where m is some positive integer, the equation

$$(5.3) \quad g(z) = \sum_{\theta=0}^{m+n} p_{m-\theta} z^\theta - z^m = 0$$

will still have just one positive root b_1 less than unity, provided we retain our assumption (3.5) in the form

$$(5.4) \quad g'(1) = - \sum_{u=-n}^m u p_u > 0.$$

This assumptions ensures, by a theorem due to Mr. F. G. Foster,¹ that the matrix $p'_{rs}(t)$ is "non-dissipative," and hence that a unique finite non-zero equilibrium distribution will be approached in the limit under the repeated application of the changes embodied in this matrix.

Let the $m+n$ roots of (5.3) be $b_1 b_2 \dots b_{m+n}$; and let x_s ($s = 0, 1, 2 \dots$) denote the equilibrium distribution, which must satisfy the equilibrium equations

$$(5.5) \quad \left\{ \begin{aligned} x_s &= \sum_{r=0}^{\infty} p'_{rs}(t) x_r \quad s = 0, 1, 2 \dots \\ \sum_{s=0}^{\infty} x_s &= N \end{aligned} \right.$$

¹ Foster [4].

This set of equations may be subdivided into

$$(5.6) \quad x_s = \sum_{r=0}^{\infty} p'_{rs}(t)x_r \quad s = 0, 1, 2, \dots, m-1$$

$$(5.7) \quad x_s = \sum_{u=-n}^m p_u x_{s-u} \quad s = m, m+1, m+2, \dots$$

$$(5.8) \quad \sum_{s=0}^{\infty} x_s = N$$

The solution is known, because of Foster's theorem, to exist: hence there exist coefficients $B_1 \dots B_{m+n}$ such that

$$(5.9) \quad x_s = \sum_{k=1}^{m+n} B_k b_k^s \quad s = 0, 1, 2, \dots, m+n-1$$

It will then follow from (5.3) and (5.7) that

$$(5.10) \quad x_s = \sum_{k=1}^{m+n} B_k b_k^s \quad s = m+n, m+n+1, \dots$$

Amongst those roots whose coefficients in (5.10) are not zero there will be one (at least) whose modulus is not exceeded by that of any other. Let its modulus be b : then for large s , (5.10) will reduce to the form

$$(5.11) \quad x_s = b^{-s} \{ B'_1 + B'_2(-1)^s + \sum_{k=3}^k B'_k \cos(s\theta_k + \phi_k) + o(1) \}$$

Since no x_s can be negative

$$(5.12) \quad B'_1 > 0$$

and b itself must be one root of (5.3). But since all the coefficients of non-zero powers of z in the expansion of $z^{-mg}(z)$ are positive, there can then be no other root of modulus b than b itself. Hence (5.11) may be reduced to

$$(5.13) \quad x_s = b^{-s} \{ B'_1 + o(1) \}$$

It follows from (5.8), (5.12) and (5.13) that $|b| < 1$ and hence

$$(5.14) \quad x_s = b_1^{-s} \{ B_1 + o(1) \}$$

where b_1 is the real root lying between 0 and 1. (5.14) expresses the fact that the Pareto curve for the equilibrium distribution is asymptotic to a straight line.

It is always possible to find the coefficients B_k in the exact solution (5.9), (5.10) by finding b_1 and the roots $b_2 \dots b_m$ of modulus less than b_1 and fitting B_1 to B_k so as to satisfy (5.6).

It is perhaps of some interest to state that by a suitable choice of the elements $p'_{rs}(t)$ in the top left-hand corner of the matrix illustrated in Diagram 3, which were left with arbitrary values, it is always possible to arrange that all the terms except

the first vanish in the expansion for x_s so that in this case Pareto's law is exactly obeyed throughout the whole income scale as in the example of Section 3. A variety of such suitable choices is available, but the result has so little practical relevance that it may be left to the curious reader to verify it if he so wishes.

It is now convenient to relax our assumption (5.2) so that the distribution $p_{ru}(t)$ need only conform to the standard form p_u for high incomes. We replace (5.2) by

$$(5.15) \quad p_{ru}(t) = p_u \text{ defined for } u = -n, 1-n, \dots, m \\ \text{if } u+r \geq m+w$$

where w is a non-negative integer

$$\sum_{u=-n}^m p_u = 1 \text{ and no } p_u \text{ is negative.}$$

The $p_{ru}(t)$ thus freed from the restriction (5.3) are those for which $m-r \leq u \leq m+w-r$ and $-n \leq u \leq m$, and these may be left free, apart from the usual requirements that no $p_{ru}(t)$ is negative, all $p_{r1}(t)$, $p_{r0}(t)$ and $p_{r-1}(t)$ are positive and the survival assumption (5.2).

In the case $n=1$ $m=2$ $w=2$, the effect of these assumptions on the appearance of the matrix $p'_{rs}(t)$ is shown below.

$r =$	0	1	2	3	4	5	6
$s =$							
0	$p'_{00}(t)$	$p'_{01}(t)$	$p'_{02}(t)$	0	0	0	0
1	$p'_{10}(t)$	$p'_{11}(t)$	$p'_{12}(t)$	$p'_{13}(t)$	0	0	0
2	0	$p'_{21}(t)$	$p'_{22}(t)$	$p'_{23}(t)$	p_2	0	0
3	0	0	$p'_{32}(t)$	$p'_{33}(t)$	p_1	p_2	0
4	0	0	0	$p'_{43}(t)$	p_0	p_1	p_2
5	0	0	0	0	p_{-1}	p_0	p_1
6	0	0	0	0	0	p_{-1}	p_0

DIAGRAM 4

The reader may compare this diagram with the figures of Table II.

The effect of the change in our model on the solution is in principle not very great. As before, we find $b_1 \dots b_m$ those m roots of (5.3) which have modulus less than unity and we try solutions of the form (5.9) for $x_w x_{w+1} \dots$

But we can no longer expect $x_0 x_1 \dots x_{w-1}$ to conform to the rule (5.9), and we need w more equations to determine these w further unknowns. These equations are provided by extending the equations (5.6) to cover $s = 0, 1, \dots, m+w-1$.

Subject to these modifications, the solution is exactly the same as before, and again the Pareto curve for high incomes must be asymptotic to a straight line.

The extension of these results to the case where there are two tails in a generalised form of the example discussed in Section 4 above involves no difficulty in principle.

§ 6. A MODEL MAKING ALLOWANCE FOR SOME EFFECTS OF AGE- AND OCCUPATION-STRUCTURE

An obvious objection to a theory based on the constancy over time of the movement matrices $p_{rs}(t)$ is the fact that age and death play such an important part in determining the changes in an income. In this section we shall modify our assumptions so as to go some way towards meeting this difficulty.

Our method will be to suppose that our population is divided between C "colonies," and that income-receivers can migrate from one colony to another, the prospects of change of income varying from colony to colony. When we wish to discuss the effect of age on income distribution, the "colonies" will represent age-groups: if the width of the age-groups exceeds one "year," then an income attached to one individual may either remain in that age-group or pass on to the next age-group above, or if the individual dies, pass with an appropriate reduction in size to the age-group containing the heir.

But the method could be used also to study the effects on income distribution of the tendency for families to remain in the same occupation: for this purpose we would make the "colonies" represent occupations. As in occupations, the income prospects in some colonies would be better than in others: most incomes would remain in one colony, but there would again be some movement between colonies.

We shall find that provided within each colony the $p_{ru}(t)$ functions have a form independent of the income range, for all large incomes the asymptotic approach of the Pareto curve to a straight line will be preserved under these far more general assumptions.

We now set down formally the notation for our model modified to include colonies.

Let

$${}_c p'_{rs}(t) = {}_c p_{r-r}(t)$$

denote the proportion of the incomes in range R_r in colony c in year t which move into range R_s in colony d in year $t + 1$.

If $x_r(t)$ denotes the number of incomes in range R_r in colony c in year t , then by definition

$$(6.1) \quad {}_d x_s(t+1) = \sum_{c=1}^C \sum_{r=0}^{\infty} {}_c p'_{rs}(t) x_r(t)$$

and if an equilibrium distribution ${}_d x_s$ exists it must satisfy the condition

$$(6.2) \quad {}_d x_s = \sum_{c=1}^C \sum_{r=0}^{\infty} {}_c p'_{rs}(t) x_r$$

for every $d = 1, 2, \dots, C$ and $s = 0, 1, 2, \dots$

The assumptions for our model can now be set down in a form closely analogous to those of the simpler model of Section 5. We assume

$$(6.3) \quad {}_c p_{rs}(t) = {}_c p'_{r, r+s}(t) = 0$$

when

$$s > m_d \text{ or } s < -n_d$$

where m_d and n_d are positive integers $d = 1, 2, \dots, C$

$$(6.4) \quad {}_c p_{ru}(t) = {}_c p'_{r, r+u}(t) = {}_c p_u \geq 0$$

if $s = r + u \geq m_d + w_d$
and $m_d \geq u \geq -n_d$

where the w_d are non-negative integers for $d = 1, 2, \dots, C$, and the ${}_c p_u$ are constants satisfying for each $c = 1, 2, \dots, C$, the survival condition

$$(6.5) \quad \sum_{d=1}^C \sum_{u=-n_d}^{m_d} {}_c p_u = 1$$

It is convenient at this stage to introduce the notion of the accessibility of one income range R_s in one colony C_d from the income range R_r in colony C_c .

Range R_s in C_d will be called accessible in one step from range R_r in C_c if ${}_c p'_{rs}(t)$ is positive: it will be called accessible in two steps from R_r in C_c if it is accessible in one step from any range in any colony which itself is accessible from R_r in C_c in one step. In general, the definition may be extended one by one to any larger number of steps, by always defining R_s in C_d to be accessible in n steps from R_r in C_c , if it is accessible in one step from any range in any colony, which itself is accessible from R_r in C_c in $(n-1)$ steps.

Finally, R_s in C_d will be termed accessible from R_r in C_c if for any n it is thus accessible in n steps.

We now make the further assumption

$$(6.6) \quad \text{Each range in any colony is accessible from each range in every colony.}$$

The purpose of this assumption is to ensure that the equilibrium income distribution is unique.

The survival postulate now takes the form

$$(6.7) \quad \sum_{d=1}^C \sum_{u=-n_d}^{m_d} {}_c p_{ru}(t) = 1$$

and we require one further postulate in order to rule out solutions involving periodic fluctuations from one distribution to another. This postulate may take the form that

(6.8) There is some pair of ranges R_d in C_d and R_c in C_c and some integer n such that R_d in C_d is accessible from R_c in C_c both in n steps and in $(n + i)$ steps.

The effect of these assumptions on the matrices ${}_{cd}p'_{rs}(t)$ may be illustrated by a numerical example with $C = 3$. In this example, the three colonies represent the young, middle-age and old-age groups 20–35, 35–50 and 50–65 years, and the unit of time during which the matrix ${}_{cd}p'_{rs}(t)$ operates once is taken as fifteen calendar years. It is supposed that all the young survive to middle-age, but half the middle-aged die and their incomes pass with suitable reduction to young heirs in the next period, while the other half reappear as the old in the next period, then to die and transmit their incomes to the young in the following period.

We arrange $m_1 = 0 \quad m_2 = 1 \quad m_3 = 1 \quad C = 3$
 $w_1 = 1 \quad w_2 = 0 \quad w_3 = 0$
 and choose the following nine matrices ${}_{cd}p'_{rs}(t)$ for $c = 1, 2, 3$ and $d = 1, 2, 3$.

We put identically equal to zero those five of the matrices for which either $c = d$ or $c = 1$ and $d = 3$, or $c = 3$ and $d = 2$. The other four matrices we choose as follows:

${}_{11}p'_{rs}(t) =$	0.1	0.9	0	0	etc.
	0	0.1	0.9	0	etc.
	0	0	0.1	0.9	etc.
	0	0	0	0.1	etc.
					etc.
${}_{21}p'_{rs} =$	0.5	0	0	0	etc.
	0.4	0.1	0	0	etc.
	0.2	0.2	0.1	0	etc.
	0	0.2	0.2	0.1	etc.
	0	0	0.2	0.2	etc.
					etc.
${}_{31}p'_{rs}(t) =$	0.1	0.4	0	0	etc.
	0	0.1	0.4	0	etc.
	0	0	0.1	0.4	etc.
	0	0	0	0.1	etc.
					etc.
${}_{32}p'_{rs} =$	1	0	0	0	etc.
	0.9	0.1	0	0	etc.
	0.8	0.1	0.1	0	etc.
	0.5	0.3	0.1	0.1	etc.
	0	0.5	0.3	0.1	etc.
	0	0	0.5	0.3	etc.
					etc.

DIAGRAM 5

It may be noted that R_0 in C_1 is accessible from R_0 in C_2 both in one step and in two steps. Thus the matrices satisfy the postulate (6.8).

In any generalised model of this type we shall have C sets of equilibrium equations to be satisfied by the equilibrium distributions x_s , namely

$$(6.9) \quad x_s = \sum_{c=1}^C \sum_{r=0}^{\infty} {}_{cd}p'_{rs}(t) x_r \quad d = 1, 2, \dots, C$$

For $s > m_d + w_d$, these conditions become

$$(6.10) \quad x_s = \sum_{c=1}^C \sum_{u=-n_d}^{m_d} {}_{cd}p_u x_{s-u} \quad d = 1, 2, \dots, C$$

We are thus led to investigate the C simultaneous equations

$$(6.11) \quad A_d = \sum_{c=1}^C \sum_{u=-n_d}^{m_d} {}_{cd}p_u A_c z^{-u} \quad d = 1, 2, \dots, C$$

which we may write again as

$$(6.12) \quad \sum_{c=1}^C P_{cd}(z) A_c = 0 \quad d = 1, 2, \dots, C$$

where

$$(6.13) \quad P_{cd}(z) = \begin{cases} \sum_{u=-n_d}^{m_d} {}_{cd}p_u z^{-u} - 1 & \text{if } c = d \\ \sum_{u=-n_d}^{m_d} {}_{cd}p_u z^{-u} & \text{if } c \neq d \end{cases}$$

Elimination of the coefficients A_c leads to

$$(6.14) \quad \text{Det.}[P_{cd}(z)] = G(z), \text{ say } = 0$$

This function $G(z)$ can be expressed in the form

$$(6.15) \quad G(z) = \sum_{u=-n}^m p_u z^{-u} \quad m = \sum_{c=1}^C m_c \quad n = \sum_{c=1}^C n_c$$

and plays a similar role in the theory to the function $g(z)$ in earlier sections. In particular, if we postulate

$$(6.16) \quad G'(1) = - \sum_{u=-n}^m u p_u > 0$$

it can be proved by an application of Foster's theorem that the process is non-dissipative and that a unique equilibrium distribution exists.

We can again prove by the methods of Section 5 that for large s , where x_s is the equilibrium distribution

$$(6.17) \quad x_s = b_1^s \{B_1 + o(1)\}$$

where b_1 is a real positive root of (6.14).

Thus again the Pareto curve is asymptotic to a straight line in the region of high incomes.

The procedure for finding an exact solution is the following. First find b_1 the largest real positive root and $b_2 \dots b_m$ the roots of lesser modulus. Let B_{ce} denote the co-factor of $P_{c1}(b_e)$ in the determinant $G(z)$. Then

$$(6.18) \quad \sum_{c=1}^C B_{ce} P_{c1}(b_e) = G(b_e) = 0 \quad e = 1, 2, \dots, m$$

TABLE III

	Young.	Middle-aged.	Old.	Total.	Income range.
S	X_1	X_2	X_3		
0	13,186	1,319	132	14,637	£125- £200
1	4,100	12,277	1,755	18,132	£200- £316
2	2,150	3,995	5,301	11,356	£316- £500
3	940	2,028	1,765	4,734	£500- £800
4	435	890	901	2,225	£800- £1250
5	198	411	397	1,006	£1250- £2000
6	90	187	183	460	£2000- £3160
7 and over	75	157	153	385	£3160-
TOTAL :	21,174	21,174	10,687	52,935	

The income scale put in on the extreme right assumes that the minimum income is £125 and that the upper limit of each income range is nearly 60% greater than the lower limit.

It will be noted that although the equilibrium distributions of incomes for young, middle-aged and old are very different for small incomes, yet already at income levels of £1,250 and over each is rapidly approaching a Pareto distribution with

$$(7.11) \quad a = -\frac{\log_{10} b_1}{\log_{10} 1.58} = -5 \log_{10} b_1 = 1.7041$$

This is well brought out by Chart 1 which shows for each age group and for all ages the following cumulative totals plotted on the double logarithmic paper.

TABLE IV

Income level.	Number of incomes exceeding this level.			
	Young.	Middle-aged.	Old.	Total.
£125	21,174	21,174	10,587	52,935
£200	7,988	19,855	10,455	38,298
£316	3,888	7,578	8,700	20,166
£500	1,738	3,674	3,399	8,810
£800	798	1,645	1,634	4,076
£1250	363	755	733	1,851
£2000	165	344	336	845
£3160	75	157	153	385

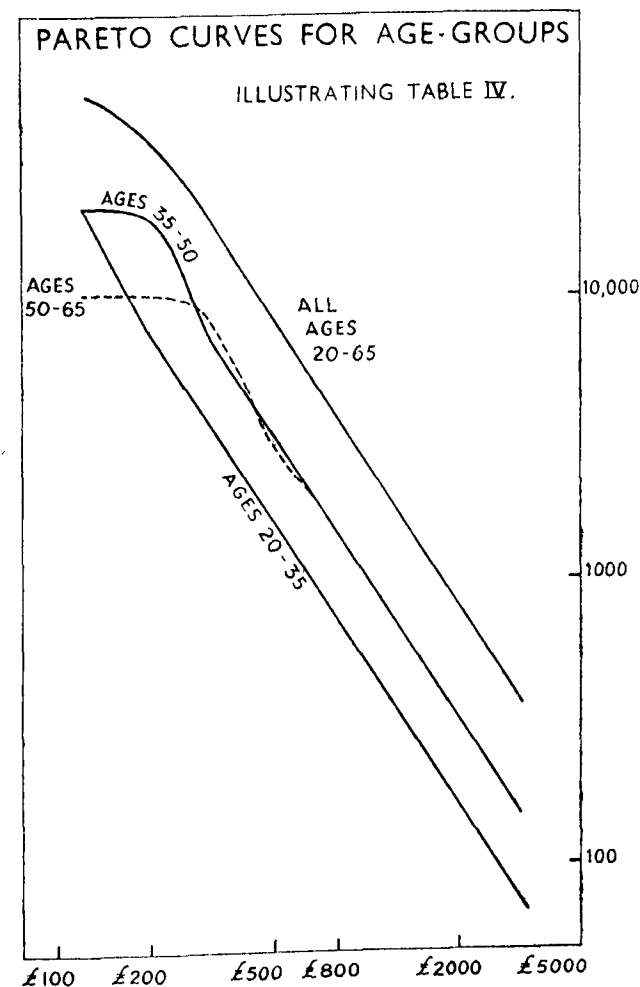
We may read off from the chart that the median incomes in the three age-groups differ considerably: they are £175, £280 and £410 approximately. Yet for incomes over £500 it is clear from Chart 1 that the *proportionate* distributions are almost identical for the three age-groups.¹

¹ For similar charts of actual distributions see Lydall [5].

§ 8. NUMERICAL EXAMPLE INVOLVING THE EFFECT OF OCCUPATIONAL STRUCTURE ON INCOME DISTRIBUTION

In our last model we made the assumption that every income range in every colony was accessible from every other. If we relax this assumption to state that within a certain group G of

CHART I



pairs (rc) every R_r in every colony c is accessible from every other, then our results will still hold, provided that the initial distribution was confined to this group.

If we maintain our other assumptions, then the effective new possibility introduced by this relaxation is the inclusion of colonies where there is an upper limit to the possible income.

This is useful when our colonies represent groups of occupations. Thus, let our society be composed of persons classified according to their main sources of income into :

1. Unskilled labour.
2. Semi-skilled work ; skilled work and clerical.
3. Salaries and professional.
4. Profits, land, property.

Then we might assume that there was an effective ceiling on the incomes of classes 1 and 2, and 3. If for simplicity we ignore the complication of age considered in our last example and take broad income groups so that group R_r extends from 2^{r-3} thousand pounds to 2^{r-2} we might set up the following model within our relaxed assumption (see Diagram 6).

It is assumed that no one can obtain incomes higher than £500 in occupation 1, or higher than £1000 in occupation 2. It will be seen that $_{33}P'_{rs}$, $_{34}P'_{rs}$, $_{43}P'_{rs}$ and $_{44}P'_{rs}$ assume repetitive forms when r becomes large : we might therefore expect to find the Pareto curves for occupations 3 and 4 to be asymptotic to straight lines.

It will be noted that $_{43}P'_{r2} > 0$ for all $r > 0$ so that (6.3) is not satisfied for finite n_3 when $c = 4$ $d = 3$ $s = 2$. Nevertheless, a solution can be found by the following method, which is similar to that of Section 7.

The matrix $P_{rs}(z)$ for this example is only concerned with the values 3 and 4 of r and s . It is

$$(8.1) \quad P_{rs}(z) = \begin{vmatrix} 0.020z^{-1} - 0.218 & 0.000139z^{-1} + 0.01786 \\ +0.180z & \\ 0 & 0.030z^{-1} - 0.115 + 0.075z \end{vmatrix}$$

The survival condition (6.5) is not, however, satisfied, since 1% of those in each income group $s > 3$, in C_4 , escape each year into income group R_2 of C_3 . Consequently, writing

$$(8.2) \quad G(z) = \text{Det}[P_{rs}(z)] \\ = 0.00060z^{-2} + 0.0088z^{-1} + 0.03197 - 0.03705z \\ + 0.01350z^2$$

we find that $G(1) \neq 0$ and that the non-dissipative condition (6.15) is not satisfied.

Nevertheless, two real positive roots of $G(z) = 0$ of modulus less than unity can be found and the usual method of solution proves adequate. The two roots are

$$(8.3) \quad b_1 = 0.333 \ 333 \quad b_2 = 0.100 \ 000$$

		$_{11}P'_{rs}$		$_{12}P'_{rs}$		
$r =$	$s =$	0	1	0	1	2
0	0	0.856	0.144	0	0	0
1	1	0.250	0.593	0.057	0.110	0

		$_{21}P'_{rs}$		$_{22}P'_{rs}$		$_{31}P'_{rs}$				$_{32}P'_{rs}$				
$r =$	$s =$	1	2	0	1	2	0	1	2	2	0	1	2	2
0	0	0.050	0.100	0.750	0.100	0	0	0	0	0	0	0	0	0
1	0	0.050	0.220	0.075	0.640	0.025	0	0.010	0	0	0	0	0	0
2	0	0	0.075	0	0.125	0.500	0	0	0.250	0	0	0	0.050	0

		$_{33}P'_{rs}$				$_{34}P'_{rs}$						
$r =$	$s =$	0	1	2	2	0	1	2	3	4	5	6
0	0	0.482	0	0	0	0.132	0.1875	0	0	0	0	0
1	0	0.02657	0.075	0	0	0.025	0.500	0.250	0	0	0	0
2	0	0	0	0.05	0	0.00486	0.055	0.79956	0.020	0	0	0
3	0	—	—	—	—	0	0	0.180	0.782	0.020	0	0
4	0	—	—	—	—	0	0	0	0.180	0.782	0.020	0
5	0	—	—	—	—	0	0	0	0	0.180	0.782	0.020
6	0	—	—	—	—	0	0	0	0	0	0.180	0.782
							etc.				etc.	

		$_{43}P'_{rs}$						
$r =$	$s =$	0	1	2	3	4	5	6
0	0	0.100	0.120	0	0	0	0	0
1	0	0.0025	0.050	0.07075	0	0	0	0
2	0	0	0.010	0.060	0.000139	0	0	0
3	0	0	0	0	0.01786	0.000139	0	0
4	0	0	0	0	0	0.01786	0.000139	0
5	0	0	0	0	0	0	0.01786	0.000139
					etc.			

		$_{44}P'_{rs}$			
$r =$	$s =$	0	1	2	>2
0	0	0.500	0.050	0	0
1	0	0.050	0.300	0.150	0
2	0	0	0.0081	0.010	0
3	0	0	0	0.010	0
4	0	0	0	0.010	0
5	0	0	0	0.010	0
				etc.	

		$_{44}P'_{rs}$						
$r =$	$s =$	0	1	2	3	4	5	6
0	0	0.250	0.200	0	0	0	0	0
1	0	0.100	0.370	0.030	0	0	0	0
2	0	0	0.010	0.8519	0.030	0	0	0
3	0	0	0	0.075	0.885	0.030	0	0
4	0	0	0	0	0.075	0.885	0.030	0
5	0	0	0	0	0	0.075	0.885	0.030
				etc.		etc.		etc.

$_{13}P'_{rs} = _{14}P'_{rs} = 0$ for all r, s .
 $_{31}P'_{rs} = _{41}P'_{rs} = _{42}P'_{rs} = 0$ for all r, s .

DIAGRAM 6

and we calculate

$$(8.4) \quad \begin{aligned} B_{3e} &= 0.30b_e^{-1} - 0.115 + 0.075b_e \\ B_{4e} &= -0.000139b_e^{-1} - 0.01786 \quad e = 1, 2 \end{aligned}$$

to give

$$B_{31} = 0 \quad B_{32} = 0.1925 \quad B_{41} = -0.18278 \quad B_{42} = -0.01925$$

Hence we are led to try solutions of the form

$$(8.5) \quad \begin{aligned} {}_3x_s &= 0.1925\lambda_2 10^{-s} & s = 2, 3, 4 \dots \\ {}_4x_s &= -0.18278\lambda_1 3^{-s} - 0.01925\lambda_2 10^{-s} & s = 3, 4, 5 \dots \end{aligned}$$

It will slightly simplify the algebra to fix the scale arbitrarily at this stage by choosing λ_2 so that

$$(8.6) \quad \begin{aligned} {}_3x_s &= 10^{8-s} & s = 2, 3, 4 \dots \\ {}_4x_s &= \lambda'_1 3^{-s} - 10^{7-s} & s = 3, 4 \dots \end{aligned}$$

λ'_1 is still undetermined and we also have still to find ${}_4x_0$, ${}_4x_1$, ${}_3x_0$, ${}_3x_1$, ${}_2x_0$, ${}_2x_1$, ${}_2x_2$, ${}_1x_0$ and ${}_1x_1$.

To find these ten constants we have the eleven equations associated with the equilibrium of ${}_1x_0$, ${}_1x_1$, ${}_2x_0$, ${}_2x_1$, ${}_2x_2$, ${}_3x_0$, ${}_3x_1$, ${}_3x_2$, ${}_4x_0$, ${}_4x_1$ and ${}_4x_2$, namely

$$(8.6) \quad \begin{cases} {}_1x_0 = 0.856{}_1x_0 + 0.250{}_1x_1 + 0.050{}_2x_0 + 0.050{}_0x_1 \\ {}_1x_1 = 0.144{}_1x_0 + 0.593{}_1x_1 + 0.100{}_2x_0 \\ \quad \quad \quad + 0.200{}_2x_1 + 0.075{}_2x_2 \\ \text{(seven equations omitted)} \\ {}_4x_1 = 0.120{}_3x_0 + 0.050{}_3x_1 + 10^4 + 0.200{}_4x_0 \\ \quad \quad \quad + 0.370{}_4x_1 + 0.010\{\lambda'_1 3^{-2} - 10^5\} \\ \lambda' 3^{-2} - 10^5 = 0.7075{}_3x_1 + 6000 + 0.030{}_4x_1 \\ \quad \quad \quad + 0.0852\{\lambda'_1 3^{-2} - 10^5\} + 0.075\{\lambda'_1 3^{-3} - 10^4\} \end{cases}$$

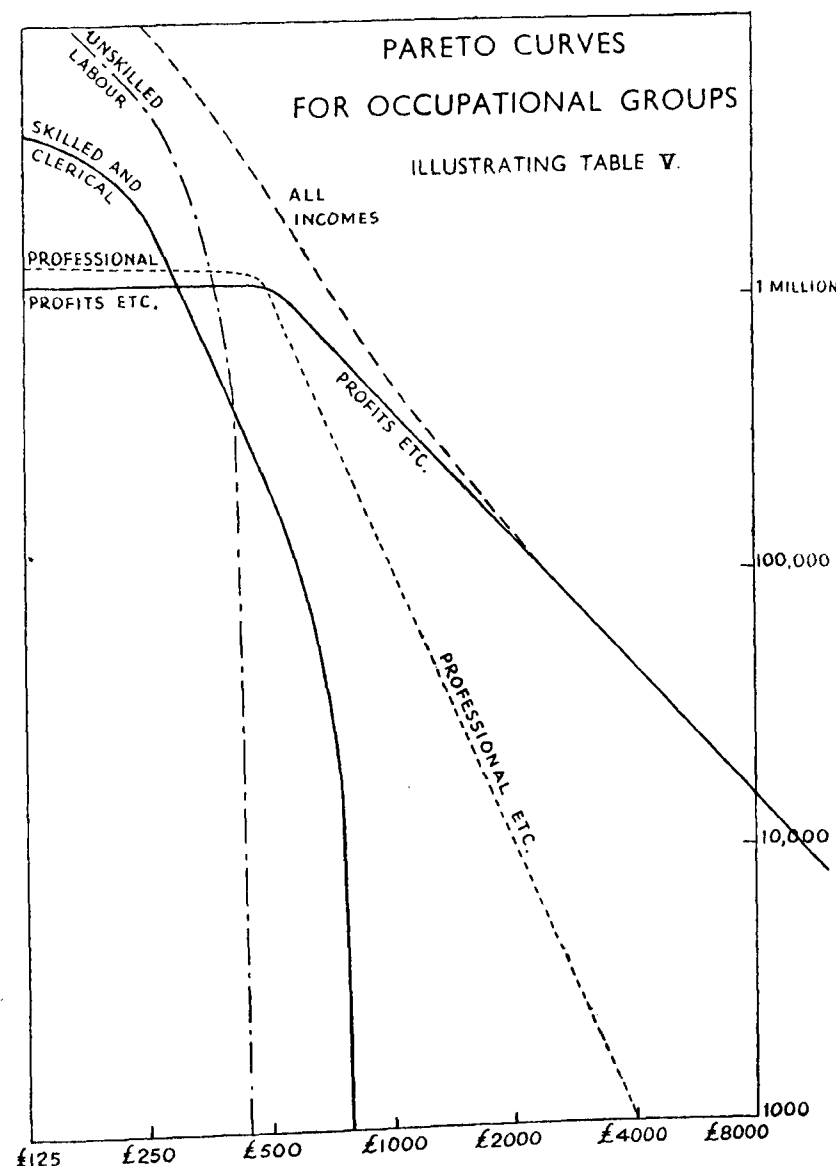
Only ten of these equations provide independent information: any one is implied by the other ten. The solution of ten simultaneous equations is no mean undertaking, but in this example the solution can be found as

$$(8.7) \quad \begin{cases} \lambda'_1 = 7.29 \cdot 10^6 & {}_1x_0 = 10^7 \\ {}_1x_1 = 5 \cdot 10^6 & {}_2x_0 = 2 \cdot 10^6 \\ {}_2x_1 = 1.8 \cdot 10^6 & {}_2x_2 = 2 \cdot 10^5 \\ {}_3x_0 = 2 \cdot 10^4 & {}_3x_1 = 2 \cdot 10^5 \\ {}_4x_0 = 10^4 & {}_4x_1 = 5 \cdot 10^4 \end{cases}$$

The values of ${}_3x_s$ and ${}_4x_s$ for $s > 1$ may now be found from the equations

$$(8.8) \quad \begin{aligned} {}_3x_s &= 10^{8-s} \\ {}_4x_s &= 3^{8-s} 10^4 - 10^{7-s} \end{aligned}$$

CHART II



From the complete set of x_i thus obtained, it is a quick matter to compile the following table showing for each occupation the number with incomes exceeding various levels.

TABLE V

Income level.	Number of incomes exceeding this level.				
	Unskilled labourers.	Skilled workers and clerical.	Salaried and professional.	Profits, land, etc.	Total.
£125 . . .	15,000,000	4,000,000	1,331,111	1,163,889	21,495,000
£250 . . .	5,000,000	2,000,000	1,311,111	1,153,889	9,465,000
£500 . . .	0	200,000	1,111,111	1,103,889	2,415,000
£1,000 . . .	0	0	111,111	393,889	505,000
£2,000 . . .	0	0	11,111	133,889	145,000
£4,000 . . .	0	0	1,111	44,889	46,000
£8,000 . . .	0	0	111	14,989	15,100
£16,000 . . .	0	0	11	4,999	5,010
£32,000 . . .	0	0	1	1,667	1,668

The corresponding Pareto curves are shown in Chart 2. An interesting feature of this solution is that the slopes of the Pareto lines for occupations 3 and 4 are not the same, that for the professional and salaried classes being much steeper than that for those whose income came from profits, land, etc. It is the latter distribution, of course, which determines the slope of the Pareto line for all incomes.¹

§ 9. A MODEL GENERATING A DISTRIBUTION IN WHICH PARETO'S LAW IS NOT OBEYED

The above examples are probably sufficient to illustrate the theory that the approximate observance of Pareto's law which has so often been remarked upon is not an illusion or coincidence, but has its explanation in a similarity at different high income-levels of the prospects of given proportionate changes of income.

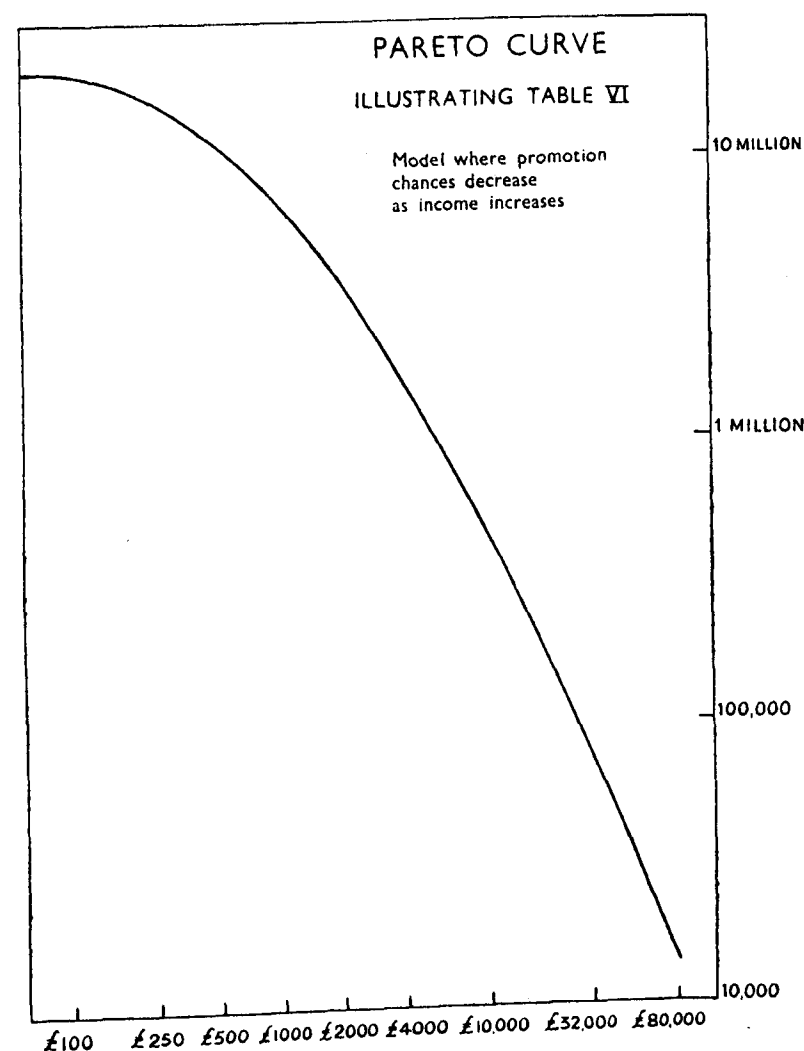
They can do little more than illustrate the theory, since they are built on the artificial simplifying assumption that these prospects of change remain constant through time at each income level. It will be readily appreciated that any model catering for prospects which are not constant through time is much more complicated and the results obtainable are far less clear: the investigation of such models must form the subject of another article than this. The importance of such change in prospects has already been hinted at in the suggestion that changes in the

¹ For similar charts of actual distributions see Lydall [5].

income distribution affect the influence described by the matrices $p'_{rs}(t)$ just as much as the influence affect the incomes.

Another gap in our discussion so far has been any consideration

CHART III



of models which do *not* lead to a Pareto distribution. There is a noticeable tendency recently for the Pareto curves of the United Kingdom and other countries to curve very slightly downwards at the tail, and it would be interesting to have a model illustrating how this could come about. The explanation is probably that the prospects of increasing are proportionately less rosy nowadays

for the very large incomes than for the large incomes. This is not necessarily because the owners of vast incomes are any less abstemious and accumulative than their forerunners used to be, but may be because income tax and death duties are now at a level which makes the piling up of huge fortunes a more gradual and less-rewarding undertaking.

A very simple model will suffice to illustrate the effect on the Pareto curve that would result from a progressive worsening of the chance of (say) doubling the income as one considered larger and larger incomes.

We shall suppose that $R_0, R_1, R_2 \dots$ are the income ranges £62 10s.-£125, £125-£250, £250-£500, etc., etc. We shall suppose that the chance of going *down* one range is the same in all ranges (except R_0), and is 10%. In R_0 the chance of going *up* one range is 30%, but in R_1 it is only 15%, in R_2 it is 10%, and in general in R_r it is only $\frac{30\%}{r+1}$.

The equilibrium condition for this model is

$$(9.1) \quad x_r = \frac{0.3x_{r-1}}{r} + \left\{ 0.9 - \frac{0.3}{r+1} \right\} x_r + 0.1x_{r+1}$$

It can easily be checked that the solution is $r = 1, 2 \dots$

$$(9.2) \quad x_r = \frac{3^r x_0}{r} \quad r = 1, 2, \dots$$

The cumulative distribution corresponding to $x_0 = 10^6$ is given in Table VI, and the corresponding Pareto curve is shown in Chart 3. As one would expect, the steadily worsening prospects of income-promotion that are found as consideration passes up the income scale are reflected in a continuous downward curvature of the Pareto curve.

TABLE VI

Income.		Number of incomes exceeding x .
	x	$(F(x))$ (thousands)
£62 10s.	.	20,085
£125	.	19,085
£250	.	16,085
£500	.	11,585
£1,000	.	7,085
£2,000	.	3,710
£4,000	.	1,685
£8,000	.	673
£16,000	.	239
£32,000	.	76.4
£64,000	.	22.1
£128,000	.	5.9

This example has been chosen so as to provide a very simple solution. In general, it will be difficult to obtain the equilibrium solutions in models where the promotion prospects, as reflected in the matrix $p_{ru}(t)$, vary throughout the income scale.

§ 10. A MODEL ILLUSTRATING THE REACTION OF CHANGES IN THE INCOME DISTRIBUTION ON THE MATRIX DEPICTING THE INFLUENCES SHAPING THAT DISTRIBUTION

In conclusion, a warning must be given that although the models discussed above throw some light on the reasons why an approximate obedience of Pareto's law is so often found in actual income distributions, they do not throw much light on the mechanism determining the actual values observed for Pareto's a . It is tempting to draw conclusions from the fact that in equilibrium

$$(10.1) \quad a = \frac{-\log b_1}{\log(1+h)}$$

where b_1 is the positive root of the equilibrium equation

$$(10.2) \quad \sum_{u=-n}^m p_u z^{-u} = 1$$

and h is the proportionate width of each income range. One might suppose that one had only to estimate the p_u corresponding to various economic situations in order to deduce the slopes of the Pareto lines in the consequent income distributions. But it would be just as sensible to guess at the consequent income distributions and deduce how much the p_u functions would have to be modified before that equilibrium was reached.

The point may be illustrated by a final model. Suppose that initially the income distribution is

$$(10.3) \quad x_s = 2^{23-s}$$

where R_s is the range $2^{s/2}$ £100 to $2^{s+1/2}$ £100; then the total income will be approximately 2^{25} £100.

Now suppose that the real income of the community is held constant and that the $p_{ru}(t)$ are given by

$$(10.4) \quad p_{ru}(t) = p_u, \quad r = 1, 2, 3 \dots$$

$$p_{01}(t) = p_1 \quad p_{00}(t) = 1 - p_1$$

where $p_{-1} = 0.3$ $p_0 = 0.5$ $p_1 = 0.2$ other $p_u = 0$.

The corresponding value of b_1 is $2/3$, so that the equilibrium distribution must be

$$(10.5) \quad x^s = \frac{2^{24}}{3} \left(\frac{2}{3} \right)^s$$

which involve a total income of approximately $\frac{2^{24}}{1-\theta}$ £100 where

$$(10.6) \quad \theta = \frac{\log 2}{\log 9 - \log 4} = 0.8547$$

The numerical value of this total income is about 3.44×2^{25} £100. Thus money income will have to rise in ratio 3.44, so that if total real income is to remain constant, prices must rise in ratio 3.44, so that the real income of those in R_0 will be only about 30% of what it was originally in R_0 .

Now suppose that originally an income at the lower end of R_0 represented the subsistence level. Then directly prices tend to rise some policy must be adopted to subsidise those in R_0 : let us suppose that prices are subsidised at the expense of prospects of increasing income. More precisely

$$(10.7) \quad p_{-1} = 0.3 + T \quad p_0 = 0.5 \quad p_1 = 0.2 - T \quad p_{01}(t) \\ = p_1 p_{00}(t) = 1 - p_1$$

where T is continually adjusted so as to keep prices and total money income stable.

It is intuitively plausible that this policy will lead eventually to an equilibrium distribution.

The corresponding value of b_1 is given by

$$(10.8) \quad (0.3 + T)b_1^2 + 0.5b_1 + (0.2 - T) = b_1$$

whence since $b_1 \neq 1$

$$(10.9) \quad b_1 = \frac{0.2 - T}{0.3 + T}$$

The total income will be $\frac{2^{24}}{1-\theta}$ £100

where

$$\theta = \frac{+\log 2}{-2 \log b_1},$$

and in order that this should be equal to the initial total income of 2^{25} £100 so as to obviate the need for higher prices we need $\theta = \frac{1}{2}$ and hence $b_1 = \frac{1}{2}$ and hence $T = 0.1$.

When we work out the equilibrium distribution we find, of course, that it is simply the initial distribution unchanged. Hence, it is truer, under our extreme simplifying assumptions, that the initial distribution determined the $p_{ru}(t)$ than that the $p_{ru}(t)$ determined the equilibrium distribution.

Had we allowed some increase in total real income, a lower value of T would, of course, have been necessary, and had we allowed for a continuous expansion of real income an altogether

more advanced model with a shifting $p_{ru}(t)$ function for low values of r would have been required.

These illustrations remind one of the impossibility of drawing any simple conclusions about the effect on Pareto's α of various redistributive policies by *merely* considering the effects of these policies on the functions $p_{ru}(t)$ representing the prospects of increase of income.

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CHOICE IN PSYCHOLOGY AND AS ECONOMIC ASSUMPTION

I

ECONOMISTS cannot be expected to show the same depth and rigour in their treatment of choice as psychologists. For to economists, choice need be no more than a convenient assumption of method; whereas to psychologists it must be of the essence. Economists are, however, to-day freely using the term "choice"; so that in the interests at once of consistency and common sense, it is desirable that the usages of economists should at least not be at odds with the more agreed findings of psychology. How far this is so is the subject of this inquiry.

It has, of course, been suggested by the recent swing among economists to the more subjective approach involved in "choice." This has been worked out in the preference analysis. As a method for first-year students it has not yet proved its superiority over the objective utility method. Beginners seem to gain confidence from a measurable foundation of "usefulness." But in more advanced work the new approach has certainly widened our view, and given us closer contacts with our actual internal experiences.

There are hints of the swing in Marshall himself. With him, maximum total utility is accepted as the economic optimum which will naturally, or rationally, prevail. This, stated from the individual side, gives the traditional dogma—"the uniform, constant and uninterrupted effort of every man to better his own condition";¹ or, at the level of markets, we simply postulate the amounts of a commodity which will be bought at descending prices; or again, in behaviour terms, such a schedule could represent the *actual* demand for the commodity. Each process is guided to the equilibrium of maximum utility by the law of diminishing utility. This law is interpreted quantitatively—*desires* can fairly be taken as adequately represented by *satisfactions* from utilities, and "we assume that the resulting satisfaction corresponds in general fairly well to that which was anticipated when the purchase was made."² Marshall, in an interesting footnote, describes the direct measurement of desires or their satisfactions as "impossible if not inconceivable."² Some

desires are impulsive, many habitual, many even morbid or unhealthy, "and many are based on expectations that are never fulfilled."¹ Satisfactions in turn are often "not common pleasures"—they can conduce to our "beatification."¹ Thus in any case the measurements of the desire and its satisfaction might differ. "But as neither of them is possible, we fall back on the measurement which economics supplies of the motive or moving force to action; and we make it serve, with all its faults, both for the desires which prompt activities and for the satisfactions that result from them."¹ In sum, purchase prices are assumed to measure quantitatively the satisfactions anticipated when the purchase was made, and resulting satisfactions are taken as truly and sufficiently reflected by anticipated satisfactions.

It is characteristic that Marshall insists on the irrationality of many of our actual motives, and this is a fact which psychologists are apt to underline when commenting on the severely logical nature of economic reasoning.² But for purposes of method, there is complete common sense in the classical assumptions, so long as one remembers "all the faults" of the economic measure.³ Pigou follows out Marshall's technique. "The money which a person is prepared to offer for a thing measures directly, not the satisfaction he will get from the thing, but the intensity of his desire for it":⁴ (desire at the time of purchase being equivalent to satisfaction *anticipated* then). The terms "anticipated satisfaction" or more concretely "intensity of desire" are certainly preferable to the colourless make-shift "utility" as descriptions of our motives in paying purchase prices. For it is only *after* we have bought that we experience *actual* satisfactions. These latter affect our desires only indirectly and partially through the backward influence of our experience. The "anticipated-satisfaction" or intensity-of-desire approach leads much more easily and truly to the "indifference" or individual preference technique; for we know we judge between competing intensities of *desires*; but the picture of *utilities* of differing quantity presented to our consciousness is not realistic. If it were, there would be

¹ Marshall, *loc. cit.*

² Cf. Thouless, *General and Social Psychology*, 3rd edition, pp. 293 *et seq.*

³ The trouble is that we are incapable of maintaining scientific rigour in practice. Economists are constantly led into making theoretic pronouncements about practical problems, for which the narrow basis of their scientific assumptions gives exactly no justification. We must do the best we can in practice, and, as we are placed, we may expect to go on so erring to the end of time. But it is well to realise our limitations.

⁴ Pigou, *Economics of Welfare*, 3rd edition, p. 23.

¹ Adam Smith, *Wealth of Nations*, Vol. I, p. 306 (Everyman).

² Marshall, *Principles*, 8th edition, p. 93.

no question of choice. Strictly speaking, the largest utility price ratio would inevitably be "chosen."

Thus it appears that for Marshall and Pigou utility was sufficiently equivalent to "anticipated satisfaction" or "desiredness"¹ at the moment of purchase. Each of these is a straddling term. In each we can discern the first hint of the modern subjective developments. If, however, this desiredness were no more than the roughly proportional response to Bentham's power in objects² to create desires in us (their utilities being equivalent to the satisfactions they *actually* in some sense afford these desires), then an important result would follow from Marshall's shift from utility to desiredness at purchase. For only the strongest among our *desires at the moment* could exactly reflect this power in objects. This conclusion cannot be avoided if utility is accepted at all, and if "power in objects" is interpreted strictly, as surely it ought to be. Thus, strictly, Marshall would be confined to a purely mechanical interpretation of human economic choice. This, however, was quite impossible for one with his deeper ethical convictions. Of all the great economists, surely Marshall was the most perfect perfectionist. "The truth seems to be that as human nature is constituted, man rapidly degenerates unless he has some hard work to do, some difficulties to overcome; and that some strenuous exertion is necessary for physical and moral strength. The fullness of life lies in the development and activity of as many and as high faculties as possible."³ This is the essential Marshall, and it is a typical expression of perfectionist faith—"the growth of those habits of body, mind and spirit in which alone there is true happiness."⁴ It is true desiredness is not desirableness. But to Marshall the perfectionist, the latter must be the major premiss, even though, with ironic austerity, he evaded discussing it.⁵ And even desiredness must contain some autonomous element for individual conation, in which case it cannot merely reflect the

¹ Pigou, *Economics of Welfare*, 3rd edition, p. 23.

² "Power in objects" is, so far as I know, Mr. Little's phrase (*Critique of Welfare Economics*, pp. 7, 19). It seems to me entirely apt. I have not found it in Bentham's writings, but his usual definition of utility amounts to the same thing: "by utility is meant that property in objects, whereby it tends to produce benefit . . . etc." (Cf. the third paragraph of his *Principles of Morals and Legislation*.)

³ Marshall, *op. cit.*, p. 136. Cf. *Memorials*, pp. 82, 89, 367, 368, and generally Talcott Parsons, *The Structure of Social Action*, Ch. IV.

⁴ Marshall, *op. cit.*, p. 17: "Satisfactions" can cover "all incentives to action"—even "the desire for excellence for its own sake" (p. 89), presumably.

⁵ Marshall, *op. cit.*, p. 17, footnote.

exact power in objects to afford satisfactions. In sum, this gentle change of emphasis by Marshall makes a theory of choice possible for economic theory, where it was impossible in strict logic for utilitarian thinkers. The strongest desire in some sense is also chosen; and "chosen," if it is to be used at all, must add something, especially if Marshall's "anticipated" is to mean anything. Although Marshall preferred to leave this process vague, there is really no doubt that he believed choice had some reality and final importance.

The scheme outlined by Professor Hicks,¹ mainly following Pareto, appears to suggest an explicitly less mechanical view of the choice process than the strict Marshallian formula. Maximum total utility is in principle undisturbed as the rational assumption for economic theory and behaviour. We are regarded as having achieved a sum of maximum total utility, or as being capable of achieving such a sum. Quantities of utility are, as it were, aggregated in this homogeneous final economic estimate. Choice then has simply to answer a relative question: which is the better of the alternatives open, in respect of the greater amount of utility expected? "How much better" (the exact quantities involved) is a question about which economic choice need not concern itself. The psychologist is indeed apt to suggest that the economist *should* not concern himself with exact measurements of the strengths of desires, as the intensities of desires are incapable of exact measurement. "It is price alone which is exactly measurable, and a price does not even indirectly measure a desire."²

This more relative individual treatment is bound to suggest that the existence of will centres in individuals implies *some* autonomy in economic choices. We do in some sense influence valuations when we choose the better of two or more competing claims on our scarce resources. The coercive power of objects is here ascribed to the remote lodestone of assumed maximum utility, where it tends to be taken for granted and properly forgotten. The traffic of everyday concern is rather at the margins of choice and the markets. At the margins we are represented as finally coming to rest, because equally balanced between alternative additions to total utility, between which we are mathematically "indifferent." Whether we ever decide on one or the other, or why we should, is not examined, and on this formulation of "choice" there is no reason why it should be. For "choice" is here determined by bare empty equality. We hang in perfect balance, at least sustained by the demonstration that maximum

¹ J. R. Hicks, *Value and Capital*, Ch. 1.

² Thouless, *op. cit.*, p. 294.

total utility must be achieved. Up to this point we must choose the most intense present desire; but at equilibrium we must presumably rest in suspense. For a balance can be maintained only if the two forces suspending it are kept equal. It will later be argued that this suspense cannot really leave us indifferent, simply because we characteristically dislike suspense, or continuing balance between alternatives, where a choice must be made. However that may be, there is at least a swing here in the position: for "indifference" or "preference" are at least bound to be states of individual consciousness—they can primarily be nothing else. If, then, we have two desires, as between which we can be indifferent, or express preference, it appears that this must mean something different from two equal powers in objects, if we can to any extent influence the decision, apart from these powers. And this at least suggests the need to examine those rather more refined theories of choice which suggest a libertarian, or rather a rational element: theories which suggest that we choose what in some sense appears good to us, a sense other than mere single-line greater quantity or strength, and that we so choose to some extent at least because it so seems good to us.

It may be doubted whether the preference approach does more than suggest or leave open these wider views; and then only if we wish to explore them. For what finally determines choice under that approach in our recent economic texts is the fact that the *highest* indifference curve (actual or possible) must be chosen; but this is really only the greatest total utility criterion. What in fact determines the optimum position for choice under these criteria is simply the scarcities of the factors of production and the assumed inevitable decline of our actual powers of appreciation. And even in the positions of indifference, on this theory I should not choose. A choice would be less mathematically rational than continued suspense between equals. But it would assert equality in what is in the nature of the facts bound to be in a wider sense the opposite of indifferent, if suspense is in fact disagreeable. Still, the door has been opened, if only just. The preference statement at least reflects some uneasiness among economists as to whether their assumptions are in any real harmony with the facts. This at once suggests that an obvious test of this important issue would be to compare the actual assumptions of economists about economic choice with the broad consensus of the descriptions of choice we find in modern psychology. Is, then, the testimony of psychologists unanimous and clear? And, if so, how does it square with the economists' assumptions?

II

I have made such study of accepted modern texts in psychology as appears necessary.¹ From this, it seems apparent that they present a clear and surprisingly unanimous interpretation of the broad nature of human volition; an interpretation amply sufficient to reveal the narrow inadequacy of the economists' assumptions. Quotations are taken largely from Stout, because his writings have seemed to me at once the clearest and the most penetrative of those studied. But, Ward, Thouless and Woodworth are, so far as I can judge, in agreement with the essentials, which concern this argument, of Stout's picture of the stages in willing. This process is regarded as taking characteristic shape when ideas become sufficiently self-subsistent to offer a basis for desires. Desire is in turn characterised by the presence to consciousness at once of a feeling and a conscious picture of how to satisfy that feeling. To quote Thouless's excellent summary, "Desire is a feeling condition of unrest which is directed towards the attainment of an end represented in consciousness. The difference between a desire and a mere impulse is that this clear mental representation of an end is absent in an impulse. Desire differs from emotions in the fact that it is prospective² in its direction—i.e., the feeling refers to something which is to be attained in the future (and not to something in the present situation)."³ This analysis of desire in turn requires an active unit of consciousness to hold together the feeling and the "clear mental representation" of its potential satisfaction. So a continuing self or centre conscious of and capable of rationalising such different elements is necessary to render such desires and their definitions intelligible. Stout amplifies the nature of this self: "Under the concept of the Self as expressed in the word 'I' is included in systematic unity the life history of the individual, past, present and future, as it appears to himself and others; together with all its possible or imaginary developments."⁴ The willing process is then simply the activity of this self as in some sense making the best for itself of the situation and the problems

¹ They are G. F. Stout, *Studies in Philosophy and Psychology*, and also his *Manual of Psychology*; James Ward, *Psychological Principles*; R. H. Thouless, *General and Social Psychology*; R. S. Woodworth and D. G. Marquis, *Psychology*.

² Or as Marshall said, anticipation is involved. Desire requires a theory of expectations.

³ Thouless, *op. cit.*, 2nd edition, p. 358. The wording is slightly different in a way that does not affect the argument in the 3rd edition, p. 290.

⁴ Stout, *Manual*, 3rd edition, p. 705.

raised by the conflicting claims or feelings of dissatisfaction and the visions of possible satisfaction which it experiences in desire. "Voluntary action is to be sharply discriminated from impulsive action, and deliberation from conflict of impulsive tendencies. The difference is, that in impulse action follows the isolated conative tendency; whereas in voluntary decision special conations and their ends are first considered in their relation to the total system of tendencies included in the conception of the Self."¹ Choice is then simply this self's identification of itself as a continuing centre of awareness in memory, in present integrated awareness or action, and in future forecasts, with the preferred claim. "Voluntary action does not follow either of the conflicting tendencies, as such; it follows *our preference* of one to the other."²

This choice is clearly far from automatic. All these authors are emphatic, accepting it as almost requiring no argument, that the process, when the self is faced with these claims, splits into two clear stages. First comes the stage of deliberation between the claims. This stage is at once logically necessary, if a description of the willing process is to recognise the accepted fact that it is here, in some sense, other than a mere reaction to the power of objects; and also it is quite irresistibly imposed by the facts revealed by introspection—a reason specially conclusive for psychologists. The second stage is then the decision to adopt one of the conflicting claims for execution. And here again all the psychologists studied insist that this is not merely or truly the recognition of the "strongest" claimant. "The alternative is not 'this'? or 'that'? but 'shall I do this'? or 'shall I do that'? Each line of action with its results is considered not in isolation but as part of the ideally constructed whole for which the word 'I' stands."³ What I deliberate about then is whether I should do this or that. This difference between deliberation and decision Stout describes in such terms as these. "While the process of deliberation is going on the motives are motives for deciding: when the decision is made, the triumphant motives become motives for action."⁴ Or again, "While deliberating we are making up our mind, and we do not know what our mind is

¹ *Op. cit.*, p. 706. The passage in Stout's *Studies*, pp. 54–9, amplifies and illustrates his account of voluntary action. One cannot forbear from quoting here his well-known parable, ending with "A self can hardly consist in a sneeze" (p. 59). Can it not in positive economic theory?

² *Op. cit.*, p. 706. My italics, to notice an interesting use of the word which economists have adopted.

³ Stout, *Manual*, p. 707.

⁴ *Idem*, p. 709.

going to be. When we have formed a decision, we have come to know our own minds. The conception of the Self has become fixed where before it was indeterminate."¹ Indeed, "in a perfect volition, opposing impulses are not merely held in check; they are driven out of the field. If they continue to exist, they do so as external obstacles to a volition already formed."²

This last statement reflects a vital conclusion to be drawn from the psychologists. It is that choices, voluntary decisions, are unique. Choice is not a mere desire, nor yet is it only the strongest desire. So, if preference is meant to mean no more than strongest desire, and that seems to be the general intention, then in the interests of consistency, "preference" should be confined to the activities of the deliberation stage, as meaning the most attractive at that stage, but not as involving choice. This strongest or preferred claim is then raised to the unique and qualitatively quite different status of choice simply because by being chosen it has been distinguished among the contesting desires as that one which the self recognises as best fitting into its own unique experiences and situation and programme for action. Woodworth elaborates this uniqueness by showing how "if a motive appeals to him against his total interest and best judgement, he can mobilise other motives and organise a team of motives that shall be stronger than the single motive. This so-called 'will-power' is really the whole individual mobilising all his powers so as to accomplish what he most wants to accomplish"³—surely a quite convincing and clearly important statement of fact. Stout again illustrates how "the judgement that we are going to act in such and such a way shapes our thoughts and our other volitions into consistency with itself."⁴ He continues with a vivid account of the "fixity" of the will, based on the identification of the self with *its* choices. The distinction is also stressed in the definitions Stout offers of desire and voluntary decision. "A volition is a desire qualified and defined by the judgement that, so far as in us lies, we shall bring about the attainment of the desired end. Mere longing may be defined in the floating idea of an end. Mere desire is defined in this idea together with the problematic judgement that we may or may not attempt to realise it."⁵ Decision, or choice, adds to the felt presentation of a want, or to deliberation on desires, "a judgement that so far as in us lies we shall bring about the attain-

¹ Stout, *Manual*, p. 710.

² *Idem*, p. 711.

³ Woodworth and Marquis, *op. cit.*, p. 374.

⁴ Stout, *Studies in Philosophy and Psychology*, p. 55.

⁵ Stout, *op. cit.*, p. 53.

ment of the desired end," if possible. In longing, then, we are positively not considering attainment as for us possible; in desire, a felt want or idea of an end is regarded as problematically, or alternatively attainable; and volition adds to this a judgment that a certain end is to be adopted as *our* experience, our responsibility, our expression of ourselves. And these distinctions are reflected from no ethical or metaphysical theories: here we have psychologists obstinately striving to describe the facts, and nothing but the facts.

The argument has so far been concerned to state the process in the very simplest terms. This properly brings out the fundamental point—that there are two stages, one of deliberation and the later stage of choice. It is then fairly clear that the economic process ("economic choice," where economists use the phrase) must attach characteristically only to the first stage—deliberation. For it would be difficult to maintain that in practice we ever make a realistic choice or final decision for economic reasons alone, or to enjoy an economic experience only. It might be answered, "but this is true of every experience: we never choose any experience to secure any single analytic satisfaction." This, however, I should maintain, is not true of ethical or moral choice, in which sphere choice finds its real stature, and the very nature of which it is to be comprehensive as to all possible satisfactions, and to express the full man. To argue this would take us too far afield. We can meanwhile avoid the issue by limiting ourselves to a positive view of economy as the means, when the need for economy, the value of efficiency, are clearly important aspects which we take into grave account at our deliberating stage. Whether they can there appear as possible ends in themselves, or only as means to other ends, is also a further question with which it is not here proposed to burden the argument. The issue is for axiologists—whether economy can in any sense be an end in itself (or have intrinsic value)—and, if so, in what sense? (though since Aristotle they have not found the time to deal with this). The whole category of means and end is very slippery. It is probably best regarded as no more than a useful pragmatic category. For all means have a way of broadening into ends, and so backwards and forwards, in our consciousness and conation. Indeed, the ways in which we can achieve ends are bound to qualify and express these ends. Examples may be spared.¹ But it may be worth remarking that the true use of the end-means relation has been rather falsified by economists, simply

¹ Cf. Ross, *Foundations of Ethics*, pp. 192, 195.

because in the economic processes of modern industry and exchange, economic means seem so obviously to be merely means, and the ends to be outside the economic (or rather industrial) process. This is, of course, especially typical of the nineteenth-century tendencies in theory and practice. We to-day may at least have a somewhat truer understanding of the end-value qualities in our economic activities.

We must, however, notice that so far we have given the very simplest outline possible of the process up to a volition. The processes of deliberation and choice are much more complicated and prolonged than has so far appeared. Sir David Ross has said as much on this matter as seems necessary for completeness here—in his chapter on "The Psychology of Moral Action."¹ He writes there that "attraction by an end is enough to set up consideration of means": (here he reminds us of the arduousness of the means involved in becoming, for instance, Prime Minister). If there is no such consideration of means, we have not reached beyond mere longing. He tells us further, however, that "to choose is to choose to take means to the attaining of the end." That is, we mean to act. This does not, of course, mean that in choosing we choose merely means; it is the decision to take the means, some means, that is characteristic. We have already presumably decided on the best means among the alternatives, when we were at the deliberation stage, before we had decided finally on any course of action. Some idea of the complications involved is, however, illustrated by this passage: "A certain amount of deliberation as to particular means has probably taken place before the choice 'to take means to a certain end.' For a wise man, at any rate, will not choose so unless he has satisfied himself that the unpleasantness or the unworthiness of the means does not make the end an end not worth pursuing at the price. But it is enough at this stage to have assured oneself that there *are* means such that the end is worth aiming at by the use of them. The agent may have assured himself of so much, without having assured himself that he has thought of the *best* means to the end. Thus, after the first choice, *the next step is a further deliberation*, in which the problem he is trying to solve is not, as before, what end he is to take the means to, but what means he is to take to the end he has already decided to pursue."²

¹ *Foundations of Ethics*, Ch. IX.

² Ross, *op. cit.*, p. 196. I have italicised "the next step is a further deliberation."

III

The results of this comparison between our psychologist's description of choice and the simple economic assumption about it (that choice is no more than the strongest preference) suggest some interesting consequences. This article will mention only some which seem of special importance. The first is that, on the psychologist's formula, diminishing utility (or diminishing marginal substitutability) must operate, if at all, at the stage of deliberation, not that of choice or decision. For only in deliberation do we judicially compare all the possible lines of action. Marshall reduces the objective side of this process to the possible alternative amount-price combinations at a moment of time. Decision, however, according to the psychologists, connotes that any actual choice is no mere equal alternative. It is uniquely adopted, in actual life. But it cannot be so in economic theory. A position taken only because its utility is greater (or its indifference curve is higher) is so "chosen" for this purely objective reason, and for no other, the rational conclusion from any succession of figures. It "chooses" itself: the objects enforce the decision. But this conflicts with the essence of the psychologist's description. For the "I" adds nothing to the nature of the economist's "choice." No deliberation is necessary, for the "choice" is determined. If this is so, it would be more consistent, if less realistic, to miss out reference to choice altogether in positive economic theory. Certainly Marshall, with his apparently instinctive genius for avoiding inconsistency, adopted this course. For his method of postulating demand and supply schedules at a moment of time, meeting at equilibrium points, requires no flirtation with subjective elements in the psychologist's doctrine of choice. And it gives determinate results, so long as we confine ourselves to the mere logic of a tendency to diminishing utility. Marshall realised, indeed insisted, that the facts, in the shape of the increasing returns tendency (plus human nature), must disrupt these equilibria; and the supply side also reflects the "choice" motive, for rationally, enterprisers must prefer increasing return techniques, and, therefore, disequilibrium.

As the tendency to diminishing utility is dominantly a part of a deductive technique, we should not perhaps expect that psychologists would offer much support for it in their description of the *facts*. They certainly do not give any support to a Benthamite (purely objective) "power in objects." On the contrary, any references made are in subjective terms; for this surely

follows from their insistence on the subjective determinants of choice. Stout, discussing "The Herbartian Psychology," refers to a "law of diminishing susceptibility."¹ "The rate of increase (in sensation) is smaller in proportion as the pre-existing quantity of sensation is greater." This seems to me about as much real concrete meaning as any formulation of this "law" can bear. For, as soon as you rise above sensations to the desire stage, you introduce the self as desiring; and then you link up with anticipation, and with all the other desires. But then, for analysis, the astringent limits of "*ceteris paribus*," must be imposed. And in consequence each general "law" dwindles to one artificially isolated case; a tracing of strictly abstract reactions, as in fact "other things" cannot remain equal. Our "realistic" law then becomes no more than a prescription of method.

Still, that prescription as to diminishing desire (shall we say?) is probably the most fruitful hypothesis we can make as a mere start to analysis. What does emerge is this: any comparison of degrees of desires in their scales, however exactly plotted, is bound to be prior to the stage of choice. For choice, the psychologists say, transmutes the chosen desire to another level of estimation and experience. Consideration of degrees of desire must then take place at the level of deliberation. For it is there that the economic process seeks to give exact definition to the objective alternatives, the intensities of the desires, as an aid to choice. And as this deliberation is in essence timeless, or abstractly instantaneous, other things *can* remain abstractly equal at this stage. The only sense in which we can think of a law of diminishing utility as applying to choices could be that as time passes we make a *series* of different choices relative to additions to total growing quantities of our commodity; so that if we have successively a greater supply, other things equal, the satisfaction from one unit in *successive* choices would diminish. But the psychologists, and common sense, would here at once insist that in fact a change in the conditions, not any special law, was the determining influence. So again Marshall's timeless schedules seem alone to achieve consistency; but this only by analysing possible alternatives abstractly as grounds for deliberation. The schedules do not rise to the level of choice at all.

A further issue on which these psychologists are refreshingly unanimous is as to the nature of the state of suspense (or "indifference") in deliberation. They agree, indeed insist, that we

¹ *Studies*, p. 13.

find this suspense in itself unpleasant, positively unpleasant.¹ It follows that the conception involved in indifference, in its mathematical simplicity, simply cannot describe our actual state, even at the stage of deliberation. For even if we were indifferent as between the specific pulls of two (equal) desires, the unpleasantness of being in such suspense between them would force us to choose; this added to the consideration that the need to use our scarce resources to the full enforces some choice. Speculation might suggest that we could throw the suspense displeasure into the scales of our alternatives. But this is irrational, because the displeasure of suspense affects each possibility equally, so long as it is only a possibility. A spin of the coin may then have theoretical as well as common sense. But in fact, as all our desires are unique, and so cannot have this merely mathematical type of equality, it seems that in practice we do make our choices on concrete estimates of the different *qualities* of desires. Even if we like to play with the idea that the pain of suspense might be equalised at the margins to the positive pleasures of the alternatives between which we are indifferent, the result would not be absence of choice. We should choose, for the positive reason that we can always so rid ourselves of the positive pain of suspense, without any equal loss of another alternative, as is the case between equal pleasures for both of which our resources are insufficient.

It appears then that, as well as being inapplicable at the choice stage, the indifference positions are not true descriptions of the counters at the debate stage. When we deal in preferences, we should try to think concretely. Indifference as a concept seems then suitable only in pure equilibrium theory—suitable enough for mathematical economic exercises in which deliberation and choice are out of place. Actual economic activities result never in indifference—or if they do, indifference simply means the issue is trivial. Where deliberation is on concrete claims, indifference could in fact correspond only to absence of desire, the antithesis of any unique act of will, at any stage. Indifference might be present in longing, or day-dreams, where and just because possible choices and realisation are not in question. But the general result is that the term adds nothing which cannot more truly, less dangerously, be rendered by a mathematical term; for such a term will at least not suggest any realistic relevance. It might be argued that when deliberation judges the “intensities”

¹ Cf. Stout, *Studies*, pp. 51–9; Woodworth, *op. cit.*, p. 372; Thouless, *op. cit.*, 3rd edition, Ch. XV, especially p. 231.

of the claims equal, it might rest in positive contentment with this equality. The desires are extinguished by mathematical necessity: or, to put it more fairly, it might be held that it is *rational* to desire what gives maximum total utility, and pushing forward to indifferent positions secures that. The short answer is that we just do not desire indifference. We desire certain concrete experiences, and experience always presents us with positive examples of these in embarrassing profusion. The choice is for one of these (and rational activity can, of course, be one of them). Choice lies always between different forms of experience as embedded in the matrix of our active lives. Even a mathematical economist cannot lay his hand on his heart, and affirm that he ever typically desires indifference, or chooses it at the margins. The psychologists certainly tell us very insistently that, while we can desire the rational because it is rational, this is rather unusual, and is intermittent, even with the elect. We can desire to create rational *systems*, but the bulk of the desire field is occupied by claims which spring from emotions, sensations, propensities and sentiments, in themselves neither typically rational nor entirely capable of rational integration—indeed, obviously often the reverse.

We may also ask whether psychology makes any use of the economist's maximum hypothesis as affecting choices. Certainly, as far as the process of conation goes, the psychologists seem content with a precise description of the growth of desires and volitions. In this, the need to be rid of suspense seems at least a *sufficient* cause for making decisions. This is as far as the cautious descriptive psychologist need go. As to the nature of human goals, the end of conation, inquiries into the nature of happiness, or theories of the good, or of rights and duties—all these the psychologist justifiably refers to the moralist, as interested in the question “why”? Psychology need hardly go beyond the “how” of it. The economist has this justification for seeking a maximum, that he may claim to go rather farther than the psychologist, though in a much narrower vein. He may say, we are concerned with the question “How much of each?” (Each, he assumes, yields homogeneous satisfactions in some undefined sense, each of which is subject to satiation.) So far as he so limits himself, he can arrive at determinate final conclusions. But if he slides into applications, and implies that these assumptions are adequate for real choices in business or life, he will then get the reverse of support from these psychologists. For they insist on continuous, essential plasticity as distinct from “*ceteris*

paribus": they insist on a plastic integrated experience developed by an individual centre of consciousness dealing with a multitude of claims of different quality, and with prospective imagined satisfactions, as distinct from the isolated slide under the microscope of the theoretical economist.

Our psychologists are indeed again unanimous that our decisions are *not* typically determined by the strongest or most intense desire reflecting some greatest possible "utility." The question of their intensity can certainly be and is constantly deliberated at that stage. But choice is far from being determined by any factor that can truly be described as strength or intensity. Toothache can be as intense as any experience; but we do not always, or typically, choose to have the tooth pulled. The suspense of a young man worrying as to accepting or refusing an offered post can be the psychic pit of misery. But even in these, as in any cases, we can choose the longer view, not to mention the better view. Characteristically, we do not inevitably give in to even excruciating suspense or agony. And we spin a coin only over trivialities. We more typically steer our course by a view of our whole experience, past present and to come. Such decisions are clearly unique. As against the wider sweep of this psychological description, the economist's narrow one-way analysis of diminishing marginal substitution must appear thin and very provisional. Yet it is the right first step, and economists can confidently point to the results they have achieved, as compared with other social sciences. All is well as long as we remember our limitations. And the substance of individual psychology does at least reveal to us rich prospects for development. It suggests that at some stage and in some way we may advance towards the systematic organic level of the activities of individual selves, towards the subtle comparisons and blends of their actual satisfactions, as against the analysis of artificially isolated wants. But here we glimpse only a possibility. We have not taken an assured step on this journey.

IV

The main result of this comparison is the suggestion that positive economics should eschew the use of indifference and choice, as strategic categories or foundational terms in its structure. (It is not necessary to avoid the use of the words in the everyday vocabulary of the science: indeed, in the case of choice at least, this would be inconvenient and tiresome.) The reason is a positive one. The strategic use of indifference and choice builds

Economics on an empty or on a false basis. Indifference has no real contact with the human process of voluntary decision at any level worth considering; and if economists begin by assuming that it has, they lay themselves open to deductions which are positively false in relation to that experience. Choice, on the other hand, if exactly used, is too concrete. It cannot be dealt with by the methods of analytical positive Economics. It involves a qualitative change from the stage of deliberation on which psychologists so unitedly insist; a change caused by the synthetic process of self-identification with the proposed act, and by the process of fitting it into the whole personal experience. It is therefore a term strictly suitable only for the treatment proper to normative sciences. The term preference is, however, at once entirely proper for positive Economics, and entirely correct in relation to the stage of deliberation as between claimants in the competition for scarce means. For it is essentially and completely a relativist term. It therefore fits the ordinal positive analysis, as contrasted with the absolute final nature of choice or voluntary decision. Its use will make the boundaries of positive Economics clear and accurate.

There may be speculation as to the place of welfare economics in this argument. Any remarks at this point must be entirely tentative. But the psychology of the matter seems to indicate that if welfare is accepted as in any way determined or influenced by human choice, then it cannot be adequately treated within the limits of positive Economics, as here defined. If so, if welfare means what it seems to say, then it would need to come under the general rubric of voluntary decision. It would deal not only with means as means, but also with the economic reasons for making final decisions, or for choosing ends, in the strict sense of choice. And the fact that all means have inevitably end qualities, and that all ends can themselves become means to further ends, indicates broadly the proper scope for a normative science of welfare economics. It could grow only in relation to Ethics and Social Anthropology. The question how far economy or efficiency have intrinsic value, if at all, would be bound to arise here. But at our present stage, these are mere speculations. They at least suggest that the prospects for Economics are as vast as they are obscure.

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NOTES ON USER COST

USER cost is a concept widely known, little understood and almost never used. These four notes discuss, in order, Keynesian user cost, user cost as a determinant of current output, the calculation of user cost and the difference between user cost and "retainer cost."¹ A few remarks on the usefulness of the concept will be found in each part.

It will be seen, in what follows, that finding user cost involves a precision of calculation far beyond the habits or resources of the entrepreneur. Even if we could show that some entrepreneurs do make decisions of the completeness described in Part III below, it is unlikely that there is any business "ritual" which generally corresponds to such an ordeal. When, to this difficulty, we add the further obscurities of uncertainty and risk, and the subjective attitudes to them, it becomes quite clear that rough-and-ready planning, what text-books call long-run profit-maximisation considerations, is the most that we can expect of entrepreneurs. User cost is an economist's tool of analysis, one which can be applied to situations where short-run maximisation is obviously not relevant, and one which may prove useful in policy discussions of the stock of capital or resources. He is a rare entrepreneur who thinks and talks in terms of marginal cost or revenue; and we are not here assuming that even he explicitly considers user cost. But often in many industries, occasionally in some, user cost is implicit in current decisions.

I

The owner of a good or service may earn a net revenue by putting it to a certain use, in production or consumption. Other uses might also earn him a net revenue—consuming or producing in other ways, leasing or selling to others. These other uses may take place in other periods, and there may be opportunities to postpone *this* use till a later period. These alternative net revenues are the *opportunity costs* of putting the good or service into this use, and the greatest of them is called *the opportunity cost*. When the net revenue exceeds the opportunity cost, the

owner cannot improve his position by transferring the good or service to other use.

The relevant net revenue from a certain use, and the opportunity cost of adopting it, are measured in the satisfactions received, or expected, by the owner. Comparisons can therefore be made only by the persons who value the revenues and costs. Outsiders, who can, at best, assign only money values to these satisfactions, will probably be in least error in the case of frequently sold articles of commerce. This suggests that the highest-market-priced alternative may be the opportunity cost of a certain action, but private surpluses received cannot be known. Net revenue is here defined to mean the difference between current costs and current revenues, when current costs are outlays made in connection with production and selling activities.

From the point of view of the owner of a good or service, opportunity cost is the same as Mrs. Robinson's transfer earnings and transfer price,¹ while rent is the difference between this transfer price and the earnings actually received. On the other hand, from the viewpoint of the entrepreneurs, the opportunity cost is the greatest alternative net revenue he could receive either by putting these goods and services to other uses or by selling them and using the proceeds in other enterprises. When *timing* of use is as important as its nature, the minimum entrepreneurial opportunity cost is the interest yield of resources lent out to other entrepreneurs.

User cost, as distinguished from opportunity cost, is a term invented by Keynes. The term is currently applied to the opportunity cost of putting goods and resources to a certain use, future alternative revenues being given equal weight with present alternative uses. Thus the suggested meaning of user cost covers only goods—tangible assets—yielding revenues measurable in money, as a special case of opportunity cost, which covers goods, factors and services, yielding psychic and money net revenues.

Keynes introduced the concept for a special, and different, purpose; to define income rigorously so that consumption and saving could be firmly explained by it. User costs are a diminution of personal income—the greater they are, the smaller is income, the smaller they are the larger is income, and if they become negative, their absolute value is added to income. Thus consumption is a function of income minus user costs. Keynes does not give much explanation, but presumably the theory is

¹ Professor F. W. Paish commented on an early draft of these notes, and I have since had the advantage of discussions with Mr. Edey, Mr. Solomons, Mr. Yamey and Mr. Harry Johnson.

¹ *Economics of Imperfect Competition*, p. 104, cf. Henderson, *Supply and Demand*, p. 96.

that a first charge on personal income is user cost, followed by consumption-and-saving decisions.¹

Keynes's formulation of user cost can be expressed as

$$(G' - G) - B' + A_1$$

that is, user cost is primarily equal to $(G' - G)$, where G' is the value of entrepreneurial stock and equipment had they *not* been used, and G is their value after use. This expression must then be reduced by B' , the outlay on factors and stores necessary to keep the equipment in optimum condition if they are unused; G' , in other words, overstates the value G' would have had if the equipment were neither used nor maintained. On the other hand, the expression must be increased by A_1 , outlay on the produce of other entrepreneurs, for during use purchases have been made which make G greater than its value after use would be without maintenance, improvement and re-stocking.

Keynes divides the expression into two parts. The first, $(G' - G) - B'$, shows the change in the value of stock and equipment which has taken place because it was used. It is a decrement, or increment to capital, for him and for society, so that it can be called investment, I . The second part, A_1 , is relevant only to individual entrepreneurs, as it shows the position of investment which has merely been purchased from other entrepreneurs. For an integrated and/or aggregated society, A_1 can be ignored, since it does not affect the total I , but merely the ownership of it. Thus I , which is total investment minus total disinvestment, is equal to total user cost, though of opposite sign: if total social user cost is positive, social investment is negative. If we subtract from investment the "supplementary," involuntary, expected depreciation by obsolescence, wastage or mere passage of time, we have $I - V$, or $-U - V$, which is net investment.

Lerner, discussing Keynes's treatment, has suggested that the difference between the value of the asset after production, and what it would have been without production, $(G' - G)$, be called *prime* user cost.² This is the concept to be used in this paper.

¹ *General Theory*, "Appendix on User Costs," p. 66, see also pp. 57, 92 and 98-104.

² Cf. A. P. Lerner, "User Cost and Prime User Cost," *American Economic Review*, Vol. 33, pp. 131-2. Lerner considers that the question is whether to subtract F' , the factor cost without extra production, from *actual* factor cost to find marginal cost (which he would suggest); or from user cost, as Keynes did. (Lerner says Keynes's $-B'$ is actually $-F' - A_1'$, where A_1' represents purchases from other entrepreneurs when the extra output is not undertaken). We should add that if the output considered is the production of a *marginal* unit F' must be

It is a measurement of wear and tear during use, but only to the extent that it is not made good, so that prime costs will be overstated by that part of current outlay devoted to maintenance and replacement. There is thus no simple algebraical function relating Lerner's prime user cost to output alone, for its value depends also on entrepreneurial decisions about maintenance and replacement.

This substitute definition is the more suitable one because Keynes's user cost is an aggregative concept. His concept, he wrote, analyses "the current proceeds of production unambiguously."¹ "If the reader tries to express the substance of this otherwise, he will find that its advantage lies in its avoidance of insoluble (and unnecessary) accounting problems."² As matters have so far turned out, Keynesian user cost has not formed a satisfactory aggregate in calculating income, but the insoluble accounting problems he mentions must still be attempted when analysing entrepreneurial decisions about output. The modified concept, *i.e.*, the fall in value of equipment, unqualified by the expense of maintenance necessary if it were not used, is easier to work with for this purpose than the Keynesian definition.

The *ex post* nature of Keynes's discussion of costs should also be emphasised. Some sort of period analysis was implied, but planning of output, and functional relationships between the cost, price and output of each period were neglected. In this paper, however, we wish to show that *ex ante* user cost is necessary to explain current decisions, and that economists cannot afford to lump together, as "depreciation," changes in present value caused by the passage of time, and by use.

II

Before considering how user cost can be ascertained, let us see how it can be used. Net revenue (the residue after current outlays are subtracted from current revenues) varies with the current rate of output. Current outlay is distinguished from other day-to-day outlays, in being avoidable. User costs pertain to pieces of machinery and equipment which must be presumed

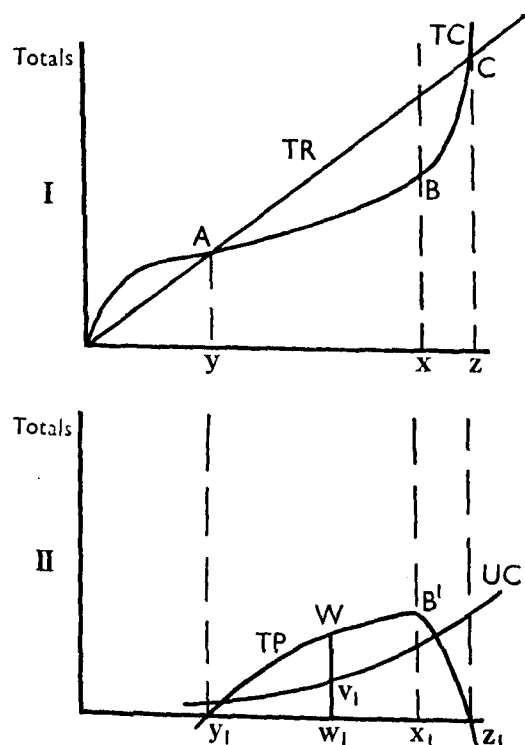
the existing average cost of production. But if a marginal unit involves a decision to open a plant, F' is presumably the factor cost of guards, maintenance, etc. This is important in discussing unemployed equipment—Keynes's "redundant" materials and ships; cf. *General Theory*, p. 69.

¹ *General Theory*, p. 66.

² *Ibid.* The word "accounting" here refers, presumably, to the work that accountants do, for the problem is certainly not confined to accountancy.

to be already in the possession of the entrepreneur. Thus unavoidable outlays undertaken in connection with paying for the equipment, or interest charges arising from such payments, are not current outlays. User cost is, in fact, a tool of analysis applicable in discovering whether the initial investment in equipment is profitable, with special reference to the durability of the machine and the duration of its profitable output.

As long as the entrepreneur can, by changing the rate of



output, add to present net revenue more than the consequent reduction of future net revenue, it is rational to continue to alter the rate. The consequent reduction of future net revenue is measured by the user-cost curve, and it is this we wish to confront with the net-revenue curve. At some output the two will change at the same rate, and the net position then cannot be improved.¹

In Diagram I we show the total revenue curve TR (here assuming pure competition; the actual slope is irrelevant). The outlay curve TC cuts TR in A and C , and the current net revenue, the distance between ABC and AC , is largest for output x . As

¹ Cf. F. Lutz and V. Lutz, *The Theory of Investment of the Firm*, Princeton, 1951, Chap. 4, where a diagrammatic approach to user costs is introduced.

mentioned on p. 371, outlays here include maintenance expenses needed to keep the equipment in the optimum state of repair.

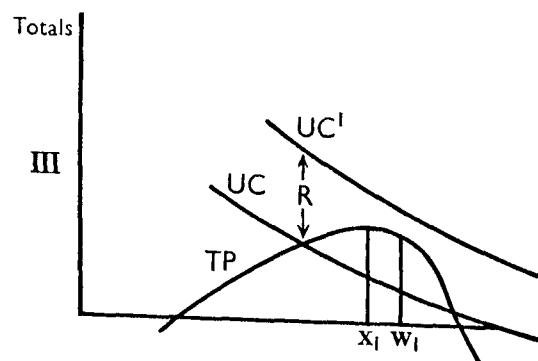
Instead of considering this output, let us instead consider the whole range of profitable output, by drawing a curve of total "profits" TP as a function of the rate of output. When this is done, we can then draw as a function of output the curve which expresses the user cost, UC , of the output in question, (Diagram II). What we now wish to maximise is the distance between TP and UC ; this will occur where the two lines are parallel, that is, where marginal user cost = marginal net revenue. This is the optimum output because, at any smaller output, a small increase will add more to current net revenue than will be sacrificed in capital value. It is thus worth while to add to output until the increase in net revenue is just offset by an equal fall in capital value (the present value of possible yields from this equipment). It should be noted at once that current net revenue is equal to the whole distance w_1W , and user cost w_1v_1 is not a deduction from net revenue. A useful way of looking at this is that if he maximises the distance Wv_1 each period, the entrepreneur will succeed in getting the largest possible sum of Ww_1 s in the long run. In other words, if each period he chooses the output w_1 , where the net revenue is somewhat smaller than it would be at x_1 , he will in all periods achieve the largest possible total of net revenues.

In Diagram II we have assumed that the user-cost curve slopes upward, so that the optimum output w_1 will be less than that which yields the maximum current revenue x_1 . This, it seems, is the typical case. However, it is not impossible to have the opposite situation. If we consider a forest standing in need of pruning and thinning, we see that additional current output will not only yield a current revenue, but will also add to future returns, so that the greater the current rate of use, the greater also will be future yields. That is, the user-cost curve slopes downward, and w_1 will therefore be greater than x_1 . The whole UC curve might indeed be negative, but this is not relevant: it is the slope of UC , the marginal user cost, which determines the present rate of output. (See UC in Diagram III. UC' will be discussed below.)

The equality of the two margins determines the current rate of output; this is a marginal condition. There is also a total condition: at any profitable output total user cost must be less than total net revenue. If this is not so, current use involves a greater sacrifice of future possible revenues than its current yield, and is therefore unprofitable. For example, since new wine

brings in a smaller revenue than its expected yields on maturity, sale should be delayed; regardless of *marginal* user cost, total user cost exceeds present yield.¹

In the following part we shall ask whether user costs of current output can be more simply calculated than the complicated methods of determining current output which have been



suggested elsewhere.² This section will be, in fact, an excursus from our main thread, the effect of user cost on current decisions. We shall return to that subject in Part IV.³

III

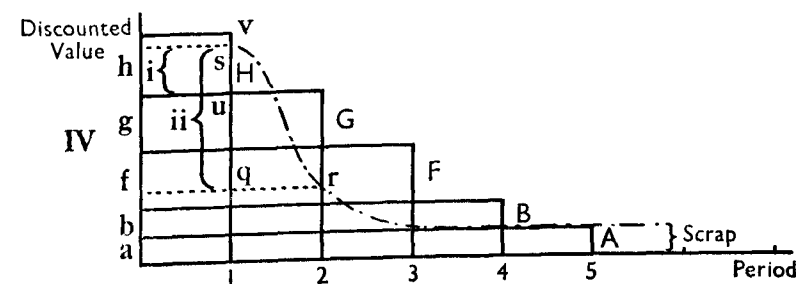
The user cost of a certain current rate of output can most easily be ascertained when a simplified model of a firm's plans over time is constructed. Assume that an enterprise can vary its output each year between zero and some rate so great that it will destroy the plant. A mine, for example, can choose a rate between closing down and attempting to exhaust the mineral within a single period. The manager, as periods go by, en-

¹ When we are considering only the marginal condition, there is no need for the distinction between avoidable and unavoidable outlay made at the beginning of this part. Since unavoidable outlay will not vary with output, marginal net revenue will be the same regardless of the meaning of "outlay." However, when we consider the total condition, net revenue may fall short of total user cost when it is reduced by unavoidable outlay, yet exceed user cost if only current outlay is considered. As explained earlier, the relevant definition of current outlay neglects costs incurred in acquiring and paying for those assets the user cost of which is being ascertained.

² By S. v. Ciriacy-Wantrup, "Taxation and Conservation of Resources," *Quarterly Journal of Economics*, Vol. 58, 1944, p. 157, Harold Hotelling, "The Economics of Exhaustible Resources," *Journal of Political Economy*, Vol. 39, 1931, pp. 137-75, and others.

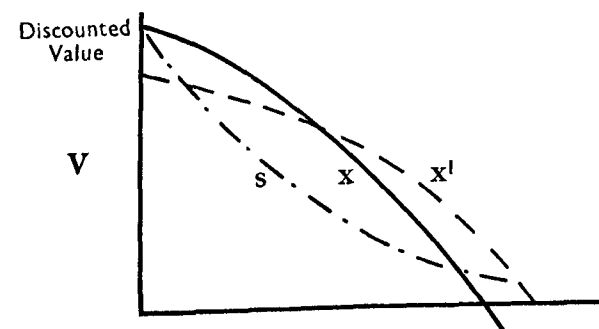
³ The influence of user cost on output is explicitly discussed by A. C. Neal, "Marginal Cost and Dynamic Equilibrium of the Firm," *Journal of Political Economy*, Vol. 50, 1942, p. 45.

counters varying outlay and revenue situations, revises his own expectations, adopts new methods. Some of these changes occur independently, others depend on his own earlier actions. The latter, the consequences of his own actions, interest us particularly,



for user cost is the opportunity lost when another decision is carried through.

A suitably simple model of a planning enterprise has been given us by Irving Fisher in *The Nature of Capital and Income*. Diagram IV is an adaptation of his illustrative method. Here the enterprise expects to receive items of net revenue (current revenue less current outlay) at the end of each period, numbered



1 to 5. By assumption, the present value of these revenues, which is measured on the vertical axis, is the largest which can be obtained from owning this asset. Each discounted net revenue is the largest obtainable in that period *given* the discounted net revenues of the preceding and subsequent periods. There is no revenue from the 6th period—to operate then would yield a reduction in the previous net revenues greater than the 6th net revenue. Each magnitude is measured by the vertical line in the period, and is carried back along the horizontal lines to the present. The discounted scrap value of the machine in period 5

is equal to A , which is equal to a , where "scrap" merely suggests net revenue from selling the asset into another use.

An entrepreneur with a plan similar to this, who is about to enter period 1, will wish to know how much he should produce during the period, having an eye to the effect of this decision on the net revenue of other periods, and to the ultimate effect on the present value of his enterprise. As we saw in the preceding part he needs to know his user costs in order to make a correct decision. The author best known for his answer to this implied question is Professor W. A. Lewis,¹ in the footnote to p. 10 of *Overhead Costs*, which we summarise here.

There are three user costs of using equipment in period 1:

- (i) The difference between the sum of its remaining expected yields and its value for scrap instead of use in period 1.
- (ii) The difference between its scrap value before use and that next period if it were used in period 1.
- (iii) The yield of the extra future year for which the equipment is available if it is neither used nor scrapped in period 1.

These three user costs can be most clearly illustrated on our diagram, for arithmetical examples appear too much to depend upon the values arbitrarily chosen. Even here, however, we have sharply limited the entrepreneur's freedom, for there is no question of varying the rate of output in any period—it is an all-or-nothing business each time. Marginal user costs, therefore, are not involved—total user cost is either absolutely larger or absolutely smaller than current net revenue.

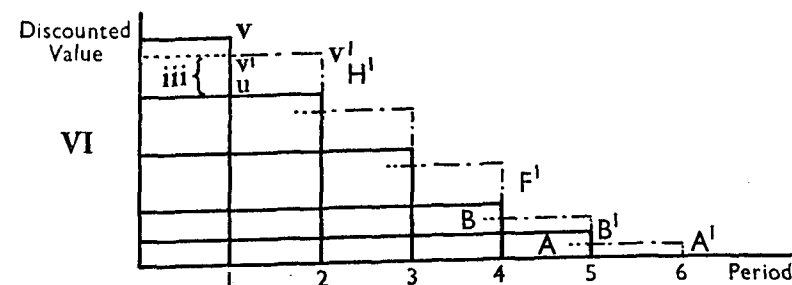
(i) User cost (i), for example, of producing in period 1 (that is, the best alternative net revenue to $H (= h)$) is the difference between what it will be worth after H has been earned and what it would have earned if it had been scrapped before use H was undertaken. The present value of the five planned yields (in this use) is v . The dotted line shows the (discounted) scrap value of the machine if sold in the period *instead* of being turned to the present use. s , then, is the scrap value now. User cost (i), therefore, is su , the difference between the scrap value s , and u , the present value in this use *after* use in period 1. More generally, if user cost (i) is greater than the net revenue, the dotted line will lie *above* $A, B, \dots$ or H .

(ii) User cost (ii) is the difference between the values of the

¹ W. A. Lewis, *Overhead Costs*, London, Allen & Unwin, 1949, p. 10 n.

asset this year and next year, in the scrap market. Next year's net price will be r , ($= q$), and this year it is s , so the user cost (ii) is sq . This is, in our diagram, much greater than H , the net revenue to be expected from use this year, for the "time pattern of yields in outside uses" is different from the time pattern of uses here, and the asset should be used elsewhere this year and returned to use here next year¹ (assuming physical wear and tear in each use to be the same). If outside wear were of severity equal to this one's, the dotted line would lie a constant distance below the solid one.

(iii) User costs (i) and (ii) are probably the most important to operators of equipment which has an outside use and is in danger of obsolescence. Constantly aware that time is reducing the demand for their equipment's services, they will seek the largest



revenue before fashion or technique make it unprofitable. User cost (iii), however, applies to assets the demand for which is less ephemeral, and the yields of which change in response to changing cost conditions rather than falling demand, such as durable goods and natural resources.

In Diagram VI, the entrepreneur contemplates postponing the first use, and letting the asset "rest" in period 1. All revenues, $B, C, \dots H$ are thus postponed one period, and scrap value A is not received until period 6. These yields are now called $B', C', \dots H'$, and A' is the postponed scrap value. v' is the new sum of discounted values. User cost (iii) is B' , rather less than B . Even if it were as great as B , it, and all other yields, suffers a greater time discount. Perhaps a better measure is $v'u$. It will almost certainly be less than vu , the planned yield, if time depreciation and obsolescence reduced successive net revenues.²

¹ Lewis, p. 10.

² It might be thought that there is a fourth type, not given by Lewis. For example, we might consider the difference between the scrap value obtainable next period after a period's use and the scrap value that can be obtained next

The assumptions necessary, in order that we may conclude that, if the user cost so calculated exceeds the prospective net revenue there will be a change of plan, are that the entrepreneur attempts to maximise the present value of his enterprise, that his rate of discount coincides with that in the market, that the scrap value applies to both buying and selling, that expectations are held with sufficient confidence for action and that transfer costs are included in the other costs implicit in the net revenues.¹

We have not, however, full information needed for carrying out the method of deciding upon current output described in Part II. There we saw that current output would be at the rate where: (a) user cost was less than current net revenue, and (b) marginal user cost equalled marginal net revenue. There are two obstacles to using this method.

(i) The user cost of any period is calculated upon the assumption that the rate of output in other periods (both those when use will take place and those when it will not) is given. Thus we have implied, so far in the analysis, that current output is determined, in part, by current user cost. This, in turn, reflects the rate of output in some other period. But that rate of output is determined in part by its marginal current costs. These marginal current costs depend on the previous rate of use the equipment has experienced, that is, on the output of the earlier period. There is thus a circular dependence, for each subsequent rate of output, which helps to determine to-day's output, is itself influenced by to-day's decision. User cost thus cannot determine current rates of output and current prices until the outputs of *all* the subsequent periods have also been decided, all as a single problem. Such problems amount to finding the maximum integral of discounted revenues over time, and can be solved by the calculus of variations, as in Ramsey's "Mathematical Theory of Saving."² User cost is, therefore, a tool of partial economic analysis; we must assume that everything else has been decided upon and will not

period after a period's idleness. The former of these is τ (Diagram IV), the scrap value after use in period 1, and the latter is s (scrap value if no production took place in that period and if outside circumstances do not change within the period). This user cost will then reduce to Lewis's user cost (ii). I am indebted to Mr. Solomons for conversation on this point.

¹ It is possible to replace these discontinuous lines by continuous curves (Diagram IV). $x_{(t)}$ represents the stepped line $HGF \dots A$ of Diagram IV, and $s_{(t)}$ is the scrap-value curve. The stepped postponed-yield-line $H'G'F' \dots A'$ of Diagram VI becomes $x'_{(t)}$. Then the user cost of producing in period (t) is the greatest of the differences between (i) $s_{(t)}$ and $x_{(t+1)}$, (ii) $s_{(t)}$ and $s_{(t+1)}$ and (iii) $x_{(t)}$ and $x_{(t+1)}$.

² ECONOMIC JOURNAL, 1928, pp. 592 ff.

change as we make our decision. While the entrepreneur can, at a given date, take the past as given, he must make plans now for subsequent periods, so that, if matters work out as expected, each later period will have bequeathed to it equipment and so on suitable for a maximum total revenue over the entire sequence of periods. Therefore the alternatives both after and before each subsequent period must be considered in planning the whole period.

In many contexts this is clearly too much to ask, and user cost is therefore not a good tool; for it will often occur that subsequent decisions about output depend so much upon previous ones that contrary assumptions will lead to wrong answers. Yet there are many cases where the assumption that future rates of output are given independently of present decisions is approximately correct.

For example, it could be correct, when conditions exist similar to "imperfections" in market structure: when factors are immobile, when the output is perishable and so cannot be stored, when it is desired to widen the market by offering steady supplies, when suppliers of transport, power and so on require assurances of steady demand before service begins, or when the operational life will be short because of obsolescence, or other factors of time depreciation. Those exploiting natural resources find that labour is hard to attract to their sites, so that they have little expectation of future alterations of the rate of output for fear of losing hard-won staff, or inability to staff sudden increases. It is thus reasonable to suppose that output will continue smoothly through subsequent periods: choices are not made about postponing output (user cost (iii) is rarely relevant), but about scrapping pieces of equipment, or making relatively small changes in the rate of output. In such cases user cost, measured on the assumption of continuing future outputs, may give good results.

(ii) The second obstacle is that in Part II we used not only the level of total user cost, but also marginal user cost, which Lewis's three measures cannot supply.¹ What is needed is a method of discovering the total user cost of each rate of output in that period. In principle, the method would be the same as before: find the n best net revenues available from the equipment for each rate of current output, and find how the sum of their present

¹ The Lutz's chapter on cost accounting has a marginal user cost curve, but it is described as though it were a fixed cost for the period: "the opportunity cost of using the machine in the operational period" (*Theory of Investment of the Firm*, p. 63 n.). See also Weintraub, *Price Theory*, pp. 378 ff.

values varies as this rate is changed. Period analysis may well prove to be a difficulty here, since date and rate of output change at the same time, but it is needed in order to find the prices of output and factors at the times when each fraction of the total output is completed. This approach is particularly important in industries when possible variations in rate of output greatly influence future prices and expenses. For example, excessive present timber production may flood the market and cause future losses if the demand is inelastic, while costs may rise if production has damaged forest capital. The demand consideration applied only when the producer has an ascertainable share of the market; the cost consideration only when property ownership is so arranged that present abstinence benefits the abstainer (as opposed to the contrary expectation in oil-fields and whaling). The mathematical calculation of the marginal user cost thus appears very difficult: nevertheless, there is no doubt that user costs differ between high and low rates within a given period.

In Part II we discussed negative marginal user cost: positive user cost which diminishes as current output rises. This is *not* negative user cost, and it is as important here as elsewhere to distinguish marginal from total cost. Negative user cost would imply that a certain rate of output now adds to the value of the equipment.¹ If this should occur, the current output will in any case be where marginal user cost equals marginal current net revenue, and the negative user cost is the discounted value of future net returns. The Keynesian consumer adds this negative user cost to his income. In other words, such a value of user cost is actually investment, cloaked as current output expenditure.

This case,² where output in a period is close to zero while user cost falls below zero, is interesting from the point of view of completing a set of Keynesian definitions, but is irrelevant in our own context.

IV

We have, so far, assumed that change in expected net yields was due to previous use (though in our example, service life was

¹ I.e., if this production did not take place, the best possible alternative use or rate of use would yield a loss. What does this mean, in the three user-cost categories? If user costs (i) and (ii) are negative, the scrap value before use must be less than the highest value *after* use. If user cost (iii) is negative, the $(n + 1)$ th yield must be a loss. All three user costs must, of course, be negative before *the* user cost is. It is not difficult to imagine circumstances where either (iii) is negative, or (i) or (ii) is, but all three at the same time would be unusual.

² Cf. Footnote to p. 370 above.

given by obsolescence). This need not be the case. Values of assets also change with time, both predictably, *e.g.*, obsolescence and deterioration of equipment, or growth and depletion of natural resources, and unpredictably, *e.g.*, changes in factor and product markets due to conjunctural changes, or changes connected with this product or its substitutes.

Thus, even if output be zero, so that user costs are zero, the present value of possible net revenues may diminish from period to period. It would be tempting, paradoxically, to christen this diminution "fixed user costs," as opposed to the "prime user costs" so far discussed. Keynes, however, called them *supplementary costs* (not at all the same as Marshall's supplementary costs); other suggestions have been resting costs (by analogy with the resting account of Social Accountancy), time-depreciation and time-appreciation, and Mr. Solomons's "retainer costs." The value of the asset falls as a result not of use but of retaining it over time. Whatever we call them, it should be noted that, while they do not vary with output, their value can, like user costs proper, be at any time negative, zero or positive, and have the additional character of changing predictably or unpredictably with changes in knowledge and expectations.

Thus, for every type of equipment, there will be a prime user cost and a retainer cost of output, the first a function of the rate of output, and the second of the age of the asset. These two costs may be added together to give a curve measuring the fall in present value for each rate of output. When the rate of change of this total function is equal to the rate of change of current net revenue, it will pay to stop increasing the rate of output, for any increase in net revenue would be more than offset by a consequent decrease in present value of the enterprise. But, since retainer costs are, by definition, constant for all current rates of output, the rate of change of the total function will be the rate of change of user cost alone. This is another way of stating the proposition that when retainer costs are of the nature of time-depreciation of fixed assets, such depreciation does not enter into determination of output, or of price.¹

¹ The distinction between time-depreciation and use-depreciation has been deftly made by J. S. Bain, in "Depression Pricing and the Depreciation Function," *Quarterly Journal of Economics*, Vol. 51, 1937, p. 204. He makes the point that they cannot be added—which is a different point to ours, that they *should* not be added.

Bain's depreciation function depends on two variables, the passage of time and the use of the equipment. The partial functions with respect to each variable are the time-depreciation function and the use-depreciation function.

It might be thought that if the total function (user cost *plus* retainer cost) were greater than the net revenue, though user cost alone were not, the above conclusion would not hold. But this cannot be so. For if there were some other alternative to producing (for example, if it would pay to wait, retaining the asset unused), the user cost by itself would be greater than the current net revenue. An enterprise in this situation is in the helpless position of owning property rapidly falling in value; it can only choose that rate of output which minimises losses by continually maximising the (falling-over-time) present value of the enterprise.¹ The ownership of capital may thus be a continuing cost, as time proceeds, at any rate of use, and even when there is no use. For example, a rent-controlled residence will have a zero user cost to the owner, since every other tenant will pay the same rent. Yet, over time, the house will fall in value at a greater rate than rents are accrued. Again, a young forest may have a *negative* user cost over some rates of output (for thinning and pruning) and at the same time a *negative* retainer cost suggesting that there is also an annual increase in value due to natural growth.

One possible misunderstanding concerns obsolescent assets. It might be thought that if value were falling, due, for example, to a change in fashion, it would pay to use the asset as quickly as possible, and that retainer costs, showing this rate of time-depreciation, should therefore enter into the determination of current output. The answer to this is that output will be at the rate determined by marginal current outlay and marginal revenue,

They cannot, of course, be added; they must be taken simultaneously, with the correct value for each variable.

The difficulties with this way of looking at depreciation are that *marginal* user cost becomes obscured by total depreciation, it is difficult to discuss *negative* user cost, and it treats user cost as an independent function of use, whereas our own treatment regards user cost as in no sense an independent function, but one which depends upon the age of the machinery, the outside market for it and so on.

Bain's treatment attaches special significance to that output where user cost first exceeds retainer cost (to use our vocabulary) which he calls the "critical output." As long as user cost is less than retainer costs, it has no effect on current output. This is probably correct in Bain's system. But the important thing is that the loss of value due to use can have an effect on output no matter how small it is, for it is *marginal* user cost which is important, and any system of definitions which obscures this relationship is capable of improvement. In fact, it is difficult to see that the value of retainer cost, no matter how defined, can have any effect on output at all, unless the passage of time increases or decreases the user cost—it is through user cost that it makes its effect. It therefore follows that user cost and retainer cost, defined to exclude one another, are more useful tools than an all-enveloping depreciation function.

¹ In Diagram III the curve *UC'* might be a sum of user cost curve *UC* and a retainer cost *R*.

having regard to outside uses. The fact that the asset is soon to wither cannot increase current net revenues in any period. In terms of user cost, Lewis has shown that user cost (iii) is that net revenue possible in the $(n + 1)$ th use—the first use, say, after the date of becoming obsolete. Then if there are no outside opportunities, and this net revenue is very small, it is likely that current user costs will fall as the rate of output increases, which, since marginal user cost is negative, will indeed tend to increase the rate of current output. Thus user cost, not retainer cost, influences the rate of use of an obsolescent asset.¹

Another possible misunderstanding concerns the fourth user cost suggested in Part III, the difference between the outside price obtainable next year after a year's use and the price that can be obtained next year after a year's idleness. We showed there in a footnote that this is a special case of the second user cost (difference between scrap values when used for one period) special in its allowance for passage of time. If, of course, external circumstances during that time were to alter, then the user cost would only be what the entrepreneur reckoned it to be on the basis of expected values. If these were changing regularly over the year, then, as shown above, the different values available after a lapse of time would show up *either* in user cost (iii) or, if there were a continual increase in value, in retainer cost.

As has been several times suggested, the present user-cost function is a subjective concept, depending on individual expectations of prices, sales, costs and production functions. Its statistical measurement, therefore, is unlikely to produce convincing results. We can say, however, that managers and employees may have a vested interest in finding that marginal user cost is rising over current rates of output. Professor Paish has published his suspicions that this is so in the gold-mining industry of South Africa, and Mr. Bauer that it was also true of the rubber-estate managers of Malaya.² One cannot resist suspecting that public employees charged with fighting soil erosion, forest destruction and fisheries' depletion are also tempted to over-estimate

¹ Retainer costs of some durable machinery, the type which is often "written off" by its owners years before it is scrapped, are often very small. This permanence does not cause a slow rate of use, since the rate is determined only by current marginal net revenue and marginal user costs. In the same way, rapid "writing off" of retainer costs should not lead to accelerated use.

² Cf. F. W. Paish, "Causes of Changes in Gold Supply," *Economica*, Vol. 5, 1938, p. 396, and P. T. Bauer, "Notes on Costs," *Economica*, Vol. 12, 1945, pp. 90 ff. See also A. E. Bunce, *Economics of Soil Conservation*, 1945, Chaps. 6 and 7, for a study of the costs of reducing the fertility and destroying the structure of the soil.

the marginal user costs of high rates of exploitation. High user costs might be attributed also by producers, whose high production was having the effect of low prices, to high output, when it is really desired to restrict production and sales.¹ User cost seems a useful method of analysing these influences. The conflict between social time preference and social user costs may also prove a workable method of analysing the public attitude to the maintenance of social capital.

But, as mentioned at the beginning of this paper, the obscurity imparted to future values by changing business and technical conditions makes user cost too fine a tool for the entrepreneur. Such fine calculation cannot be used when data are based on hopes and guesses. The economist, however, applying user cost to typical, or aggregate, situations may find it an instrument well adapted to balancing actual and alternative net advantages. This study was originally undertaken as part of research into the conservation of natural resources. Here it may be found that the conflict between "social time preference" and "social user costs" in the exploitation of natural resources is the best unifying view of the different ideas on forest destruction, the coal question and the international whaling disputes.

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¹ The user cost of output with particular reference to expected changes in demand is discussed by W. R. Pabst, Jr., "Unstable Conditions of Competition and Monopoly in Exhaustible Resource Industries," *Journal of Political Economy* Vol. 50, 1942, p. 739

WAGE CLAIMS AND THE PACE OF INFLATION (1948-51)¹

I

THE theory of income determination can be applied quite readily to an inflationary situation as well as to one of under-employment. By making a very simple assumption, viz., that the rate of change in money income is proportional to the rate of change in prices, it is possible to build a useful model of the inflationary process. However, the simple income equations of Keynesian analysis only manifest one causal factor in this process. The general level of prices, which increases as money incomes increases beyond the point where aggregate demand exceeds aggregate supply at full-employment output, is a resultant of the process of income determination. The model becomes much more complicated if the price level is itself a governing variable,² as indeed it is when claims for wage increases are based on changes in that level. In some models,³ in view of the powerful position of trade unions in post-war economies and the willingness of employers to grant wage increases in order to hold their labour force, it is assumed that all wage claims are met. If this is so, the stage is set for a "wage-price" spiral. Increases in wages will lead to increases in the level of aggregate consumption, and this, given no changes in the level of output, will increase the general level of prices, which in turn will engender further wage claims; and so on.

Attempts have been made to refine the static theory of income determination by the use of difference equations in which time-lags have to be assumed. The "Robertsonian lag" is a well-known instance. Thus fluctuations in the level of income (and by implication of output and employment) are mitigated by the introduction of a spending lag, so that consumption expenditure depends on income received in past "periods." The calculation of the length of these various lags is thus a useful concomitant

¹ We are indebted to Mr. C. Archibald and latterly to Mr. P. Browning of the Economics Research Division, London School of Economics, for assistance in the compilation of the statistics in this paper. Part II of this article is based on an earlier draft which appeared in the *Manchester Guardian*, May 15, 1952.

² For a model of this nature, see G. A. Bishop, "A Note on Overinvestment Theory of the Cycle" (*American Economic Review*, March 1951).

³ Notably that of Bent Hansen in his *Studies in the Theory of Inflation* (George Allen and Unwin, 1951), Chapter 2.

to the development of theoretical models, as is found, for instance, in the work of Metzler.¹

A model of the inflationary process would thus be incomplete without some consideration of the pace at which this process developed; and the rate of increase in prices is intimately related to the time taken for one complete convulsion of the wage-price spiral. If *all* money incomes varied directly and immediately with changes in the index number of retail prices, and if all businesses passed on immediately to consumers the full increases in their money costs, then a small adverse movement, of say, the terms of trade could lead to the rapid and complete disappearance of the value of the pound. The longer is the time taken for a cost-of-living increase to be reflected in higher money wages, and the longer is the time taken for the concomitant increase in costs to be passed on to consumers in higher prices, the more gently will prices rise, and conversely.

Metzler, in examining the state of the economy in terms of income movements, is led to consider three lags—the “Robertsonian” or income-spending lag which we have already mentioned, the “Lundberg” lag or lag of output behind sales and lastly the lag of income behind the increases in output. In considering the state of the economy in inflationary conditions, we are more interested in price movements, and it is convenient to consider two lags—that between increases in prices and the wage increases they engender and that between wage increases and the ensuing price increases. These roughly correspond to Metzler’s first and third lags, for in inflationary conditions, in the short run at least, output is relatively fixed (and thus his second lag is zero). However, so far as his third lag is concerned, we are more interested, of course, in wage changes rather than profit and dividend changes.

In this article we shall attempt to provide a rough measure of the length of the first of these lags which are of interest in the inflationary model, *i.e.*, the lag between price increases and wage increases. We shall study the conditions in the British economy from 1948 to 1951.

We shall assume that claims for increased wages are induced only by actual, realised price changes, and not by expectations of price changes. This assumption is not an unreasonable one for the period 1948–51, but recent wage claims suggest that it would be less valid at the present time.

¹ Lloyd A. Metzler, “Three lags in the Circular Flow of Income” (*Income, Employment and Public Policy, Essays in Honor of Alvin Hansen*, W. W. Norton and Co. Inc., New York, 1948).

II

The length of time which elapses between an increase in prices and the resultant wage increases has four constituents, each of which is affected by different influences. The first constituent is the time which elapses between an increase in the prices being charged in the shops, and the increase in the Interim Index of Retail Prices, for the statements made by trade-union officials suggest that it is the behaviour of this Index which determines the timing and magnitude of wage claims. This lag can vary between one month and two months: the index number for April, for example, is calculated from data collected in the middle of April, and is published about the middle of the following month. Any increase in prices after the data are collected will not be reflected in the index number until the computation for May, the results of which will only appear in the middle of June.

The second constituent is the time-lag between an increase in the Interim Index and the presentation of claims for increased wages. The pronouncements of trade unionists are almost unanimous in giving cost-of-living increases as the reason for claims for higher wages. Nevertheless, an appreciable increase in the Index, which is neither seasonal nor accidental, seems to be required to generate a claim for increased wages: an examination of the rise in the Index between a wage settlement and the presentation of the next wage claim for six major unions suggests that since the end of the war, it required on the average a 5-point rise to generate a new claim. A detailed study, however, of the number of claims presented each month between January 1948 and September 1951 shows no significant lagged or unlagged correlation either with the actual changes or with the rate of change in the Interim Index during the previous months. But this does not sever the nexus between cost-of-living changes and the timing of wage demands, for institutional factors are here of prime importance. In some cases the agitation for higher wages begins in the local lodges of the union; in others the claim for an increase begins with the union executive—and the time taken for the claim to be presented varies accordingly. Many of the major unions hold their annual conferences in May and June, and the determination to press for wage increases is then recognised and formally approved. The actual claim is usually presented in the following autumn or winter. The available information shows a seasonal concentration of claims in September, October and November each year, with less important concentrations in March and June. Finally, the willing-

ness of the unions to press for higher wages may have been influenced by the White Paper of February 1948, which set out the necessity for restraint. Certainly, the end of the "wage-freeze" can be clearly seen in the sharp increase in the number of claims presented in September and October 1950. The limits to the time which may elapse between an increase in the Interim Index and the presentation of claims for higher wages are, therefore, nebulous.

Once a claim for an increase in wages has been presented, there follow the negotiations with employers. The varying importance of different claims, and the different procedures which the different methods of collective bargaining involve, make it well-nigh impossible to discover any typical period which must elapse between the first presentation of a claim and the date of its final settlement. A study of a sample of 430 claims for increases in wages between the beginning of 1948 and the end of September 1951, made by workers in all industrial groupings, shows that in no instance did more than twelve months elapse before their settlement. The length of this lag for individual claims shows no significant correlation either with the magnitude of the wage increase that is asked for or with the numbers of workers on whose behalf the claim is made. The unweighted average lag for all claims over the whole of this period was about four months. The average time-lag for claims made in 1948 was rather over four months, for claims made in 1949 it was about four and a half months; in the first half of 1950 it was slightly over four months, but had fallen to about three months in the latter half of that year, at which level it remained during the first half of 1951. The reduction in the average towards the end of the period may reflect the end of the policy of wage restraint. It may be, however, that the changing relation between what the workers asked for and what they finally accepted is, in part, explained by the effects of this "policy." In 1948 the workers received on the average about one-half of what they claimed; in 1949 this had fallen to about 40%. During 1950 and the first nine months of 1951, however, the settlements were, on the average, 70% of claims. These figures mask significant variations between different industrial groupings—some examples are appended in the table on the opposite page.

The fourth constituent is the time which elapses between an agreement to increase wages and the date from which the increase becomes effective. The increased wage is seldom made retrospective for more than two months, nor do workers ever have to

The Lag between the Presentation and Settlement of Wage-claims in Selected Industrial Groupings

Industry.	1948.			1949.			1950.			1951.			Average lag for whole period.	Settle-ment as % of claim for whole period.
	Average lag, months.		Settle-ment as % of claim.											
	1st 6 mths.	2nd 6 mths.												
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	A	B
Chemicals, brick, pottery and glass . .	2.0	3.0	38	3.0	3½	53	2.0	3.0	55	3.0	1.0	55	2.7	50
Engineering, ship-building . .	7.7	5.6	47	4.5	6.1	52	10.5	2.0	80	2.4	—	59	5.5	52
Mining and quarrying . .	6.0	4.5	58	4.0	6.3	27	4.7	2.2	43	2.0	1.0	68	3.9	46
National and local government . .	4.0	7.3	36	6.4	9.1	37	6.6	5.3	82	3.0	1.0	92	5.9	64
Textiles . .	2.6	2.0	52	4.8	5.0	36	3.6	2.0	55	1.6	—	55	3.3	46
All industries . .	4.4	4.0	52	3.9	6.1	37	4.2	3.0	68	3.0	1.0	67	3.9	55

1. All claims are national claims, in the sense that they were made on behalf of all workers with a particular skill or doing a particular job. The number of workers affected varies, of course, widely from one claim to another.

2. All claims were such as to result in an increase in the effective wage-rate, if granted. Claims for a shortening of the working-week, or for an increase in holidays, without any change in remuneration, are therefore included.

wait much more than two months after a settlement for the increase to take effect. It seems not unreasonable to conclude that this time-lag is, on the average, zero.

Since the beginning of 1948 until September last year, it would seem, therefore, that the average time which has elapsed before an increase in the prices paid for the major goods of everyday consumption was at least partially reflected in an increase in the wages being paid to workers was about six to seven months plus the unknown lag between the rise in the Index and the presentation of claims. The most important single determinant of the length of this lag was probably trade-union organisation, policy and procedure. The existence of a lag in wage-adjustment means that wage-earners are accepting for a time some reduction in their real incomes and to that extent contributing to a slowing down in the pace of inflation. The equivalent lag for those who earn salaries or who subsist on pensions is, of course, much longer.

III

So far we have considered only claims presented through the ordinary channels of collective bargaining. But we have still to consider industries in which wage claims are based on the cost-of-living index, i.e., where sliding-scale agreements are in force. These agreements cover a wide variety of industries, notably iron

and steel trades, building and contracting, textiles and more recently printing, and cover some 2 million workers (September 1951 figure).

At first glance it might be thought that where sliding-scale agreements are in force the lag would be effectively reduced to zero, and that the pace of inflation would be accelerated in proportion to the number of workers affected. In fact, agreements of this sort differ appreciably. The differences depend on two factors: (a) the number of points the Interim Index of Retail Prices must rise before wages are reviewed at all; and (b) the frequency with which reviews of wages take place. We can thus classify sliding-scale agreements according to the number of points variation in the Index and the periodicity of review, and this will give some preliminary indication of the effect of these two factors on the speed of wage-adjustment.

Classification of Sliding Scale Agreements

Points variation.	Automatic.	Alternate months.	Quarterly review.	Four-monthly review.	Six-monthly review.	Annual review.	Total.
1	8	—	4	1	2	—	15
1 or 2	—	—	1	—	—	—	1
2	1	—	1	—	—	—	2
2 or 3	1	—	—	—	—	—	1
3	1	—	6	—	—	3	10
3½	—	—	—	—	1	—	1
4	3	1	—	—	—	—	4
5	5	—	2	—	—	1	8
6	1	—	1	—	—	—	2
8	1	—	—	—	—	—	1
10	2	—	—	—	—	—	2
	23	1	15	1	3	4	47

This table is based on a sample of forty-seven such agreements in force in September 1951. It is observed that in half the sample automatic adjustment takes place, although only in eight cases is the adjustment made for a 1-point variation. In two-thirds of the remainder of agreements, the revision of wage-rates is subject to quarterly review, and there are one or two important cases where annual review is made. An example of the first case is provided by the district agreements in force in the iron and steel trades, in which automatic adjustments are made in the shift rates of production workers and the weekly rates of maintenance craftsmen for a 1-point variation in the index. In furniture and bedding manufacture wages are reviewed quarterly and revised following a 3-point variation in the index. The most important

example of the third case is that of building. Under an agreement made in January 1948 an annual review adjusts the bonus in accordance with the average figure of the Index over the previous twelve months subject to a 3-point variation in the Index.

We have noted that the normal lag is composed of four components. In the case of sliding-scale agreements, the number of lags is reduced to three. The first lag is the same—the time interval between the change in the Index and the publication of the change. The second lag consists of the time interval between the claim and settlement, for we assume that the claim is lodged as soon as the Index goes up by the crucial number of points, and so there is automatic adjustment. This time-lag is positive only when there is periodic review. The third lag is the time interval between the “settlement” and payment. Payment is normally made from the month following the publication of the Index, sometimes the month after. For instance, in the case of printing, where reviews are made bi-annually, reviews take place on the May and November figures in the Index, which are published in June and December, and wage-changes take effect on the first pay day in July or January.

The total time-lag between an increase in prices and the adjustment of wages in sliding-scale agreements is thus subject to considerable variation. The span of variation is from one month where there are 1-point variations and automatic reviews to thirteen months where there are annual reviews.

IV

So far, nothing has been said about the length of the lag between increases in wages or in other cost elements and consequent increases in the prices of final goods. In many industries the length of this lag is affected by price-control requirements. It may also be affected by accounting convention: if prices are commonly calculated on an original cost basis, then increases in wages and raw materials will result in higher prices only when the goods being sold actually embody the higher-priced service or material. It is hoped, however, to deal with this lag more fully in a later study.

V

It may be presumed that the data we have assembled and interpreted are of interest as economic history, as they relate to our first experience of wages policy in conditions of over-full employment. However, one might perhaps go farther and suggest that

the presence of a wages lag and some indication of its length is of great importance for any forecast of economic change.

Until comparatively recently the calculations of national income and expenditure in the Economic Surveys for a particular year were made on the basis of prices prevailing at the end of the previous year. It is one thing to plan on the basis of constant prices on the assumption that it is possible to remove inflationary pressure by, say, tax adjustments. It is quite another thing to portray a situation in national accounts where assumptions have to be made about price changes which will occur independently of government policy as, for example, import prices and wages and salaries movements. A model based on variable factor prices must therefore begin with some assumptions about the changes on the income side rather than on the expenditure side in order to obtain the relevant figure for gross national product, and these changes are associated with forecasts of import prices, wages and salaries and profits.

It is known that forecasts of probable movements of wages are now made,¹ and it is to be presumed that something equivalent to the type of analysis we have made would be useful. Thus some idea of likely changes might be obtained from data of negotiations for wage-changes impending and the previous results of similar negotiations both in respect of the delay in completion and the success of the wage bargain. Of course, the lag is not by any means synchronised with the planning period, and implied price increases resulting from the pressure of wage and salary increases on available output may be difficult to fix in future time, so that the forecast both of automatic wage-changes based on the cost-of-living index and the precise timing of the next round of claims within the planning period may present insuperable difficulties. These difficulties are no more formidable than those found in forecasting, say, capital investment, and if we must have forecasts, it is as well that we know what procedure to adopt. Thus the type of investigation which we have conducted may be useful as a framework for discussion of future wage-changes so that at least we are aware of what assumptions have to be made in forecasts of this sort.

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¹ See, for instance, E. F. Jackson's article "The Recent Use of Social Accounting in the United Kingdom" (*Income and Wealth*, Series I, p. 157).

REVIEWS

The British Economy 1945-1950. Edited by G. D. N. WORSWICK and P. H. ADY. (Oxford: Clarendon Press, 1952. Pp. viii + 622. 35s.)

MR. WORSWICK and Miss Ady, with the various Oxford colleagues whom they have recruited as contributors, have found a first-rate subject crying out for systematic study. If one is to judge from the critics, pretty well everything has gone wrong from 1945 onwards. What has in fact happened? What would a group of all-intelligent and all-powerful economists have done, had they found themselves obliged to re-live those years and make our economic policy afresh, with the advantage of all the added experience we now have?

It would be wrong to give the impression that this book is solely concerned with attempts to appraise and pass judgment. Indeed, it would seem clear that the first purpose of the authors has been to present a clear and, as far as possible, a dispassionate record of what did in fact happen. And even where a reader may find himself in possible disagreement with the author of a chapter, he will almost always find that he has been given the essential material to justify and support his agreement or disagreement. As a record and as a text-book it will be immensely valuable.

But having said that, I hope I may be forgiven if in a review I concentrate on the lessons and judgments. The first of them, I would suggest, emerges from Mr. Worswick's Introduction and the study by Mr. Dudley Seers of National Income, Production and Consumption which immediately follows it. In contrast to the tremendous oscillations of the inter-war years and to the years before 1914, the period since 1946 has been one of unbroken but erratic progress. Even 1947 showed increases in all the major indicators of economic change: personal expenditure at constant prices rose by 3% above that of 1946. And similarly 1949, so regarded, was a year of hesitation and not of retrogression. It is unfortunate that the authors set themselves the date of December 1950 as the end of the period to be covered, for an occasional phrase shows an unwarranted complacency which later events would have modified. Nevertheless, Mr. Worswick reminds us that the five years here recorded saw an expansion of 40% in industrial production and 77% in exports. At the same time, as Mr. Britton shows in the chapter on Agriculture, the net output

of agriculture, at constant prices, was raised by 1950-51 to 46% above the pre-war level.

Those were very considerable achievements, and anyone who criticises must never lose sight of them. But no one, I think, who was at all connected with the making of policy during those years would want to claim that in important respects we could not have done better. And here, I would suggest, is the weakness of the book to set against its strengths. By virtue of the fact that it is by many hands, it is no one's special responsibility to sum up and to appraise as a whole. Was the rise of prices, as measured by the London and Cambridge index (1938 = 100), from 148 in 1945 to 185 in 1950, and subsequently to 225 at the end of 1952, in any sense inevitable or independent of internal policy? Were the biennial exchange crises of 1947, 1949 and 1951 nothing about which to worry unduly? Were both these phenomena the results of trying to do too much too quickly? On these questions the reader will find information, rather thin and scattered, but none the less there. He will find relatively little in the way of judgments to help him make up his own mind. The book is, possibly by design, a little too neutral and dispassionate here for my taste. For I would have liked to know the verdict of this particular jury.

The essays which come nearest to answering my questions are those by Mr. Little on Fiscal Policy, Mr. Kennedy on Monetary Policy, Mr. Ward-Perkins on Banking Developments, Mr. Wilson on Manpower, and Mr. Worswick himself on Direct Controls and Personal Income Policy. But curiously there is no single and central discussion of investment policy, concerned to sort out the conflict of urgency, on the one hand, if production and export were to be stepped up, and danger, on the other, if inflation was to be avoided. And though Mr. Asa Briggs' chapter on the Social Services is one of the best things in the book, the right scale of housing investment is scarcely within his terms of reference and not obviously within that of any other chapter. I get no clear impression whether the authors would hold that if a little more had gone to consumption and a little less to investment, inflation would have been under better control.

Mr. Little's discussion of Fiscal Policy is admirably done, not least because he brings out most clearly the much greater difficulties of a Chancellor whose tasks are "the preservation of full employment and the avoidance of inflation"; to these he adds more diffidently "as rapid a redistribution of wealth as is consistent with both the former aims and a steady growth of the national income" and emphasises that the greatest difficulty is

"the combination of redistribution in a progressive economy with the avoidance of inflation." I was glad to see him give credit to Mr. Dalton for imposing the taxes in the emergency budget in the autumn of 1947 which helped us to get right in 1948. But in balancing the credit I thought he did a little less than justice to Sir Stafford Cripps, whose budget of 1948 established a model for the relating of fiscal policy to general economic policy in a peacetime world, comparable to that of Sir Kingsley Wood in 1941 in a war-time world.

Mr. Wilson's discussion of man-power goes, as it must, well outside the field of man-power policy, narrowly defined. For man-power redistribution is largely, he would say, a matter of creating a climate which is neither deflationary nor inflationary. He argues that the problem of the forties was the antithesis of the problem of the thirties: the danger was not shortage of effective demand but an inflationary pressure which made movement unnecessary and thereby discouraged the expansion of the exporting industries and of coal-mining; thus the chief and recurrent danger was insufficient exports to buy the imports necessary to keep the economy running full.

Mr. Wilson's argument spills over, inevitably, into the field of external policy, and there, as might be expected, he does not march strictly in step with the idiosyncratic Mr. Balogh. For Mr. Balogh, closer in political sympathy with the objectives of policy than many of the other authors, is in far less sympathy than any with the measures for its application. Indeed, the editor of the *Economist* could scarcely have penned a more vigorous indictment of British policy. Mr. Balogh's discussion of external policy is largely (I would say too largely) concerned with the termination of lend/lease, the Washington loan negotiations, the implications of the Bretton Woods plans, the premature restoration of convertibility in 1947 and other actions during the war or during the early months of the peace. I feel sorry that he has given far less attention to the almost equally important later issues, and in particular to the attempts to liberalise trade and to steer us towards convertibility after 1948. For I would have liked to have seen him argue in more detail the difficulties of operating a fully liberal system in a world desperately short of monetary reserves and in which the important structural adaptations, with new propensities everywhere to import and export, were only slowly evolving as new capital investment affected elasticities of supply. It is arguable that we managed to have the worst of both worlds: that we were insufficiently ruthless and insufficiently

endowed with reserves to follow a whole-hogging liberal programme, which might have brought us through acutely painful processes of adjustment to some sort of a new set-up; that we were insufficiently determined to maintain in the face of liberal criticism the controls which would have held the situation while we pushed through the investment and redistribution of resources that were a preliminary to relatively painless decontrol.

A Table in Mr. Balogh's chapter serves to bring home the very formidable costs of our post-war foreign policy. In the six years 1946-51 we spent over £1,500 million abroad by way of military, administrative, relief and occupation expenditures. When one also remembers that our current expenditure on defence, at home as well as abroad, is nearly twice our net capital investment, a tremendously important ingredient of our economic difficulties is at once apparent; together they have contributed greatly to the forces making for overseas deficit and internal inflation. It is very far from clear that greater economic strength might not have enabled us to achieve political objectives with less expenditure and less humiliation.

Mr. Balogh's more central chapter is followed by two excellent chapters entitled Britain and Europe and Britain and the Sterling Area by Mr. Sargent. The first of these brings out with greater clarity than any other short discussion I know some of the difficulties and problems that we have had to face in liberating European trade consistently with safeguarding ourselves and the Sterling Area against too easy a dissipation of our dollar balances. The chapter on the Sterling Area contains, *inter alia*, a convenient and simple statement of the complicated hierarchy of British Exchange Control, as well as a good account of some of the anomalies inside the Sterling Area. Finally, Miss Ady provides a workman-like account of overseas development, of the extent and importance of bulk purchases and long-term contracts and of the various development agencies under the Colonial Office, the Colombo Plan and the like.

I have done far less than justice to parts of the book which I have not mentioned, where Messrs. Leyland, Clegg and Henderson and Mrs. Hall discuss industrial organisation and monopoly control, Mr. Chester discusses the machinery of government and Professor Fogarty location policy. Each of these has points of interest and importance, and together they give substance and reality to the whole discussion.

If we had had all these authors as Ministers and Permanent Secretaries what would have been done differently? Mr. Balogh

would have negotiated much more toughly with the Americans. I wonder whether he would have come home empty handed, and whether his government would have survived to implement the necessary measures of austerity and unemployment. Had he succeeded we would have had seven lean years behind us, but with more than a possibility of seven correspondingly fatter years in front of us. Mr. Wilson would have run bigger risks with full employment; I rather suspect that Mr. Worswick and Mr. Dudley Seers would have been hesitant about his policies. Mr. Wiles leaves me a little uncertain whether he thinks that the bonfire of controls set fire to the thatch of the house. But with one pronouncement, at least, by Mr. Little I find myself in whole-hearted agreement, though I doubt whether it forms a very suitable text for the Cabinet Room: "Economic problems, being problems of choice, are, of course, always insoluble."

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Lessons of the British War Economy. Edited by D. N. CHESTER.
(London: Cambridge University Press, 1951. Pp. xii + 260.
22s. 6d.)

Studies in War Economics. Prepared at the Oxford University
Institute of Statistics. (Oxford: Basil Blackwell, 1947.
Pp. viii + 410. 25s.)

JUST what are the "lessons" in the volume of essays edited by Mr. D. N. Chester is not clear. Most of Mr. Chester's fellow "temporaries" in the war-time Civil Service are concerned in summing up their experiences from the point of view of war-making. But Professor G. C. Allen, writing on the concentration of production, has pertinent remarks to make on the general issue of state intervention in industry and the division of decision-making between central authority and private business; Messrs. Chester and G. D. A. MacDougall, the one on the Economic Section of the Cabinet Secretariat and the other on the Prime Minister's Statistical Branch, both comment at large on the role of the economic expert attached to the non-departmental Minister; and Mr. Richard Stone, in an essay on the development of national income estimates, looks confidently out on a future of peaceful international social accounting scholarship.

Regarding lessons of war, moreover, there are many distinctions of style. Mr. W. B. Reddaway contributes a wholly

general essay, an admirable one, on the modern theory and practice of rationing. Professor E. Devons, though plainly describing an experience, discusses the co-ordination of aircraft production as a generalised problem. And Professor P. Ford, on timber allocation, has an economist's eye for seeing the problems of timber as a case study in the supersession of the free market by administrative controls. The other authors, however, are more chronologically minded in their accounts of their experiences, and draw conclusions to a varying extent. Professor E. F. Nash and the late A. W. Menzies-Kitchin, the one on food and agricultural prices and the other on local agricultural policy, provide accounts which are historical to the point of discussing, not the technique of policy-making and implementation, but the merits of policy itself. Mr. Hugh Weeks, on the other hand, though his essay undoubtedly describes what happened in Anglo-American supply relationships, draws conclusions regarding the character of international negotiations which provide interesting comparison with Mr. Chester's comments on "the Whitehall machine", with Professor Ian Bowen's observations on the loss and subsequent recovery of position of the permanent Civil Servants in a war-expanded Ministry of Works, and with Professor Devons's unvarnished discussion of internal relations within a production department.

One sympathises with Mr. Chester as editor for not trying to sum up the collective wisdom of these thirteen pieces. The theme of the majority is the technique of producing for war, and any summing-up of experience would have, for the most part, to concern itself with that. But there are other things. War finance is isolated in Mr. Stone's essay, but the administrative problems of maintaining home civil supplies, important but frequently overlooked, are here given their full weight in Mr. Reddaway's essay, in Professor Ford's and most of all in a gem by Professor Richard Pares on the work of a departmental priority officer, which combines circumstantial detail with a penetrative, and in places critical, understanding.

In the twin processes of planning and implementation which constitute war-time administration, though there were some economists engaged in such worldly affairs as labour supply and shipping control, most were to be found at the planning end of the productive process, where a practised hand with statistics and an appreciation of the relevance of opportunity costs were primary qualifications. These essays reflect that concentration, and the one that comes nearest to being a key to the remainder, therefore, is that by Professor E. A. G. Robinson on the overall allocation of

resources. Professor Robinson puts the man-power allocations at the centre of his theme, and this is surely correct. It is true, as another essayist writes, that each authority might have known a little more than it did about what the others were doing, and that the Ministry of Labour in particular might have taken more interest in the allocation of materials. Nevertheless, man-power provided the most sensible yardstick by which to measure up the resources of the economy. Labour, frequently the shortest factor, was the most easily understood by Ministers as signifying real resources; once Mr. Bevin had taken charge, it was under powerful control; and there was a readily available machine for collecting the statistics of its distribution and movement. One misses from this group of essays one written from within the Ministry of Labour, but more surprising is Mr. Chester's omission of the Manpower Committee in his discussion of the central machinery for economic policy. His simple division of economic functions between the Lord President's Committee and the Ministry of Production disregards the independence of the Ministry of Labour from the latter and also omits what, perhaps, was the most impressive element of all in the position acquired by Sir John Anderson (now Lord Waverley): that whereas in other fields, the Lord President's Committee grew with the Lord President, Sir John's authority over the allocation of man-power remained his personal property and travelled with him when he became Chancellor of the Exchequer.

As Professor Robinson remarks, "it was in the field of man-power policy that the problems of military operations, of munitions output, of civil standards and of the control of inflation all came together and demanded simultaneous solution," and from his discussion of man-power allocations, one may move to one or other second stages. One may consider the techniques of resource control, comparing Professor Ford on timber, where the control of supply was simple but demand a matter of innumerable uses, with Professor Bowen on building, where the uses were more easily enumerated but where supply points were many and scattered. Or, alternatively, one may go on to consider the programming of production, comparing Professor Pares's embarrassment of claims from many types of civil production, and no co-ordination between them, with Professor Devons, concentrating on the one product of aircraft but with an immense problem of fitting together plans for final aircraft, components and spares.

Programmes must be endorsed, however, and recommendations backed, and the achievement of this stage required, as the essays

show, a subtle combination of authority and influence, often with less of the former than of the latter, and with the latter itself fluctuating with the fortunes of Ministers, the interests of official heads and the sympathy and like-mindedness of executants in other departments or sections of a Ministry. On this subject, we see the similarities in the experience of relationships between programming departments and chief executives recorded by Professors Devons and Bowen, and also note echoes of the same theme in Mr. Chester's observations on the place of an Economic Section in the administrative process.

Finally, to make plans and programmes one must have knowledge of what is going on and of what lies ahead. As regards industry itself, this is first and foremost a matter of statistics. The supersession of the price system by administrative direction meant statistical returns and statistical controls, a matter here seen at its most formidable in the cases of timber and building, both industries which, before the war, had relied upon market movements to govern their activities, with little organised information recorded. Turning inward to the Whitehall machine or the individual government department, on the other hand, we find that the need for qualitative information about policies may be more important than quantitative records. Both Mr. Chester and Professor Devons have pertinent comments on how such information is acquired. Mr. Chester, working on the high-policy level, sees "the close personal contact which existed between a small number of Ministers and the Civil Servants—permanents and temporaries" as the most effective method of communication. Professor Devons, living in the harsher world of aircraft production speaks bluntly of spying, of getting disgruntled members of another staff to "spill the beans," and of making the acquaintance and friendship of sympathetic minds "not over-sensitive about the prestige of their own directorate."

Professor Devons perceives the danger, in such a complex world as that with which he had to deal, of having too much information: "although adequate statistics were necessary, it was the limitation in the number of interrelated variables that could be comprehended by one brain that was the effective limiting factor." For most purposes, however, a surfeit of information was less to be feared than a lack. It was the inability to answer the *simple* questions quantitatively that was so often irritating. A Lord Cherwell with a flair for orders of magnitude may be, as Mr. MacDougall insists, a valuable assistant to a Prime Minister who demands to know orders of magnitude before taking decisions.

But a flair may be little more than a disguise for prejudice if there is insufficient statistical material to provide it with a discipline. The Prime Minister's statistical branch, of course, was building up its own statistical records before the Central Statistical Office was brought fully into being. But one must sympathise with Professor Robinson's complaints that there had been "nothing like sufficient background study in peace-time of the economic problems and limitations of conducting a total war," and that, throughout the war, attempts at forecasting were never for more than comparatively short periods ahead. Attempts at national income forecasting were made in the later war years when reconstruction questions were asked, but, surprisingly, these are omitted from Mr. Stone's story, and his discussion of the longer-term scope of income estimates omits forecasting problems.

Statistics bothered the war-time members of the Oxford Institute as well as the inhabitants of Whitehall. To their keenness to discover new statistics relating to the war economy was added the handicap that so many of the known official figures were suppressed during the war on grounds of security. Some of their energy did not avoid the dubious occupation of trying indirectly to derive these secret figures, but other work, as the collected papers published in 1947 show, was of a more generally useful character. The periodic comments on inflation and the budgetary problem by Dr. Kalecki, a number of which are included in this volume, though somewhat ahead of their time in their insistence on comprehensive rationing and price stabilisation through subsidies, and often more radical in political tone than the comments of the financial journalists, did not greatly differ in analysis from what we have now come to take for granted. Likewise, the discussions on consumer rationing and price control, in which the name of Dr. Kalecki is also prominent, do not greatly differ in their essential substance from what Mr. Reddaway has since been able to say, more authoritatively, in *Lessons of the British War Economy*. Due credit must be given for the time at which such essays were written, when the same topics were being discussed and the same economic analysis was being applied—though with greater care over the administrative problems—within the secret confines of Whitehall, Horseferry Road and Colwyn Bay.

Indeed, it might be a general proposition that the articles in this book are of a high quality where their analytical content, economic or statistical, is large and low where administrative dicta dominate. Articles on rationing by Messrs. J. M. Nicholson

and G. D. N. Worswick are accepted contributions to a corpus of theoretical literature. Similarly, Mr. Nicholson's studies of wages and the distribution of labour and the efforts of Miss T. Schultz and others to elucidate standards of living in working-class households are a permanent memorial to academic research under difficult conditions. On the other hand, the comments of onlookers in regard to such topics as war production, the concentration of industry, and regional board organisation must necessarily seem light-weight now and probably always were. How much more there was both of sympathy and penetration in the contemporary observations—but to a privileged audience—made by such as Mr. Chester's colleagues on these same topics!

There is an uneven distribution of worth-while ideas in the four hundred pages of *Studies in War Economics*. But, should another war occur, there will be some lessons to be found therein as well as in the more authoritative volume which Mr. Chester has edited.

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A Theory of Price Control. By J. K. GALBRAITH. (Harvard University Press (London: Geoffrey Cumberlege), 1952. Pp. vii + 81. 10s. 6d.)

At the beginning of the last war when controls over prices were being introduced, economists were generally sceptical of their efficacy, partly on theoretical grounds and partly because experience seemed to show that such controls had been futile. Nevertheless, most governments during the war, and some of them since, continued to regard price control as "an important instrument of stabilisation policy," and their view was not unjustified by events. So Professor Galbraith was led to inquire into the reasons for the "unexpected workability" of price control, and his little book is a realistic and lucid contribution to this subject. According to his argument, the pre-war estimate of the futility of price control rested upon the assumption of competitive markets. In such markets price control indeed proved to be ineffective, except when accompanied by rationing, but in those large sectors of the economy where imperfect markets are usual, price control, even without rationing, went far towards justifying itself. This was for several reasons. In imperfect markets prices and margins anyhow tend to be inflexible and conventional; enforcement is comparatively easy when the

number of producers in each trade is few; and this fewness makes it possible for the government to negotiate with the producers about the supply to be forthcoming at the controlled price. Furthermore, price movements depend upon expectations, and control may affect expectations so as to restrain anticipatory buying. But, since price control necessarily helps to produce an aggregate of monetary demand in excess of the supply of goods and services, is it not likely that this success will be short-lived? The answer, of course, depends upon whether the volume of current savings is adequate, and Professor Galbraith concludes that war-time price control in practice was an important proximate cause of the increased saving needed to satisfy this condition. There are clearly limits to the volume of saving that can be expected even in war-time conditions, and the "disequilibrium system" (to use his own term) will work only if the "margin of tolerance" (that is, "the volume of demand in excess of current supply that . . . is consistent with additions to aggregate output") fits the circumstances in which the policy is being practised.

As long as the margin of tolerance (whatever it may be) is not exhausted, then price control may be expected to enjoy a measure of success. But the margin of tolerance may shrink, and the scope of any future price-control policy may be narrowed, if experience convinces the public that inflationary conditions are likely to persist. Thus, during the war the margin of tolerance was wide in the United States, largely because of the confidence that American prices would fall when peace came. In Germany, on the other hand, with memories of the inflation of the twenties, the margin of tolerance was very narrow.

It is sometimes argued that suppressed inflation is attended by dangers that are as serious as, though different from, those that accompany an open inflation. Professor Galbraith disagrees with this view, and he states the familiar argument that, with an effective control over prices, the interaction of wages and prices may be prevented from becoming an accelerant of the inflationary process. The alternative policy of attempting, *under conditions of full mobilisation*, to curb inflation by heavy taxation means that the government deprives itself of the possibility of using "the incentive value of money claims to be held for later expenditure." Under conditions of *partial mobilisation*, such as the present, when there are many alternative outlets for expenditure, and when there is no terminal date to that mobilisation, the margin of tolerance narrows, and monetary and fiscal

measures are therefore called upon to play a much more important part than in war-time.

Although Professor Galbraith has written in the light of American experience, what he says has relevance to price-control policy as followed in this country. It might be pointed out, however, that in Great Britain some of the problems that attended price control in markets where there were numerous sellers and where the identification of goods was difficult (as in clothing) were solved by the "utility" schemes fortified by purchase tax on the non-utility lines. These arrangements enabled the area of reasonably effective price control to be considerably extended in this country. British experience also suggests that Professor Galbraith's distinction between the categories of goods where the control was effective, and those where it was ineffective, is too clear-cut. There were, in fact, many gradations. Moreover, the very concept of "effectiveness" in this context is not without ambiguity, especially as the purposes which price control was supposed to serve changed from time to time. Although we still lack a detailed study of one of the most important aspects of price control, namely its effects on the output of particular industries, anyone who now engages upon such inquiries will find his task made much easier by Professor Galbraith's stimulating essay.

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Essays in Economics. By A. C. PIGOU. (London: Macmillan, 1952. Pp. viii + 241. 15s.)

Utility and All That. By D. H. ROBERTSON. (London: Allen & Unwin, 1952. Pp. 207. 18s.)

Economic Essays. By R. F. HARROD. (London: Macmillan, 1952. Pp. xiv + 301. 18s.)

No one can read these three books of essays without being impressed by the amazing versatility of the older generation of economists. (I hope Mr. Harrod will forgive me for so classifying him!) Professor Pigou writes about subjects as different as Mill and the wages fund, over-employment, central planning, the inflationary gap. Professor Robertson embraces utility and interpersonal comparisons, the theory of interest, economic union, the future of banking. Mr. Harrod moves with equal skill and grace in problems of population, the theory of duopoly, the field of

dynamic theory and the appraisal of Professor Hayek's brand of individualism. In these days of increasing specialism, when too many of us are afraid to open our mouths outside an exceedingly narrow branch of expertise, is there not something to be learned from contemplating these volumes? Are their writers less expert than the specialists? Surely not. Are we not losing more by failing to see economics as the unity which it undoubtedly is, and must be, than we are gaining from our divisions of labour?

Professor Pigou's volume brings together eighteen articles, all written since 1939 and most of them since our paradoxical regulations ruled him too senile to educate the young. They begin with the charming Presidential Address that he gave to the Royal Economic Society comparing the economics and the economists of the present with those of his own younger days. They include his Stamp Memorial Lecture on "Wage Statistics and Wage Policy," a paper on "Men's and Women's Wages" based on a memorandum prepared for the Royal Commission on Equal Pay, and a number of articles from various Bank Reviews on topical problems, as well as several which have appeared in this JOURNAL. He has added two or three articles which have not been previously printed. These include one on the "value" of different kinds of transfer payments inspired by the recent book of Messrs. Rowntree and Lavers, a study, written in 1951, of the inflationary gap and another, written in the spring of 1952, on the gold and dollar reserve.

Professor Robertson's collection equally contains a number of familiar friends; indeed, in his case they have all, I think, appeared before. He divides his sixteen essays into four groups. The first, beginning with "Utility and all That" is concerned with the broader aspects of economic theory. It contains in addition his Presidential Address to the British Association and to the Royal Economic Society and his long review in the *Quarterly Journal of Economics* of the first *Survey of Contemporary Economics*, edited by Professor Howard Ellis. The second group is concerned with interest theory and investment policy, and includes the important paper "Some Notes on the Theory of Interest" from the John Williams' *festschrift*. The third group is composed of articles dealing with current economic policies and trends. Some of these are probably less well known, for they include a question-and-answer interview on the subject "Does Britain Face Collapse?" which appeared in the Melbourne *Argus* in February 1948, a broadcast in August 1948 on Western European Economic Union, a lecture given in Belgium and published in

Lloyds Bank Review in 1949 on "Britain and European Recovery" and a paper on "The Terms of Trade" given to the International Economic Association. The final group deals with monetary and kindred problems. "Is there a Future for Banking?" was addressed to the Lombard Association. "New Light on an Old Story" is a review of Professor Rostow's *British Economy of the Nineteenth Century*. "Stable Money" is a review of Lloyd Mints' *Monetary Policy for a Competitive Society*.

Mr. Harrod's collection covers a longer period of time, and indeed reprints much of the work that one most closely identifies with his name. It will be immensely valuable to have it all conveniently together. Like Professor Robertson, he divides his volume into four parts. The first, "Man-power," contains two memoranda which he contributed respectively to the Royal Commission on Population and the Royal Commission on Equal Pay. The second, "Competition," begins with the five articles from this Journal, "Notes on Supply," "The Law of Decreasing Costs," "A Further Note on Decreasing Costs," "The Equilibrium of Duopoly" and "Doctrines of Imperfect Competition" which represented contributions of exceptional importance to the discussions of the early thirties. There follow two new articles of very great interest, in which Mr. Harrod has reviewed the subsequent developments of the subject and has tried to relate this and other earlier work to more recent thinking. A third part, "Employment," deals with problems of Keynesian economics and of dynamic theory. The first of these articles, on "The Expansion of Credit in an Advancing Community," written before Keynes's *General Theory*, raises problems of the balance between saving and investment, but handles them, as Mr. Harrod is convinced they must be handled, in dynamic rather than static terms. The fourth part, "General," is made up exclusively of a discussion of Professor Hayek's Finlay Lecture, given in Dublin, on Individualism, True and False.

This volume would be immensely worth having if it contained nothing but the older and familiar papers. But it is the new discussion of imperfect competition and of profits which adds an exciting *hors d'œuvre*. This is important, in the first place, because Mr. Harrod has much that is exceedingly important to say about the older problems of the meaning of normal profits where there is an element of monopoly and of the existence or non-existence of excess capacity. But it is doubly important because he goes on to discuss the newer problem of the rightness or wrongness of using techniques of thinking about the actions and

decisions of businessmen which differ completely from the ways in which they think themselves, and the "full cost principle" in relation to this. I shall say no more than that I believe Mr. Harrod's discussion, together with Miss Brunner's article in *Economia Internazionale*, has done a very great deal to formulate the problems, to clarify the issues and to narrow the possible field of disagreement. Indeed, it would now seem to be increasingly clear that what in early presentations had seemed to be put forward as a meaningless but important ritual is in fact, as many of us had been inclined to think, a meaningful, rational and by no means inflexible ritual, perfectly appropriate to long-term profit maximisation in a significant range of conditions. I hope that Mr. Harrod will find time to elaborate his treatment of all this and to apply it to the multi-product firm. For many of these problems only become fully intelligible when the problem of the internal allocation of non-specific resources is introduced.

All these three volumes are of far more than ordinary interest and we must be grateful to both authors and publishers for making their contents much more readily available.

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Pricing and Equilibrium: an Introduction to Static and Dynamic Analysis. By ERICH SCHNEIDER. Translated by T. W. HUTCHISON. (Edinburgh: William Hodge, 1952. Pp. xii + 327. 25s.)

The Theory of the Market Economy. By HEINRICH VON STACKELBERG. Translated by A. T. PEACOCK. (Edinburgh: William Hodge, 1952. Pp. v + 238. 25s.)

THE contributions of Professors Schneider and Stackelberg to economic theory are well known in this country and a translation of their text-books is very welcome, especially when both authors are as well served by their translators as are these.

Professor Schneider's book is a remarkable achievement. In three long chapters and one short one he guides us surely and skilfully through the theory of individual decision taking ("The Economic Plan of the Household" and "The Economic Plan of the Firm") to a detailed analysis of general exchange equilibrium ("The Problem of Economic Equilibrium in a Closed Economy"). The treatment, with minor exceptions, is both rigorous and clear, illustrated as it is by numerous diagrams and

examples. The influence of Swedish economics, with its emphasis on plans, expectations and period analysis, is discernible throughout, and makes this text greatly superior to many now in use, where these matters are only discussed in footnotes if at all. Professor Samuelson's writings on the methodology of equilibrium analysis, on statics and dynamics, etc., are widely and wisely used, and are very neatly presented. Indeed, a great deal of recent work in micro-economics is put across with the maximum clarity and minimum pain.

Especially worthy of note is the second chapter on "The Economic Plan of the Firm." There can be few economists to-day who are satisfied with the current theory of the firm, but if this theory has to be taught to students, then Professor Schneider's chapter shows us the best way of teaching it. Starting with a short lucid classification of objectives, modes of behaviour and forms of markets based largely on the works of Frisch and Triffin, he leads us step by step through a most interesting hundred pages to a consideration of the theory of costs, equilibrium, stability, the cobweb theorem, investment and all the other paraphernalia of the modern theory of the firm. Nowhere does he lose sight of either the *ex ante* nature of decision-taking or the importance of conjectural elements in many important market situations. Dogmatism is everywhere eschewed and the limitations of the theoretical models carefully explained. The whole chapter is a model of clarity, and after reading it a student either understands this part of economic theory or, if not, should give up his study of economics altogether.

This, then, is a very good text-book indeed, and should be most useful to students in their second or third year. There are, however, two minor criticisms. In the chapter on household behaviour, the convexity of indifference curves is introduced as an assumption, rather than derived from the basic hypothesis of maximum utility. As is well known, this can be done on an elementary level by an index-number technique, a technique which Professor Schneider himself employs in discussing the demand for a factor of production (p. 152). Since diminishing marginal rate of substitution is one of the few theorems derivable from utility analysis, it seems a pity not to have done so.

The second criticism relates to Professor Schneider's discussion of general equilibrium. By demonstrating the interdependence of the economic system and bringing the various bits of theory together, he does a great service to the student, who is so frequently left wondering where all the theorising is leading to.

Unfortunately, however, the equations used, and the distinction between the demand for goods which depends on relative prices only and the demand for money (the quantity equations) which depends on absolute prices, incur all the objections which Patinkin and others have recently levied against the "classicals." One hopes that this will be rectified in later editions. The equation on p. 315, where the demand for *nominal* cash balances is written as a function of the rate of interest is surely a slip!

Professor Stackelberg's book is frankly disappointing. Knowing him to have been one of the champions of economic theory in Germany, one expected both a more up-to-date and more rigorous treatment of the topics covered, which are roughly the same as those dealt with by Professor Schneider. Moreover, for a text-book it lacks clarity and is in parts far too difficult.

The difficulties in reading the book are partly due to the huge amount of new (and unfamiliar) terminology, *e.g.*, saving quota = average propensity to save, isothope = isoquant, isotime = transformation curve, fungible = homogeneous, etc., and partly to the infrequency of diagrams (there are forty-seven, as compared with a hundred and thirty-eight in Schneider's book). It is, probably, not correct to assume that a student will be more frightened by the sight of a diagram accompanied with explanation than by a translation of mathematics into words.

The book is not up-to-date (not even up to say 1940), as is amply illustrated by the chapter on capital and interest which is based on Böhm Bawerk and takes little notice of either criticisms of the latter's work or of recent writings in interest theory, by the adherence to a rigid-quantity-equation approach, by the lack of reference to the works of Chamberlin or Keynes, and scant and insufficient reference to such authors as Joan Robinson, Triffin, Knight, Kaldor, Sweezy, Schneider and indeed almost everyone who has written on economic theory in the last thirty years outside Germany. We are assured, in his lucid introduction, by Mr. Peacock that Stackelberg was well acquainted with the work of these omitted authors, but there is little indication of this in the book. This, of course, does not mean that what Stackelberg has to say is necessarily uninteresting, but it does mean that his work is hardly suitable as a text-book.

The one modern work extensively utilised is Professor Hicks' *Value and Capital*, and it is perhaps over-utilised, as for instance in the lengthy discussion of the effect of a price change on the demand for a substitute of a complement. Moreover, clearly Stackelberg had not read the appendix at all carefully, since

diminishing marginal rate of substitution (here called "Gossen's second law") is introduced as an empirical assumption, and the definition of substitutes and complements of factors of production and the analysis of factor-price changes is rather confused. Here again, the use of Mrs. Robinson's well-known theorem of the effect of a change in the price of one input on the demand for that of another, where substitution and expansion effects are clearly distinguished, would have been useful.

The book lacks rigour, since many proofs such as those of "Gossen's second law," the greater productivity of roundabout methods of production, time preference, diminishing marginal productivity, etc., are not proofs at all but instances of a particularly dangerous kind of special pleading. That is, Stackelberg appeals to more or less known facts and to intuition to justify particular abstract conclusions. Thus he appeals to "everyday experience" to justify the convexity of indifference curves, and on the basis of the abstract theory of consumers' choice reduces consumer behaviour *ad absurdum* if time preference is absent with a positive rate of interest. Present-day economic theory is hardly a unique explanation of observed facts.

Since Stackelberg was an important economist, his book is of interest to academic economists, although they will hardly learn from it. For the student, however, the advice is: "stick to Schneider."

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F. H. HAHN

Business Cycles and National Income. By ALVIN H. HANSEN. (New York: W. W. Norton, 1951 (London: Allen & Unwin). Pp. xv + 639. 55s.)

Business Cycles. By D. HAMBERG. (New York: The Macmillan Company, 1951. Pp. xviii + 621. 37s. 6d.)

Introduction to Business Cycles. By ASHER ACHINSTEIN. (New York: Thomas Y. Crowell. Pp. xvi + 496. \$6.)

THESE three stout volumes from the United States all belong to that category of text-book-cum-treatise that is now seen—though not perhaps bought—increasingly frequently in this country. There is no denying that books of this type have considerable usefulness for the undergraduate student. At the same time it is difficult to conceive of any better way of concealing from the more advanced reader whatever original contributions to knowledge or fresh ideas on particular points their authors may have to communicate.

Professor Hansen's book is likely to be widely used as a text-book, and very satisfactory it is for that purpose. This is notwithstanding that the level of difficulty varies greatly from one part to another. The reader who became acquainted with the multiplier for the first time in Chapter 10 is likely to make heavy going of the distinguished essay by Dr. R. M. Goodwin on Econometrics in *Business Cycle Analysis* that appears as Chapter 22. Empirical students of business cycles will probably complain that Professor Hansen places overmuch reliance on large aggregates both in explanation and in description, but the frequent stress laid on technical innovations and "autonomous investment" serves as a valuable corrective against an overmechanistic attitude. Part II may be taken as one of the best and most up-to-date introductory expositions of Keynesian income analysis. The hoary old controversies about savings and investment are reduced to their proper perspective, and room is found to incorporate a full discussion of post-Keynesian notions about the consumption function and the relation between its cyclical and its secular behaviour. There is a useful brief historical survey in Part I. By taking this survey back to the Civil War, Professor Hansen is enabled to draw some interesting comparisons between the depressions of the 1870s and 1890s and that of the 1930s.

It is natural to compare the present book with Professor Hansen's earlier *Fiscal Policy and Business Cycles*, published in 1941. As the change in title indicates, the present book is less concerned with details of contracyclical fiscal policy; the stagnation thesis is also relegated very much to the background. Instead, some 200 pages are devoted to an historical survey of writings on business fluctuations since Lord Lauderdale. Much of this is familiar ground, though in Professor Hansen's skilful and lucid exposition it is by no means lacking in interest. It may be felt that in this survey something less than justice is done to empirical writers—for example, Tooke and Juglar, to say nothing of Marx—since in this field many of the best contributions were made by authors not in the main stream of classical theoretical political economy. Likewise, both the heading and the contents of the chapter entitled "Sequences, Leads and Lags: Wesley Mitchell" are likely to cause annoyance in some quarters. But Professor Hansen does a useful service in calling attention to the work of a number of authors not now much read, particularly that of Tugan-Baranovsky and other continental economists of the period before the First World War on the theory of investment. This part of the book concludes with an admirably up-to-date

treatment of the present state of business-cycle theory, preparing the way for a well-balanced discussion of policy in Part IV.

Of the three volumes under review Professor Hamberg's is the most confessedly a text-book. Much of it is taken up with a recital of alternative hypotheses, followed by an eclectic summary, much in the manner of Professor Haberler's *Prosperity and Depression*. The author's general approach may be summed up as eclecticism within a Keynesian framework. The exposition is for the most part clear and workman-like, though quite lacking in originality. The pace is leisurely, and the correlation between the space accorded to different topics and their importance is not perfect. A lack of theoretical rigor at many of the more difficult points is only partly excused by the author's desire to keep his book on the undergraduate plane. The statement of Professor Hawtrey's theory fails to indicate the part played in it by lags, and the section on the interaction of the multiplier and the acceleration principle makes no mention of the problem of damping. It seems a pity, too, that in over 600 pages, mostly devoted to theory, no room could be found for mention of Mr. Kalecki's name nor of Mr. Kaldor's model of the cycle. On the other hand, the treatment of certain issues is notably good: the demand for cash for the precautionary motive, the Ricardo effect and the significance of harvest fluctuations provide examples. The chief defect of the book taken as a whole is perhaps the almost complete absence of any theoretical discussion of the relation between the trend and the cycle. Judging from his opening section on the statistical decomposition of time series, the author apparently regards these as unrelated phenomena.

Mr. Achinstein was a pupil of Wesley Mitchell's, and his book is strongly marked with the Mitchell imprint. He starts with a survey of theories, briefer than Professor Hamberg's but not much less comprehensive, and clear and to the point. Part II contains empirical descriptions of the course of the cyclical process in terms heavily dependent on National Bureau researches. The most original and noteworthy feature of the book is the allocation of well over a third of its space to "Secular Trends and Cyclical Fluctuations." As it turns out, this part is a little disappointing, since, apart from a useful introductory section on the possible meanings that may be attached to the decomposition of a series into trend and cyclical elements, it consists chiefly of a recital of the contributions to the study of secular trends made by different authors in the past, without any serious attempt at synthesis. But it is good to have these contributions assembled

together in the present context, and Mr. Achinstein is perhaps hardly to be blamed for failing to arrive at any clear-cut conclusions. The book is marked throughout with the thoughtful caution associated with Wesley Mitchell's example. Mr. Achinstein is not, perhaps, entirely convincing in his championing of the "cost-price" or institutional approach to business cycles, but it is certainly seen at its best in some of his chapters, notably in the very interesting section on fluctuations in the building industry.

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What Do Economists Know? By BENJAMIN HIGGINS. (Melbourne: Melbourne University Press, 1951 (London: Cambridge University Press, 1952). Pp. viii + 166. 15s.)

THESE six lectures on "Economics in the Crisis of Democracy," delivered by Professor Higgins when he occupied the Ritchie Chair of Research in Economics at Melbourne, were addressed primarily to the community of "intelligent laymen." At the end of the book Professor Higgins makes a powerful plea for the recognition of the professional status of economists, to be backed by law. While the electorate must still decide the ends of economic policy, the qualified experts should be given greater powers to prescribe the means whereby they can be obtained. "Why not," he says, "give the economist a chance, and let him take the same risk that a medical doctor does—the risk of losing his practice if his errors are too obvious and too frequent." As a rule when an economist refers to "our science" or embraces the tribe of economists in terms of warm brotherhood, I shift in my seat, look uneasily over my shoulder and creep out of the room muttering "include me out." Too often the collective support of economists is invoked for some narrow and restrictive view of what constitutes economics, or to bolster up some peculiar, and demonstrably false, doctrine. Professor Higgins's lectures did not produce this reaction. His knowledge is extensive, covering a very wide range of topics and methods, and his judgment commands respect. Moreover, he has managed to compress a remarkable number of facts and ideas in a form which remains vigorous and simple. These qualities are likely to give Professor Higgins a good hearing by the intelligent layman. It is important, therefore, to consider how far his account of the present state of knowledge in economics would be

accepted by other economists, and how far they could subscribe to his programme.

Professor Higgins rightly distinguishes economic laws, which are deduced from certain premises, and empirical laws which are more directly observable. He is, I believe, unduly optimistic about the predictive efficacy of the latter kind. It is true that econometric models of apparent complexity have been made—he quotes Klein's model for the United States 1921–41—but the fact remains (as some of their constructors recognise) that models of this type involve heroic abstraction. I suspect that one of the main reasons why we get good correlations in the inter-war years is that, for a variety of reasons, especially unemployment in industrial countries, fluctuations were dominated by demand changes, most supply elasticities being high. Only time can show how well consumption functions, *et hoc genus omne*, can stand up to a more fully employed, as well as a more consciously interventionist, world. And do we really know, as distinct from making our guesses about, how much a given increase in interest rates will inhibit investment, or what increase (or decrease) in wages is needed to bring about a required change in the output of coal or textiles? Above all, do we know why some economies grow, and others do not?

When it comes to the formulation of policies, Professor Higgins argues that it is possible to set up unambiguous and non-controversial objectives which satisfy the two conditions that all (or most) men of goodwill would accept them, and that they should be sufficiently precise for the experts to get to work without introducing new, and possibly conflicting, value considerations. I wonder. Is "full employment without inflation" a precise directive? Is government price control an ethically neutral, technical, device, or is it a blasphemy in the temple of freedom?

In his last three lectures Professor Higgins comes to grips with the great questions of the causes of social and international conflict. He points out how extremes of inflation and deflation can tilt the balance of economic strength in favour of one or other of the Big Three: Big Business, Big Labour and Big Agriculture. But he seems to suggest that with the right economic objectives, not simply would a workable equilibrium be achieved between the contending forces, but the very sources of conflict would somehow disappear. Here the problem has been well stated, but it has not been solved.

If I have disagreed with the author about three essential features of his argument, I hope also that I have shown that his

argument is one which economists should study closely. I shall not join in his campaign for a closed shop among economists. Those economists who do risk their necks by studying the real world and making predictions which can be proved wrong by the facts are, I believe, the kind of economists to encourage. But if they are to lose their practice whenever they go wrong, we should soon be left with a profession containing only those who are adroit enough to remain in the realms of pure theory where nothing is ever wrong, or relevant.

G. D. N. WORSWICK

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Welfare and Competition. By T. SCITOVSKY. (London: Allen & Unwin, 1952. Pp. 457. 25s.)

THE main purpose of this book is to bring together the latest developments in price theory and welfare economics, so as to explain the working of the pricing system in both perfect and imperfect markets, and to assess its ability to allocate resources and distribute products efficiently from the point of view of non-ethical welfare criteria.

Part I is the introduction. In Part II, which deals with conditions under perfect competition, we are introduced to indifference curves, opportunity cost curves, transformation curves, demand curves, cost curves, isoquants, isocosts and the like. The exposition is at once meticulous and extremely lucid: even I (a deplorable geometer) was able to see what has to be tangential to what, and why. Admittedly the reader's task is lightened through the argument being confined to two-dimensional cases: these we are assured can readily be translated into n dimensions, but perhaps we are let off a little too lightly in never being called upon to look a cross-derivative straight in the eye.

The chapter on Capital calls for special attention. Here we are told that capital funds are under perfect competition the only factor in inelastic supply to the firm, and it is their availability which, at any point of time, sets the limit to the size of each firm. What determines the terms on which capital funds can be obtained? The answer which Professor Scitovsky gives to this question is hardly satisfactory, mainly because he (like so many of us) finds that the answer which seems most plausible in Stockland is quite different from the one which seems most plausible in Flowland. In his exposition he takes us first to Stockland, where

the unimportance of current saving and of new issues is so obvious as to be mentioned only in a footnote (p. 199), and where the investor claims a reward only to compensate for uncertainty and illiquidity. Then suddenly we are on the other side of the looking glass in Flowland where the rate of interest is determined by the forces of thrift and productivity, represented by the curves labelled *Savings* and *Marginal Efficiency of Investment* in Fig. 50, p. 221. The point of intersection of these two curves "shows the interest rate which would equate current savings to current investment in a fully employed economy; and it also shows what the level of savings and investment would be under these circumstances" (p. 225). Is there, however, any tendency for this particular rate of interest to be realised in practice? Unfortunately we are not allowed to consider this question in any detail, because at this point we are sharply reintroduced to our old friends from Stockland, uncertainty and illiquidity, and without further ceremony we are told that their dues do *not* after all account for the whole of the rate of interest, as seemed to be the case in Flowland, but are *additional* to the reward for thrift (p. 225). Surely this conclusion cannot possibly be right. For the saver's reward is *either* liquidity *or* interest, depending on whether or not he invests his savings: *prima facie*, therefore, Professor Scitovsky is guilty of adding alternatives.

In Part III we leave perfect competition to consider an economy in which some transactors, namely all non-farming firms, are price-makers, though everybody else remains a price taker. Here the price-making firms have (or act as though they had) marginal-cost curves which are horizontal over the normal operating range (p. 309): unfortunately, however, most of the empirical evidence for this seems to relate to times of widespread unemployment, so I doubt whether sceptics have been silenced once and for all. Professor Scitovsky's thesis about cost curves provides half of his explanation of the apparently widespread practice of setting prices by reference to a constant percentage mark-up; the other half of his explanation is the thesis that a price-making firm assumes, *unless there is definite evidence to the contrary*, that the elasticity of supply of each factor employed, and of each product sold, is unaffected either by changes in the firm's output or by shifts in the relevant schedules of supply or demand (see *e.g.*, p. 298). This thesis is far from being self-evident, but is unfortunately not supported by any empirical evidence.

In Part IV we pass into the real world of restricted competition

and uninformed markets, and here Professor Scitovsky shows that his exceptional skill in *a priori* reasoning is equalled by his mature understanding of the practical workings of economic institutions. Only once did his story strike me as slightly inadequate: I would have liked a more thorough explanation of why old firms have an anti-social tendency to delay the introduction of new methods (pp. 342 and 429). Are they simply the victims of their own book-keeping (in that they are reluctant to scrap plant before it has been written down to its scrap value), or have they a more sinister vested interest?

In *Welfare and Competition* Professor Scitovsky has bent his great erudition, wisdom and expository skill to the ambitious enterprise of bringing Marshall up to date. By this book may be fairly judged how much (and also, alas, how little) we have progressed since the final edition of the *Principles*. It will assuredly come to be recognised as the standard work in its field.

BRIAN TEW

Nottingham.

The Sources and Nature of the Statistics of the United Kingdom, Volume I. Edited for the Royal Statistical Society by M. G. KENDALL. (Edinburgh: Oliver & Boyd, 1952. Pp. viii + 352. 21s.)

THIS volume brings together twenty of the articles previously published in various numbers of the *Journal of the Royal Statistical Society*, and also available as reprints. It is convenient to have them all together in one volume, and as the articles were all written by people with a profound knowledge and experience of the field in question, they naturally contain much which is of great value and often unobtainable elsewhere. Nevertheless, I must confess that my dominant impression after reading the book is one of disappointment: it is very useful, but it might so easily have been so much better. Since the march of time will inevitably demand a revised edition sooner or later, it seems best to use the limited space available to describe some of the shortcomings for which a remedy might easily be found; this can most easily be done under certain headings based on the brief editorial preface.

Firstly, it is important in a book on statistical sources to give the reader a firm *date* to which he can regard the description as applying. With a collection of articles by different authors he will forgive the editor if some are less up-to-date than others,

but this increases the need for a date at the head of each. In this book, however, his hopes are raised by the statement in the preface (dated November 1951) that the articles have been "brought up-to-date where necessary," and he gratefully assumes that the editor has cajoled all contributors into amending their accounts to cover the position in (say) mid-1951. But alas, the statement is quite simply untrue of many chapters, and, worse still, there is very seldom any easy way of knowing how out of date a particular chapter is. Moreover, the point may well be of great importance: thus we have no warning that the very valuable chapter on Overseas Trade by Maizels was written in 1949, and so describes the balance-of-payments statistics in terms of the position before the radical changes introduced in October 1950, and does not mention the very useful monthly *Report on Overseas Trade*, which first appeared for January 1950. Even the chapters which have a postscript, or series of "later notes" in square brackets, have not really been "brought up to date": thus the Editor's own chapter on shipping still illustrates the statistics for the world fleet by a series stopping with mid-1947, and still adds the comment that "the surprisingly high proportion of oil-burning steamers in 1947 was a legacy of the war and may not be permanent"—a point on which later information must surely throw some light.

Secondly, the Preface tells us that no attempt was made to standardise the articles, but that authors were asked to observe three requirements, of which the first was to survey "all the statistical information in the chosen field, unofficial as well as official." It was undoubtedly wise not to try to standardise the articles, but it is clear *ex-post* that the results could have been improved if more guidance about scope and form had been given, and some tactful editorial pressure applied to get obvious gaps filled in some articles. Thus there was inevitably a problem about the relationship between the "general" fields, such as census of production, oversea trade or labour statistics, and the "particular" ones, such as the cotton industry or the motor industry. The best results seem to have been secured where the chapters on particular industries include a fair amount about the information to be obtained from the "general" sources, and above all about any special problems in using these sources for the industry in question—Miss Deane's chapter on Publishing is particularly helpful in this respect (and in many others also). But a minimum obligation of an editor should be to see that the industry chapters at least *refer* to the general sources, and include

them in their bibliography; it is highly disconcerting to find that, for example, Mr. Ford's chapter on the Motor Industry not only leaves out all reference to the census of production, but states positively that before the war the only information on production consisted in estimates by the Society of Motor Manufacturers and Traders (which were based on new registrations and overseas trade statistics, and gave no value figures at all). There is, indeed, in several articles a most regrettable tendency *not* to review "all" the statistics, but only those for which the author was in some way responsible: for example, Mr. Ainsworth's article on "Labour Statistics" should really be called "Ministry of Labour Statistics," since it covers (for example) retail prices, but merely refers in a single concluding paragraph to the existence of "many supplementary statistics on labour matters in the publications of other Departments"—including such "supplements" as the whole range of data on occupations in the census of population. Perhaps the most alarming revelation of the Departmental Approach is the statement "The Ministry of Agriculture have their own figures of numbers employed in agriculture, and the Ministry of Works of those engaged in building"—with no attempt to indicate their usefulness or whether they tell the same story as those published by the Ministry of Labour.

Thirdly, the Preface tells us that authors were asked to "call attention to pitfalls in interpretation." This very wide phrase has been treated very differently by the various authors, but the reader is all too often left with inadequate guidance about the probable *accuracy* of the figures, or about what to do when two sets apparently contradict one another. Some authors are extremely conscientious about explaining why figures from different sources should not be *identical*, owing to differences in definition, coverage or time-period, but we are usually given no hint as to whether they consider the series as fundamentally compatible or not, or which is to be preferred. The very natural inference by the reader is that he need not worry about the apparent inconsistencies and that he can simply place complete faith in the one with the definition which fits his problem best; a statistician's life would indeed be much easier if such an inference were more often justified.

Finally, a revised edition should pay more heed to the fact that the book will be used for reference purposes. Many of the bibliographies could be presented in a form which would better meet the third requirement to authors "to enable a student to

follow up the subject": that on agriculture, for example, has 169 items, but they are not classified in any way. There is no index, which is understandable enough, but each chapter should have a table of contents, such as appeared in the *Journal* version of the article on agriculture, and saved the reader from having to hunt through thirty pages to find the part on (say) agricultural credit.

This review has been deliberately critical, in the hopes of securing something yet better in future. That criticism must not, however, hide the fact that the book contains much that is useful, not only about the statistical sources, but also about the subjects themselves. Most authors have wisely decided that an account of the sources is much more effective if it also tells us something of the stories which these reveal.

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W. B. REDDAWAY

A Dollar Index of Soviet Machinery Output, 1927-8 to 1937. By ALEXANDER GERSCHENKRON. (Santa Monica, California: Rand Corporation, 1951. Pp. v + 357.)

As a result of successive five-year plans, Soviet output of machinery has been greatly expanded, and attention has rightly been devoted to measuring the extent of the increase. The official Soviet figures have been regarded with scepticism by nearly all students of the subject, and indeed Soviet economists have themselves made it clear that output series in terms of the so-called "unchanged 1926-27 prices" provide no reliable guide to the actual growth of machinery production, since types and models not produced in the base year have been given an "unchanged" valuation equal to the price ruling in the year of their introduction.

Can another and more reliable guide be devised? Dr. Jasny endeavoured to compute an index for machinery in "real 1926-27 prices," although of course this approach is fraught with many practical difficulties. Professor Gerschenkron, while recognising the advantages of using Russian prices if this is possible, tries a quite different approach: he compares as many Russian machines as possible with their nearest American counterparts—128 different items have been found comparable; then, using the 1939 U.S. dollar prices of these machines, he constructs a Soviet output index on a 1927-28 base. He cannot take his series beyond 1937, as hardly any relevant Soviet figures are available after that date.

His results are summarised in sixty-seven fascinating and lucid pages, and there follow in 288 pages of appendices the fullest details of all his data and computations. He arrives at a gross value index for 1937 of 525 (1927-28 = 100), against comparable Soviet official indices ranging from 1,415 to 1,509. Various cross-checks are attempted, different base-years are tried out, comparisons are made with United States output, and the whole subject is tackled with exemplary thoroughness, and a degree of humility seldom found in statisticians. The reader is warned again and again not to read too much into the computations, that various unavoidable lacunæ affect the result, and, most important, that the use of 1939 dollar prices must of necessity produce an index very different from any index based on Russian prices. Soviet prices of machines whose output expanded fastest in the 5-year-plans were very high in 1927-28, and their use would certainly produce a much higher figure than Professor Gerschenkron's 525. He therefore stresses that the difference between his index and the official Soviet version is in no way a measure of the degree of exaggeration of the latter, even though he insists (rightly, on the evidence) that the Soviet figure is exaggerated on its own ostensible price base.

These problems led Professor Gerschenkron to contrast machinery output indices calculated in terms of a price structure appropriate to a highly developed, or a more backward, country. For this purpose he inquired into *American* machinery output and price data for the census years 1899, 1909, 1923 and 1939, and his results are of so great a general interest that they should be known far outside the narrow field of Soviet studies. In the nature of things, and as he himself frankly recognises, his calculations suffer from a number of imperfections, his data being neither exactly comparable nor wholly representative; however, the results remain most instructive, indeed amazing.

One of his most striking computations relates to the years 1899 and 1939, for which he found fifty-seven more or less comparable items, covering most sections of machinery and vehicle output. In 1899 prices the volume index for 1939 would be 1,542 (1899 = 100), but the same calculation in 1939 prices produces an index of 198 (1899 = 100). One momentarily suspects a printer's error, but the whole calculation can be followed in detail item by item in the appendices. Having exonerated the printer, the reader may jump to the conclusion that automobiles are to blame, especially as their weight in the 1939 output figures is extremely high. However, Professor Gerschenkron has covered

this point by recalculating with automobiles excluded. This time the 1939 indices (1899 = 100) work out as follows: in terms of 1899 prices, 555; in 1939 prices, 70. In other words, the disproportion between the two figures, far from being diminished, is actually slightly increased.

Professor Gerschenkron remarks, not unjustly: "Clearly, in the case of formidable differentials of this sort, no adjustment of the index will do. Naturally there would be nothing meaningful, let alone 'ideal,' about taking the square root of the product of 1542 and 198." He considers that "highly fabricated" products tend to be scarce and dear in an economy in an early stage of industrialisation, that the output of these products shows the biggest relative increase as industrialisation proceeds, accompanied by a relative fall in their price, and that this explains the discrepancy. There is obviously some truth in this analysis: in a relatively undeveloped economy the more complex varieties of equipment tend to be produced in small quantities at high prices, if indeed they are produced at all. Yet one wonders if this is always the most useful way of looking at the problem. Perhaps any new "line" is scarce and dear just because, in the given period and country, it is a new line; if at a later date it is mass-produced, its relative price may be expected to fall, and of course some products lend themselves more easily than others to mass-production economies. Be this as it may, there is strong evidence in favour of Professor Gerschenkron's main thesis: "pre-industrialisation prices, if used as weights, will yield a higher rate of growth than post-industrialisation prices." That this factor is relevant to Soviet output comparisons has not escaped the attention of other analysts; for instance, Dr. Jasny was certainly aware that part of the difference between his and Dr. Wylers' (lower) estimates was due to the latter's use of United States prices. However, it is good to be so forcibly reminded of the magnitude of possible discrepancies.

The extent of the discrepancy in Professor Gerschenkron's American examples is influenced by certain features of the commodities he has chosen, affecting the size of the unit he is valuing. Two examples will make the point clear: in the first place, his tables show a striking fall in the price per unit from 1899 to 1939 of nearly all kinds of electrical equipment, and an equally striking rise in volume of output; however, one suspects that part of the decline in cost is due to a fall in *size of unit*, and this has the effect of exaggerating the volume of 1939 output in terms of 1899 prices. Secondly, the greater size and complexity of railroad

equipment certainly contributes to the great *increase* in price per unit which has taken place between 1899 and 1939; as output of railroad equipment in 1899 was much higher than in 1939, the effect is to inflate the 1899 output when expressed in 1939 prices. It will be observed that the two distortions caused by changes (apparently in opposite directions) in size of unit *combine* to increase the discrepancy between the indices: the one exaggerates the 1939 index in terms of 1899 prices, the other reduces the 1939 index in 1939 prices by inflating its 1899 base. Some part of the difference between 1,542 and 198 must have this as its cause. It is also true that nothing like so great a discrepancy occurs in other sectors of the economy. I. O. Scott, in the *Review of Economics and Statistics* for November 1952, demonstrates that the use of pre- and post-industrialisation weights makes relatively little difference in the case of what he calls "consumer durables." This is, perhaps, not surprising, since one cannot visualise any very powerful trend towards more highly fabricated cloth, buttons, gloves, musical instruments and linoleum, to name the major commodities which he analyses. Clearly, the trend which Professor Gerschenkron discusses would be most noticeable in the machinery sector, where the analyst also faces the virtually insoluble problem of arriving at a perfect basis of comparison between changing types and designs; it is here that the statistician's choice of weights and data can make an immense difference to the results. To use Professor Gerschenkron's words, "the magnitudes of the discrepancies are such that no one engaged in international or historical output comparisons can afford to ignore them."

This scholarly work should be available to everyone who deals with index numbers. It is therefore a pity that it is so difficult to obtain. There cannot be many copies in existence, and this is a positive crime against knowledge.

A. NOVE

Glasgow.

Taxation and Incentive. By LADY RHYS-WILLIAMS. (Edinburgh: William Hodge, 1953. Pp. 188. 15s.)

THIS book might be divided into two parts, the first giving Lady Rhys-Williams' views on economic questions in general, the second explaining a "Plan" for the combination of Income Tax and National Insurance. The author starts by accepting "the determination to abolish poverty," which she calls the great feature of the century. But she does not want to accomplish

this aim through the re-distribution of wealth by steeply graded taxation and by inflation of the currency, as at present. So far she sees "no visible failure of the will to work up to a certain standard of effort," but there is a "grave deterioration in the desire to work *hard*" and in the will to save for the future; the rewards of extra work being insufficient.

Lady Rhys-Williams looks for something to take the place of the old incentives to work—fear of punishment, of want, and of losing social position. She allows much influence to *esprit de corps*, but little to the desire of gain. With the growth of a social conscience and the rapid extension of social services, poverty, in its acute sense, "is almost non-existent." Our author now wants a new kind of redistribution of income, "not from the rich to the poor, but from those at all levels of income who have no dependents to support in favour of those with dependent children or with sick or old people to care for."

In the first part of the book we find some abstract discussion of the functions of the State and the individual, or of how much the Chancellor ought to take from the taxpayer and redistribute. Under our system thrift is discouraged because "those who save get very substantially less help from the community than those who do not." Lady Rhys-Williams understands the reluctance of trade unions to give up restrictions designed to prevent dismissals. The desire for continuity of employment explains part of the demand for nationalisation, because continuity "would always be assured to public servants." Security for everyone, unfortunately, is not to be guaranteed.

This brings us to the main purpose of the book—our author's Plan to combine Insurance payments with Income Tax. It is part of Lady Rhys-Williams' general theory that "the only method of restoring the will to save is to stabilise the value of money and reduce direct taxation," and that a reduction in direct taxation of "earned income is required as a matter of urgency" all the way down. She condemns the anomaly by which incomes above an arbitrary figure "attract heavy and progressive taxation," while those below it attract no tax, although the recipients "are enjoying social services and benefits worth about 25s. a week," towards which they pay only the 4s. or 5s. of their insurance contribution.

The new Plan, as submitted to the Royal Commission on Taxation, proposes that "all contributions shall be made in the form of Income Tax, payable upon all the income of the individual whether earned or unearned." Then, to balance the loss of the

present allowances, each adult would be granted a weekly allowance, with 7s. 6d. for the first and second child, and 10s. for all other children. Alternative schemes make the personal allowance 10s., 8s., or 7s. 6d. a week. On all income up to £600 a year the Tax would be uniform at 4s. in the £ "earned" and 5s. "unearned." Why does our author use the question-begging term "unearned," which the Treasury has abandoned? Incomes between £600 and £2,000 would pay another 4s., and the present surtax would apply to incomes above £2,000. Payment would be made directly to wives; children's allowances "would be payable to either parent."

Critics, no doubt, will dislike the proposal to give all grown-up persons a weekly allowance whether they work or not. But this appears to be an essential part of the simplification and saving of administrative expenses claimed for the Plan. A chapter signed "W. M. D." makes a sharp attack on the recently increased personal and other allowances, instead of a lower "marginal rate of Income Tax," because they must act as a "disincentive."

J. E. ALLEN

Cambridge.

Ireland—Finances of Partition. By L. O'NUALLAIN. (Dublin: Clonmore and Reynolds (London: Burns Oates and Washbourne), 1952. Pp. 196. 18s.)

IN his preface, Mr. O'Nuallain remarks: "There are those, *perhaps*, who *may* consider that the story, as presented, is lacking in objectivity, indicative of a certain bias and they *may* quarrel with my interpretation of the facts. A detached objectivity is not claimed for this work, but it is claimed that the facts, so far as they were ascertainable, have been objectively sought and have been fully presented here." This remark, subject to your reviewer's italicisations, is just, so far as three-quarters of the book are concerned. The title gives no clue to the good work presented under its cover; the book has nothing to do with "Ireland" nor with the "Finances of Partition"—it is concerned with Northern Ireland and the finances of Devolution. It is indeed concerned only with one narrow aspect of Devolution—the fate of Northern Ireland's Imperial Contribution.

This is a useful and necessary contribution to the study of Public Finance. To it Mr. O'Nuallain has applied himself with industry, acumen and objectivity, and his collation of the relevant material will stand, even though one may legitimately doubt the propriety of all the deductions he subtracts from the gross Im-

perial Contribution—the material is all clearly stated in detail and each reader can form his own judgment. More is the pity, then, that this informative work is set in a matrix of irrelevant polemics that is likely to deter the serious student. His own arithmetical conclusion that the net Imperial Contribution amounted to £82 million from 1921 to 1950 does not square either with his initial argument that Ireland was over-taxed before the partition of the United Kingdom in 1921 nor with his conclusion that the government of Northern Ireland has since 1921 been carried for the most part on the backs of the taxpayers in Great Britain.

The author gives a good and clear account of the original fixation of the Imperial Contribution and of the successive changes in the legal relationships between the Exchequers in Belfast and London. By preferring political dialectics to a critical assessment of the working of these or similar arrangements (transferred and reserved services and revenues, contribution to the central authority) in a federal financial structure, he has unnecessarily limited the value of his work, even in an Irish context. Nevertheless, the historical portion of his work is invaluable, and will, one hopes, form the foundation for further more critical and more administrative studies.

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G. A. DUNCAN

Devonshire Studies. By W. G. HOSKINS and H. P. R. FINBERG.
(London: Jonathan Cape, 1952. Pp. 470. 36s.)

THIS charming and admirable book deals with a great variety of topics, and a review limited to its economic aspects can hardly do it justice. Readers of very diverse tastes, and readers who have little interest in economic history, will find much to delight them here. But to all its readers the book will teach one lesson—the interest, value and importance of researches into local history when they are made by real scholars who combine a wide outlook with a detailed and intensive knowledge of local conditions and with the gift of attractive and lucid exposition. Mr. Finberg's remarkable essay on the village of Uffculme in the Middle Ages is alone sufficient to produce a change of heart in anyone inclined to disparage such studies.

In the economic sphere the authors make important contributions to knowledge in several directions. Mr. Finberg gives us a cogent refutation of the common belief that the open-field system did not extend into Devon, and incidentally shows that at

Braunton, the celebrated "Great Field," which Gray supposed to be "of relatively recent origin," is not only ancient, but is not improbably the surviving member of a group of fields whose layout resembled that characteristic of the so-called "midland system." Dr. Hoskins's chapter on "The Wealth of Mediæval Devon" is particularly interesting: based primarily upon the tax assessments of 1334 and 1445, it shows that, while the towns declined in the fifteenth century, the countryside was comparatively prosperous; and Dr. Hoskins breaks new ground by his thorough examination of the evidence for "widespread building activity"—a line of inquiry that deserves to be followed up in regard to other parts of the country. I have long thought that the "luxury" additions that were made to so many churches in the late mediæval period (clerestories in particular) have not been sufficiently considered by those economic historians who regard the fifteenth century as an age of almost continuous economic decline in England; but of course the close dating of such additions is very difficult, and Dr. Hoskins is to be congratulated on the precision of the evidence he has managed to collect for Devon. One wishes, however, that he had told us whether the rural prosperity was partly due to migration from the towns, either to avoid guild restrictions or to reach sources of water power for fulling.

Another important and fascinating chapter is one by the same author on "The Making of the Agrarian Landscape." It is rather bold in hypothesis, but none the less interesting and suggestive for that. Dr. Hoskins pleads strongly for "historical" factors against the claims of geographical fatalism; but it is individual historical development and different waves of agricultural exploitation that he emphasises, and he does not invoke the *deus ex machina* of Race with a big R. For Devon indeed an inquiry of this kind is all the more difficult, because we cannot here make much use of place-names as a means of separating different strata of exploitation, as we can, for example, in east Yorkshire, where Scandinavian names distinguish many outlying hamlets from the older Anglian villages. In his discussion of hamlets and nucleated villages Dr. Hoskins perhaps underrates the influence of geological conditions. One wonders whether he has given sufficient consideration to the position of the water-table. In the view of Des Marez, who is far from being a geographical fatalist, this was in Belgium the chief factor determining the form of settlement, a deep water-table tending to induce concentration in the neighbourhood of a stream until improvements in technique

made the need for deep wells a less serious obstacle to the establishment of scattered hamlets and isolated farmsteads. But it is not the least merit of this book that it will stimulate discussion and further inquiry, even though a reviewer is for the same reason tempted to exceed due limits of space. One must, however, add that, though these "Devonshire Studies" are mainly concerned with the Middle Ages, they include a good deal that is valuable for modern economic history. Dr. Hoskins's essay on "The Farm Labourer through Four Centuries" is particularly informing, and carries the story down to the middle of the nineteenth century.

Lower Heyford.

REGINALD LENNARD

The Young Delinquent in his Social Setting. By T. FERGUSON. (London: Oxford University Press, for the Nuffield Foundation, 1952. Pp. xii + 158. 10s. 6d.)

THIS study of juvenile delinquency in Glasgow covers both the 1,349 "ordinary" school-leavers, included in the author's and Mr. Cunnison's *Young Wage Earner* (ECONOMIC JOURNAL, December 1952), who left school at or soon after fourteen years of age and a further 489 physically and 301 mentally handicapped boys all, or most of whom, remained at school till sixteen. The methods and tests used are mostly those of the earlier study; and there is the same combination of full statistics with human understanding. The 2,139 boys here studied provide a good sample, wider than that of the earlier inquiry, but there is a slight unfavourable bias, owing to the exclusion of boys, of higher quality on the average, who stayed on at secondary schools after fourteen. There are certain complications. Compared with "ordinary" boys, fewer physically handicapped were delinquent (10.7% to 12.2%), but their convictions were more numerous (1.9 per boy convicted to 1.6). For while certain handicaps reduce mobility and therefore opportunity to offend, those convicted seem more liable to fall again than ordinary boys, and to be less responsive (Ch. V) to treatment. In consequence "relative success" of "some of the efforts to dissuade from further crime" (p. 152) has presumably been greater with ordinary, than with physically handicapped, boys. Records of the mentally handicapped are consistently worse than those of the other groups.

Professor Ferguson opens (Backgrounds) with an historical sketch of how present conditions developed. Three chapters deal in turn with each main group, applying tests as before of personal

qualities and scholastic abilities, health and physique, home and family circumstances, work and unemployment. Two further chapters—"Response to Treatment" and "General Conditions Arising from the Study"—discuss the groups collectively and comparatively. Among other points, it is interesting to compare the conclusion here reached that mothers' employment "out of the home appears to exert little influence on the incidence of delinquency" (p. 145), with the earlier finding of home environment rather above the average where mothers were at work. Again the contribution of the "broken home" to delinquency in juveniles was, as a rule, "relatively unimportant" (p. 63), while absence was to be preferred to the presence of a bad parent (p. 146). The influence of two World Wars and World Depression (1930-34) in increasing delinquency is rightly noted.

Multiplicity of causes, with addition of special problems of handicapped boys, is often marked. "Overcrowding and bad housing breed handicapped children and severely affect their employment in youth" (p. 77), and injury early in life "may have some association with the higher incidence of delinquency" (p. 79). More generally cause and effect are sometimes difficult to disentangle, whether, for example, blind alleys make lads unstable, or early instability leads to blind alleys. Professor Ferguson, however, skilfully indicates major influences. Among "ordinary" boys, "low scholastic ability" is seen as "the principal single factor" (p. 51), and delinquency is very pronounced among the lowest 10% (p. 119). Generally poor physique, especially stunted growth, seems more potent than specific handicaps. Blind-alley work, with frequent change of employer, is markedly injurious; and among those who "failed to continue an apprenticeship, delinquency rates were twice the average" (p. 32). Bad housing and overcrowding provided the chief environmental influence.

This new work of Professor Ferguson will provide valuable help in meeting an essential need. For "lack of basic information, lack of denominator, carries obvious risks, the danger of too easy acceptance of 'hunches' as soundly based facts" (p. 111). This necessary basis he himself has provided for Glasgow. His work, if in places comment might be rather fuller, is thorough and informative. Others, it is hoped, will make similar studies elsewhere.

N. B. DEARLE

*All Souls College,
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Le Service de Santé en Grande-Bretagne. By YVES VINCENOT.
(Paris : Armand Colin, 1952. Pp. 260. 900 Fr.)

M. VINCENOT has written a legal and social study of the National Health Service. In the first section he analyses the legal structure of the service and the story of its introduction, and devotes himself mainly to analysing the content of the new social "right" of the citizen to demand medical care of the community in contrast to the insurance principle of the other post-war Acts. He gives six reasons for the introduction of the service as it stands: first, because any attempt to have extended the panel system to the dependents of those previously covered would have left an invidiously small group out of the scheme; secondly, because the administrative cost of so doing would have been high; thirdly, because few can afford to pay for many kinds of modern treatment; fourthly, because of an emotional objection by many to money payments in medical matters; fifthly, because medical and economic efficiency both require a comprehensive system including all branches of treatment; and sixthly, because the Beveridge scheme required a free service as a basis for uniform benefits. M. Vincenot's sources omit any reference to Professor Titmuss's work showing the importance of the war-time social and population movements and the war-time need for medical treatment irrespective of personal means, as the real basis of the Health Service, and consequently far too much emphasis is placed on the importance of the Beveridge Report, giving the insurance principle an unlikely causative role in the introduction of the service (after all, Beveridge also assumed equal rents in another section of the Report) and also creating a false antithesis between the insurance principle and free services. The insurance principle itself was adopted solely because "*les anglais n'apprécient pas la charité publique; ils aiment avoir le sentiment de recevoir ce qui leur est dû*"; the nutty flavour of this remark can only be appreciated in the context describing the new social structure and the new social principles it needs.

In the second section M. Vincenot devotes himself to analysing the new legal position of the state-doctor and doctor-patient relationships, remarking that such an analysis must take into account social factors. It is a pity that apart from Statutes and statutory instruments he relies for his information mainly on 109 articles in *The Economist*. He misses the point that the cost of the Health Service must be analysed either as a real, a monetary or a fiscal burden. To claim that in 1950-51 too much was

being spent on the National Health Service, and then to complain that private charitable funds for medical purposes have diminished, or that salaries are too low to attract sufficient doctors, confuses all these levels of analysis. He nowhere points out that to get more doctors you have to train more, not necessarily to pay existing doctors more, nor does he consider how many people can be spared for medical purposes and the growth of ancillary professions. He neglects the real social problem of the growth of self-governing professions, largely employed by the State, controlling the expenditure of vast sums of money, although he considers each element of the problem separately, coming to the old irrelevant chestnut that the family doctor is a good but disappearing thing, a conclusion itself crying out for closer examination.

Altogether M. Vincenot's book gives a clear account of the service, especially useful for foreigners, and an entertaining whiff of the Bevan-Hill controversy, but it will disappoint those who look for a survey of the actual working of the service and its legal, political, social and economic consequences.

J. E. VAIZEY

*Queens' College,
Cambridge.*

Drink. An Economic and Social Study. By HERMANN LEVY.
(London : Routledge & Kegan Paul, 1951. Pp. 256. 21s.)

THE death of Hermann Levy in 1949 deprived us of a scholarly and fluent writer on economic and social problems. His studies (with Sir Arnold Wilson) on social insurance are now of mainly historic interest, but his early work on monopoly and more recent books on retail trade are likely to remain part of our current literature on these subjects for many years.

So is his book on *Drink*, left as an unfinished manuscript and edited with apparent success by Mr. R. P. Lynton. Few subjects are so beset by propagandist forces: "the problem has been hitherto dealt with by two directly opposing sides, the one linked up with the temperance movement and largely backed by the Churches, the other connected with purely private interests and designed to fight the former" (p. 5); and yet, while not attempting to conceal his own concern about the social problems connected with drink, Professor Levy has marshalled the facts and set out his conclusions with admirable impartiality. He blows gusts of cold air into the heat of the battle, and popular misconceptions fall like ninepins on either side.

The book is in three parts, of which the first two deal with the medical and social implications and the statistical analysis of the drink problem. What determines the individual's consumption of drink? Mainly "the desired narcotic effect, the support of social customs, and the illusions concerning the effects of drink" (p. 16). But they *are* illusions: the food and fuel value of drink is negligible, the "feeling of warmth" is deceptive, there is no evidence that it increases output, "medicated wines" have no medicinal effect whatever, even the "nightcap" is a delusion. Nevertheless, we need to remember the very simple fact that drink is primarily taken as a refreshment.

What about the social effects? The causal relationships are less obvious than we sometimes imagine. Drink may lead to disease, poverty, domestic unhappiness, crime or absenteeism; but these things are often the cause and not the result of excessive drinking, and our statistical correlations must be very cautious. Has the nation become more sober? The figures of consumption per head suggest that it has, but "averages hide the important fact that the maximum is a long way from the minimum" (p. 75). Convictions for drunkenness are deceptive: they may conceal a change of tactics or efficiency on the part of the police, or a change in the legal interpretation of "under the influence of drink." Again, figures of expenditure on drink "do not indicate what poverty is mainly caused by drink nor how the money would be spent if it were not spent on drink" (p. 94). Statistical pitfalls are made to yawn before us at every step. But Professor Levy has no doubts about the seriousness of the social evils associated with drink or the need for the State to assist in their suppression. After pointing out that the demand for drink may be income-elastic, at least in the short period (a general improvement in social conditions does not lead automatically to more drunkenness, but "sharp fluctuations of prosperity and distress may certainly have a direct influence on drunkenness" (p. 86)), but is probably not price-elastic, he suggests that "the State should not just rely on sources of taxation from which it can most easily get money, but link up the policy of public finance with that of economic and social welfare" (p. 103). This, of course, opens up several interesting possibilities. But the argument peters out, and we are left wondering what brand of welfare scheme he had in mind.

Part Three discusses the moderating and restrictive influence of the temperance movement and State legislation on the one hand, and the attempts of the trade to increase consumption of

drink and yet maintain respectability, on the other. The trouble is, of course, that no amount of legislation can determine the borderline between moderate and immoderate drinking; with the result that Government efforts to restrict the latter inevitably curtail the former, and the trade's efforts to expand the former inevitably facilitate the latter. The analysis of the resulting contradictions in trade policy and propaganda is perhaps the most fascinating part of the book. But here, as elsewhere, the analysis is more exciting than the recommendations. Professor Levy thinks prohibition unworkable; he favours all legislation which makes it more inconvenient for people to drink; and he would like to see the public houses set free from brewery control, so that they may develop as restaurants on the continental pattern and social centres where darts and meals and music are not simply aids to increasing the consumption of drink, but are the main attraction. The enormous financial implications of this, both for the breweries and for the "free houses," are not discussed.

WALTER HAGENBUCH

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Strikes—A Study in Industrial Conflict. By K. G. J. C. KNOWLES.
(Oxford: Basil Blackwell, 1952. Pp. xiv + 330. 42s.)

THIS book, relating mainly to British experience between 1911 and 1947, deals with strikes in general rather than with particular strikes. It examines the nature of strikes, influences affecting the use of the strike weapon, legal and other methods of control of strikes, and the causes and consequences of strikes. Strike statistics are examined in relation to other series of economic statistics, and are analysed by industry, by season, by region, by objective, by character, by result and by various combinations of these factors. The difficulties of determining any close correspondence between strikes and any single economic series emerge clearly from the analysis. The tentative conclusion is, however, reached that, during the period under examination, the level of employment has probably had most bearing on the worker's life, that a high level of employment has been a permissive cause of strikes, and fear of unemployment a main deterrent. The industrial and regional analysis clearly justifies the author's conclusion in regard to propensity to strike that "it matters less where you live than what you do for a living."

As a compilation and analysis of statistical material alone,

this book is unique and invaluable in providing a means of reference. But it is much more than that, and its main interest as current reading lies in the extent to which it provides an explanation of the virtual disappearance of the strike in this country. Whether or not that is a lasting condition, whether or not it is even an entirely healthy condition, whether or not it is a mere bottling up of discontents which break out in other ways as factors hindering industrial efficiency, that is what in effect has come about. Strikes—actual stoppages of work—had, even long before the Second World War, ceased to be more than a negligible factor. The period since the end of the war, when by all earlier criteria conditions were favourable for strikes, is in many ways the most remarkable. The author's conclusion is that for many years now strikes "have been less and less an instrument of Union policy, and increasingly a weapon of rebellion against Union authority—and sometimes State authority."

The question of how this has come about provides the occasion for the author to consider in outline the changes, mainly of an institutional character, which have affected the conduct of industrial relations over the period he examines. The growing centralisation of trade unions and employers' associations and of collective bargaining which has developed in this country has improved relations and reduced militancy. The author suggests that it is at the top level, where such negotiations take place, that the *rapprochement* between employers and workers has been mainly evidenced. Agreement at the centre has not always carried with it agreement at the periphery; and so we have the phenomenon of the unofficial strike—of little significance in the picture of industrial relations as a whole, but of potential serious import for the trade-union movement. In connection with unofficial strikes it is refreshing to find the author not accepting at their face value all the usual explanations and excuses for these outbreaks which are put forward on very flimsy evidence. In particular, he examines in a critical manner the suggestion that procedural delays involved in the centralisation of industrial negotiations are a prime cause. Time consumed because of plain failure to agree must, as he points out, be distinguished from administrative delay; and irritation ascribed to delay may simply be due to the fact that the eventual settlement is adverse.

The part played by arbitration in lessening the use of the strike is also examined, but it must be remembered that the book was written before the National Arbitration Tribunal was replaced by the Industrial Disputes Tribunal. The author's conclusion is

that arbitration, whether or not it produces equity, certainly obviates trials of strength. Arbitration, however, depends in essence on consent. The increased use of arbitration, therefore, is perhaps better regarded as a consequence than as a cause of reduced militancy in industrial relations. Voluntary arbitration, based on agreements to submit unresolved disputes to impartial settlement and to abide by the award, has been a notable feature of industrial relations in recent years, particularly in the nationalised industries. The suggestion (on p. 69) that compulsory arbitration has been introduced in these industries must surely be made by inadvertence; if not, it is certainly a novel use of a term already much misunderstood.

H. S. KIRKALDY

Queens' College,
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Comparative Labor Movements. Edited by WALTER GALENSON.
(New York : Prentice-Hall, 1952. Pp. xiv + 599.)

THIS book consists of a short introductory article by Professor Walter Galenson and seven studies relating to the trade-union movement in different countries as follows: Great Britain, by Mr. Allan Flanders; Scandinavia, by Professor Galenson; Australia, by Mr. Kenneth Walker; Germany, by Professor Philip Taft; France, by Mr. Val Lorwin; Italy, by Professor John Clarke Adams; and Russia, by Mr. Isaac Deutscher. It is not stated whether any common plan was laid down as a basis for the preparation of the studies, but the editor, in his introduction, tells us that the authors "were accorded considerable latitude in emphasising what they thought important." Mr. Deutscher's study of Russia appears to be identical, except in minor details, with his book *Soviet Trade Unions* published by the Royal Institute of International Affairs in 1950 and reviewed in this JOURNAL in March 1951. Mr. Flanders' study of Great Britain, with slight modifications and additions, has recently been published in this country in the *Hutchinson's University Library* series under the title of *Trade Unions*.

Whatever the plan of publication, the authors have certainly taken full advantage of the latitude accorded to them in emphasising different aspects of the subject. Some of the studies, notably those on Germany and Russia, are largely historical. Others, for example, those on Italy and France, deal in considerable detail with the tangled tale of trade-union relations with

political parties. Others again, especially those on Great Britain and Scandinavia, concentrate rather on the present structure and status of the trade-union movement and the machinery and methods of industrial relations. The reasons for differences of treatment are in some cases inherent in the nature of the case; sometimes, however, they are less obvious.

It is understandable, for example, in view of the part played by trade unions in its administration, why references should be made to the principles of social insurance in Russia. It is less easy to understand why facts and figures about coverage, contributions and benefits under social security in Italy are given in some detail, while the subject is not dealt with at all in Britain, apart from an incidental (and incorrect) statement in connection with trade-union finance that some trade unions pay out the state unemployment benefit to their members. Again, the study on Italy lays some emphasis on the labour movement in the fascist period and the events which led up to it. One might have expected at least as full a treatment of the National Socialist period in Germany and the collapse of the trade-union movement before Hitler. Instead, however, the whole of the events from 1933 to 1945, as they affected the labour movement in Germany, are dismissed in less than a single page. Another subject which receives very uneven treatment between the studies is the attitude of trade unions towards pacifism and action in face of threats of war.

The editor suggests certain conclusions which can be drawn from the studies, or at least certain lines of further inquiry which might fruitfully be pursued. He finds evidence, for example, of an irresistible tendency towards industrial organisation as the basis of trade-union structure. The resistance of craft interests, he concludes, eventually gives way, either gradually, as in Britain, or suddenly, as in the post-war resurgence of German trade unions after their collapse before the Hitler regime. But there is a deviation from pattern represented by the powerful general unions in Britain and Denmark which vitiates any such general conclusion. He draws attention too to the point made by Mr. Deutscher that it was the overwhelmingly agrarian nature of the Russian economic society at the time of the Bolshevik revolution and the virtual non-existence of stable trade unionism that permitted the seizure of power by a handful of men. But how does such a conclusion fit in with the collapse of the German trade-union movement before Hitler? In discussing labour ideology, he points out, as the studies show, that every

labour movement has been exposed to numerous hues of political radicalism, and he concludes that one doctrine usually comes to the top and not the same one in every country. Here again, however, the present turmoil in the French and Italian trade-union movements suggests that such a conclusion is by no means of universal application or is at least premature. A more definite conclusion—and perhaps the most definite one to emerge from the comparative study which the book permits—would be that, unless one doctrine does come to the top sufficiently to submerge all others, the effect of political affiliations on the industrial effectiveness of trade unions is truly devastating.

It is, however, perhaps an injustice to the book, despite its title, to endeavour to press too far the search for comparisons and conclusions. Each of the studies is in itself excellently presented and full of interest as throwing light on the political and economic situation of the country concerned. If none of them brings out a great deal that is directly comparable with the others, it is for a reason that the studies themselves clearly show. They are in fact dealing, not with the same institution in different countries, but with an institution which differs from country to country in its origins and in its objects, in its status and in its structure. The main value of the present book, in bringing the studies together in a single volume, is to show some of the reasons for these differences.

H. S. KIRKALDY

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Administering Changes. A Case Study of Human Relations in a Factory. By H. O. RONKEN and B. R. LAWRENCE. (Boston: Harvard Graduate School of Business Administration, 1952. Pp. v + 324. \$3.50.)

THE Harvard University Graduate School of Business Administration uses the case-study method extensively to obtain first-hand information, and it is adopted by the research group on human relations which has been established within the Division of Research. In a Foreword to this book Professor Roethlisberger emphasises the constant changes which competition enforces on modern industry, including the designing of new products and the introduction of new machines and methods, and he points out that the effects of these changes on the day-to-day attitudes and relationships of work-people are still not sufficiently

understood. To gain a better insight into the problems which such changes create for management in its relations with work-people and among the work-people themselves is the purpose of the research described in this book.

The investigation is in the direct line of succession from the studies of social groupings in industry initiated by the late Elton Mayo, to whom the authors pay tribute. People in a factory form social systems in which technological changes cause disturbances leading to misunderstandings, suspicions and conflicts. These, rather than the new products or processes, make technological change difficult. How to remove these misunderstandings, suspicions and conflicts, which slow down production, has not hitherto been given enough attention by management. The problem is to maintain or quickly to restore stability in social relationships when technological changes are made. The solution of this problem is essential if co-operation is to be secured and work-people are to find satisfaction in their work.

The investigation was undertaken in one of the plants of an American company producing electronic equipment, where the authors made first-hand observations during a period from January 1949 to the spring of 1950, each of them making more than a hundred visits to the plant and staying from one to five hours each time. They concentrated on the changes in human relationships involved in the designing and manufacturing of a new product (the Amicon tube). They made clear at the outset that they were collecting teaching materials, and they seem to have won the confidence of the small number of work-people and supervisors associated with the tube, who talked to them freely about their attitudes to one another.

Much of the book consists of statements made to the authors by these work-people and supervisors about their attitudes whether of conflict or co-operation. At first four people, including two industrial engineers, were made responsible for design work on a new model of tube, and as the work was experimental and intricate they had the stimulus of trying out new ideas and were soon working in friendly co-operation. Then the higher management, thinking the experimental work was completed, gave instructions for production to begin, but many of the tubes proved to be defective, and a series of misunderstandings and conflicts arose between the new workers on production, including the foreman, and the people who had done the experimental work on the tube. There was also hostility between the industrial engineers, who, for special reasons, had done the experimental work, and the develop-

ment engineers, who were usually made responsible for the design and experimental stages of new products. Because they had not designed the tube, the development engineers criticised it and tried to show that it was unsound. Months of wasted effort, prejudice and conflict resulted, during which little progress was made.

A detailed survey is given of these conflicts, which were due largely to individuals or small groups having their own assumptions about their status and responsibilities, and who felt frustrated and antagonistic when they were not recognised by other people. Jurisdictional fights resulted from these incompatible assumptions, and different "logical" deductions were drawn from the same facts by different individuals. Effective co-operation did not take place until some of the people began to see and respect the points of view of others, to practise deliberate toleration of different attitudes, and to establish complementary relationships. How the processes by which these changes were started is not clear, as the authors admit.

The investigation shows that "resistance" by work-people to change is not so much because they dislike working on a new product or using new methods, but because these changes involve breaks in established understandings, loyalties and habits in the social group. Close connection is revealed between the attitudes of members of a group towards one another, towards their supervisor and towards "outsiders" and the amount of work they do and the satisfaction they get from it. Ability to work with other people is seen to be as important as technical knowledge, and sometimes more important. When the foreman acted to improve relations he got better results than when he concentrated directly on output. Various lessons useful to management can be drawn from this very human story.

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Men in Business. Essays in the History of Entrepreneurship.
Edited by W. MILLER. (Cambridge, Mass.: Harvard
University Press (London: Geoffrey Cumberlege), 1952.
Pp. ix + 350. 32s. 6d.)

Men in Business, a collection of essays, is a publication of the Research Center in Entrepreneurial History at Harvard. This center, established in 1948, derives its chief theoretical impetus from Joseph Schumpeter, who attributed to the creative entrepreneur much of capitalist progress. Since 1942 the Committee
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on Research in Economic History of the Social Science Research Council has discussed definitions of entrepreneurship which would cover the wide range of changing circumstances in which the individual business-man operated. Perhaps Mr. Lamb, in the present volume, gives the most concise definition of entrepreneurship as "that form of social decision-making performed by economic innovators" (p. 90). But others active in charting the field have emphasised adaptation to change as well as innovation, and one writer (George Herberton Evans, Jr.) has even spoken of "public entrepreneurship." Profit-making is not considered central to the definition. This volume manifests a broad definition of the term by including two essays about men whose entrepreneurial plans failed. In fact, the volume contributes little to the theory or definition of entrepreneurship.

The pioneers in the field considered entrepreneurial history a middle-way, and a much broader path, between the case-study method employed by the School of Business Administration, which tended to isolate the business-man from the society in which he functioned, and the economic historian, who ignored the individual business-man. Thus while the concept of entrepreneurship adopts the Schumpeterian assumption that individuals have shaped and changed their environment and returns to an emphasis upon the individual's role in history, the researchers in the field maintain that much can be learned about a given society by studying its entrepreneurs and that the influence was undoubtedly two-way, society forming the business-man, who in turn transformed society through economic innovation. Much stress is laid upon co-ordinating the work of scholars in several fields of the social sciences, and the present work includes essays by historians, economic theorists and one economic sociologist.

The problem of method has been difficult. The basic assumption of entrepreneurial history point to studies of individuals, and seven of these eleven essays are mainly biographical sketches which focus upon an innovating period in the subject's life. These essays are most welcome, for they treat hitherto obscure men, and contribute fresh historical material. For the most part they are based on previously unused manuscripts. A variety of "types," nationalities and periods are touched upon. One article deals with a French and another with a Canadian business-man; the others concern Americans. Limited space prohibits a discussion of each. Although one finds variety, no effort has been made to choose "representative" men, and, of course, no synthesis is attempted. Mention should be made of Douglass North's im-

portant article on innovations in life insurance in the late nineteenth century made by Henry B. Hyde and others, who by introducing tontine policies and aggressive marketing enabled their firms to amass financial reserves for industrial investment.

Other approaches besides the individual biography are suggested in the volume. Charles Sawyer's essay recommends a comparative method, introducing it by a comparison between French and American business-men with respect to recruitment, motivation and behaviour. He explains the differences he sees chiefly in terms of the remnants of feudalism in French society. Mr. Sawyer tends to consider American entrepreneurship the norm: American was free of the "negative drag of earlier European ideas and forms" (p. 22). If economic innovation be the chief criterion of entrepreneurship, one would like to see Germany in particular fitted into this analysis. Sawyer's conclusion that "the American institutional system . . . resulted in relatively open access to business careers, and a natural gravitation of talent and energy, as well as status to them" (p. 22) is not altogether consistent with the findings of Miss Gregory and Miss Neu in another article in the volume. Nor does M. Dervieu in David S. Lande's article follow Mr. Sawyer's pattern for the French business-man.

Robert Lamb suggests that the local community and its kinship groups should form the core of entrepreneurial study and should be related to regional, national and world "models." He provides data to reinforce our awareness of the importance of family groups in the early American cotton industry, but in his interest in models and categories, he fails to relate these groups in more than a circumstantial way to the society in which they moved.

The two essays which draw upon Max Weber's theories of bureaucracy and management are to my mind the most stimulating and suggestive. Mr. Chandler's article analyses Henry Varnum Poor's warnings that the financier as railroad executive posed dangers to the technical efficiency and financial soundness of the roads. And William Miller traces the rise of the bureaucratic manager and the decline of the entrepreneur in American business through a study of the early careers of a sample of business managers in the 1900-10 decade. This article and the one by Miss Neu and Miss Gregory are the only ones in which the nature of the study makes possible the shedding of new light on businessmen as a group. The articles on individuals provide interesting historical material, but this type of study has not yet been carried

far enough, if it is indeed a fruitful method of approach, to allow for new generalizations on the nature of entrepreneurship.

CHARLOTTE ERICKSON

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Mr. Rank. A Study of J. Arthur Rank and British Films. By
ALAN WOOD. (London: Hodder and Stoughton, 1952.
Pp. 288. 20s.)

MR. WOOD, one feels, would find it difficult to write a dull book on any subject, least of all on the film industry. He combines a racy style with an unwillingness to suppress a good story or conceal a good prejudice, and his present book never fails to be entertaining. For an illustration of Mr. Wood's method of attack one need look no farther than the first page of the book, where he manages to find space for no less than two of his prejudices. First, he disapproves of middlemen:

"In the British economy the middleman is usually the man who grows rich; and you could hardly find a more typical middleman than a miller, except that he performs a much more essential function than most."

Second, he is convinced that flour-milling is very dull:

"The present writer, in point of fact, holds the opinion—though Mr. Rank himself would strenuously disagree—that flour-milling must be about as dull, boring and uninteresting an occupation as any man could choose for his livelihood."

These quotations give, I think, a fair example of Mr. Wood's style, but if they also give the impression that Mr. Wood has not set out to write a serious book about his subject they are to that extent misleading. It is evident, both from the content of the book and from the acknowledgements made by the author, that he has made considerable efforts both to obtain information and to verify its accuracy. Nearly all his material, incidentally, was obtained direct from persons with first-hand knowledge of events. This no doubt helps to explain why one feels that Mr. Wood is more successful when dealing with the character and motives of individuals than with the economic and political problems of the film industry.

It is not surprising, in view of his lack of interest in flour-milling, that Mr. Wood does not spend much time on an account of Mr. Rank's career before he became involved in the film industry. Mr. Wood disposes of this, and of Mr. Rank's family

background, in two short chapters at the beginning of the book. He then gives an account of "British films before Rank" and describes how Mr. Rank's entry into the film industry was prompted by his interest in religious films. Mr. Rank soon widened his film interests, but in Mr. Wood's view the sincerity and strength of Mr. Rank's religious convictions have been among the most important factors influencing his actions throughout his film career.

Most of the rest of the book is taken up with a chronological account of the history of the British film industry since 1934, and particularly with the part played by Mr. Rank and the companies under his control. Even Mr. Wood is unable to put much life into the immensely complicated story of the grouping and re-groupings that accompanied the growth of the Rank organisation, but he compensates for this with his entertaining accounts of film personalities and of the making of individual films. It soon becomes clear that, although Mr. Wood dislikes financiers generally and disagrees with Mr. Rank's views on "almost every conceivable point," he has acquired a liking and respect for Mr. Rank personally. Mr. Rank's own contribution to the growth of the British film industry can, Mr. Wood concludes, be defined with some precision. He provided the money at a time when no one else would do so, and, realising his lack of knowledge of films, he gave his producers a free hand. Too free a hand, it might be thought, in financial matters, but as Mr. Wood emphasises it is not easy to reconcile financial prudence in film making with the desirability of giving artistic freedom to producers and directors.

Mr. Wood is at his most controversial in his concluding chapters when he vigorously attacks the film policy pursued by the British Government during the last few years. Although he over-stresses his case, there is no doubt that much of his criticism is effective. The main value of this book, however, is to be found in the light it throws on the detailed problems of film-making and on the characters of the leading personalities in the industry rather than in its conclusions on matters of high policy. If one wants a dispassionate treatment of these matters one can, after all, find it fairly easily elsewhere. For a lively admixture of controversy and entertainment, however, one could do worse than *Mr. Rank*.

AUBREY SILBERSTON

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Gewinnbeteiligung. By HANS BAYER. (Vienna : Springer, 1952. Pp. vi + 164. 20s. 6d.)

PROFIT-SHARING has long been a much-discussed topic both in American economic literature and in French. In the German-speaking world it has remained a neglected subject, not least because there were fewer practical attempts at profit-sharing. The present monograph by Professor Bayer fills a gap for readers in Austria, Germany and Switzerland. But it will also be read with profit by people in other countries already familiar with the subject.

Professor Bayer's book treats profit-sharing in its wider context. Avoiding mere description and accumulation of a mass of technical details, so frequent in this field, he spreads out in three directions : first, he puts profit-sharing into its proper place as one aspect of the bigger question of labour-management relations in general ; second, he is always at pains to point out that the success of profit-sharing is not an isolated problem of a firm or an industry, but depends on the general economic and social framework in which it takes place ; third, he tries to support the conclusions derived from experience by giving them a theoretical basis.

This wider approach does not prevent Professor Bayer from offering an extensive and up-to-date view of the actual state of labour-management relations and profit-sharing in a number of countries and of the characteristics of some of the more widely accepted profit-sharing systems. Three out of the six chapters of the book are devoted to this. Since these concentrate on straightforward information, the rest of this review will deal exclusively with the three remaining chapters.

Chapter IV deals with the theory of profit-sharing. This in itself is to be welcomed where mere description or enthusiastic partisanship are the rule. Professor Bayer tries to work out the relation between profit-sharing, on the one hand, and both income distribution and productivity, on the other. He studies these questions on the basis of three models : a simple, centrally directed economy (Wieser's *einfache Wirtschaft*), perfect competition and pure monopoly. Unfortunately, he dismisses the more realistic models of monopolistic competition as theoretically less tractable. The investigation, perhaps not always as rigid and far-reaching as one would wish, arrives at the result that there can be no profit-sharing under perfect competition, as there are no "extra" profits to be shared, but that there is scope for it in dynamic com-

petition (in a Schumpeterian sense) and in monopolistic competition and monopoly. On this theoretical plane the possible advantages of profit-sharing (if it is genuine and not just another form of paying the usual wage) appear to be increased incentive, reduction of the bargaining disadvantage of labour, a mitigating influence on speculative investment booms and subsequent recessions by shortening the lag of wages behind profits in times of expanding trade. As the main danger of profit-sharing the author cites the increased likelihood of combined monopolistic fronts of employers and employees.

It will be clear that Professor Bayer has not created a fully fledged theory of profit-sharing, but rather has pieced together a number of theoretical reflections regarding it. What one misses (and what could be an important task) is a more specific and detailed investigation into some special problems connected with profit-sharing. Thus, it would be interesting to have an analysis of the employer's demand function for labour and of his output function under conditions of profit-sharing, the results being modified by considerations about various long-term motives (stabilisation of labour force, diminution of strikes and so on). One might also try to find how far profit-sharing agreements (such as the frequently cited Scanlon Plan) point towards an entrepreneurial thinking in terms of total costs, total revenues, total wage bills, rather than in the marginal terms usually assumed in economic theory.

In the introductory chapter, in Chapter III ("Hopes and Fears with Regard to Profit-sharing") and particularly in the final chapter ("What is to be Expected from Profit-sharing?") Professor Bayer combines the ideas he has thrown out in the descriptive and theoretical chapters with much good common sense and sound judgment to put the problem of profit-sharing into proper perspective. His view of profit-sharing not as an isolated phenomenon but in relation to the general economic and social background saves him from falling into the easy enthusiasm of some of the apostles of profit-sharing systems. He can thus dispose of some of their exaggerated claims, such as that profit-sharing would end the class struggle, which has its roots too deep in social and economic power relations to be abolished by mere reform of management and wages (p. 138); and he is able to see through some of the humanitarian arguments put forward in favour of profit-sharing arrangements where the true motive is the maintenance of the capitalist system (pp. 62-4).

Professor Bayer himself takes a decided stand neither for nor

against profit-sharing. But he is of the firm opinion that it can work only under certain favourable conditions. On the factory level it requires management and an atmosphere of trust between management and labour (both employees and trade unions) which will arise only if ample information on the firm's activities is available. On the national level it needs the existence of a controlled or planned economy following a policy of "dynamic stabilisation." Only such dynamic stabilisation, which is absent in a free market economy, would ensure the full employment and the regular surplus for distribution without which profit-sharing is bound to meet with distrust or hostility. At the same time the necessary apparatus could be created to prevent the—technologically desirable—economic concentrations from turning into monopolistic bastions which could use profit-sharing as an instrument strengthening their monopolistic hold over the market.

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L'Économie Allemande Contemporaine (Allemagne Occidentale) 1945-1952. By A. PIETTRE. (Paris: M. Th. Genin, 1952. Pp. 641.)

THERE is a voluminous literature on the economics of Federation, but very little on the economics of Partition. They have been discussed after the break-up of the Habsburg Empire by Professor Frederick Hertz in *The Economic Problem of the Danubian States*; they are now being studied in the case of Germany by Professor André Piettre, Dean of the Faculty of Law in Strassbourg in a monumental publication (548 pages text and 100 pages annexe; maps, chronology, table of contents of text and of statistical abstracts cover another 30 pages).

What was Germany up to 1938 has now been cut up in six parts: Königsberg and North-east Prussia have gone to Russia; the region east of the Oder-Neisse line has been provisionally given to Poland; the Eastern Zone and the Eastern sector of Berlin is under Russian control; West Berlin, still a kind of four-power condominium, is loosely tied to the Bundesrepublik; the three Western Zones form the Bundesrepublik, and the Saar is economically incorporated with France.

Western Germany covers but 53.2% of Weimar Germany's territory; yet with Western Berlin, but without the Saar, she has a population of over 50 millions, and is, apart from Russia, the

most populous country in Europe. But a fifth of her people are refugees. The consequences of partition have been complicated and obscured by cuts in interzonal trade, and by contraction of commercial transactions with eastern neighbours and Russia. The re-vamping by the Allies of Western Germany's industrial war potential through breaking up banks and industrial combines in order to destroy "excessive economic power" had made a fully satisfactory analysis very difficult.

Monsieur Piettre has set himself the task of answering the question, whether this truncated Germany is viable. He analyses in a succinct introduction the growth and the structure of pre-war Germany. He proceeds to describe in a first part "Vanquished Germany," the break-down of the Third Reich, partition, reparations, and the deliberate destruction of the pre-war industrial set-up. The main part of his book, "Resuscitated Germany," covering nearly 300 pages, deals with what has been called the German miracle, the recovery of this devastated and mutilated country, whose steel and coal production has already surpassed that of France plus the Saar. It was first and foremost due to currency reform. Since this was carried out by a foreign power, the timid tinkering, by which inflation is half-heartedly fought in parliamentary democracies, was avoided. The reform was more brutal than it need have been; it caused a good deal of unemployment and pauperised large strata. But it saved the country. It might have failed, had the Bank Deutscher Länder not pursued an orthodox monetary policy, and controlled credit when needed. Monsieur Piettre discusses the repercussions of this policy on private credit, public finance, industrial developments, capital investments and agriculture, on population, refugees and unemployment. His text is accompanied and interspersed by 238 carefully selected and well-set-out statistical tables (there are no less than seventy-eight items in the annexe, many of them statistical). They corroborate it without making it cumbersome. It cannot have been quite easy for Monsieur Piettre to retain a very high degree of impartiality. For at the bottom of his mind he dislikes the restless rhythm of German economic life, which seems to him to aim at power but not at *le bien-être*. He would feel happier, had recovery not been complemented by a policy of economic liberalism. He rightly blames Germany for the absence of economic liberalism in the past, but regrets her successful present-day conversion to it, since it does not conform to the Keynesian gospel. He justly points out that, but for American help, it could not have succeeded. Western Germany actually received about \$4

milliard under various heads. But she was not the most-favoured beneficiary of United States largesse. About \$6 milliard went to the United Kingdom, who can hardly claim to have put them to better use.

A third part of about a hundred pages deals with "Associated Germany." It winds up with a cautious discussion of the Schuman Pact. This caution is well justified. Before the impact of the plan can have been felt, continental steel production has risen by leaps and bounds, and though German coal output is somewhat lagging, France's main grievance against economic geography is on the way of being removed: if the new processes of coking Saar and Lorraine coal turn out to be commercially successful, France's much-lamented dependency on Ruhr coke will have gone, and with it her strongest motive for proposing the Schuman Pact.

Monsieur Piettre's study is a credit to French scholarship. It provides an almost perfectly laid-out mine of information, from which future inquirers will dig vast masses of knowledge. André Siegfried has prefaced it by a short brilliant introductory sketch, which plainly demonstrates that the partition of Germany is pushing back the frontier of Europe to where it stood a thousand years ago. The question, whether a Continental European Union can replace this loss of half Europe, has not yet been answered.

M. J. BONN

London.

The Ruhr. By NORMAN J. G. POUNDS. (London: Faber and Faber, 1952. Pp. 283. 25s.)

THE general industrial character of few areas of western Europe is more widely known than that of the Ruhr. Equally, however, it is certain that the geographic and economic complexity of this great industrial region of Germany is appreciated only by a few. Professor Pounds' latest volume is devoted to a detailed study of the "historical and economic geography" of the region known as the "Outer Ruhr" and of the much smaller area within it, generally described as the "Inner Ruhr." The "Outer Ruhr" includes the great expanse of country lying between the River Lippe in the north and the Wupper and Ennepe valleys in the south, extending westward beyond the Rhine to include Krefeld and eastward to Dortmund and Unna. Most of this region, with a population of some 7 millions, is predominantly agricultural, but within it there are several highly concentrated industrial

areas. Of these the greatest is the "Inner Ruhr," defined as the small area of some 200 square miles stretching for 33 miles along the valley of the Ruhr from Duisburg in the west to Dortmund in the east. It is this area with a population of almost 4 millions which constitutes the centre of the Ruhr region and indeed of western Germany. It is unfortunate that the reader of this study must persevere until he reaches, at p. 218, the chapter on problems of "social" geography of the Ruhr before he obtains any clear notion of the precise geographical boundaries of the region to be investigated. Again, although the volume includes many good historical and special-purpose maps, the omission of a map of the ordinary Ordnance Survey type to depict the general physical features of the region is a serious disadvantage, particularly to the general reader.

After a brief but lucid introductory survey of the geographical and geological peculiarities of the region and of the historical significance of the Ruhr in the economy of Europe, the study proceeds first to consider the industrial history of the region at three distinct periods, namely the beginning, middle and end of the nineteenth century; secondly, to examine the nature and functioning of the region at the present time; and, finally, to assess the role of the Ruhr in the politics and economy of western Europe. In the historical chapters there is a wealth of information. The development of the iron and steel industry is traced from the craftsmanship of the sword-makers of Solingen to the industrial empires of Krupps at Essen and Thyssen at Hamborn and Mülheim; the growth and northward expansion of the coal industry can be followed from mediæval working of outcrop coal measures along the Ruhr valley to the recent grant of coal-working concessions north of the River Lippe; and the importance of the textile, coke, gas and electricity industries, of population and settlements and of the transport system is reviewed in a series of interesting sections. The chapters dealing with the present-day economy of the Ruhr investigate in greater detail the position and influence of the coal and iron and steel industries, the intricacies of the transport system and, less thoroughly, urban geography, water supply, population and land use, which are classified as "problems of social geography." The magnitude and resilience of the industries of the Ruhr are made abundantly evident. Thus, the output of coal, reduced from the peak level of 130 million tons in 1939 to 33 million tons in 1945, had revived to 103 million tons by 1950. Similarly (but it is necessary to search an earlier section for the facts), the pre-war steel output of the Ruhr, amounting to over

15 million tons a year had been reduced to insignificance by war-time destruction of plant and post-war dismantling of equipment, but has already exceeded 11 million tons a year, which was the level of production permitted by the Allied powers for 1949. Further, the bomb-damaged cities are being rapidly rebuilt, and the population increased by the influx of refugees, has adapted itself by wider dispersion to the rural areas within the "Inner Ruhr" area. Dispersion to the greater Ruhr area has been limited by the inadequacy of the transport system. In a final chapter Professor Pounds discusses the economic and political role of the great German industrialists before the First World War and in the inter-war period, the problems of the international control of the Ruhr and the place of the Ruhr in the European economy. He stresses the interdependence of the Ruhr and the world outside it, indicates the economic importance of the area's near monopoly of coking coal and coke, and argues that to limit the output of coal from the Ruhr or reduce its exports is to injure not only the economic well-being of Germany but also of the rest of Europe.

The modern tendency to study geography in combination with a variety of other subjects has produced a strange but interesting progeny of works which cannot be classified as geography, history, economics, sociology or politics but which contain something of all. This study of the Ruhr is certainly among the best of them.

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United States Economic Policy and International Relations.

By R. F. MIKESELL. (London: McGraw-Hill, 1952. Pp. vii + 341. 40s. 6d.)

THIS study of the United States' economic policies and their effect upon other countries is divided into three parts: a short survey for the period 1919-39; a single chapter dealing with the war period 1939-45, and a detailed discussion for the period 1945 onwards. The chapters dealing with the inter-war period give a useful account of the United States' financial, investment and commercial policies of that time. The chapter (Ch. 7) devoted to policies during the recent war contains brief references to the United States' war policies, her defence programme, Lend-Lease, U.N.R.R.A. and price control. The bulk of the book is devoted to the United States' economic policy and her interna-

tional relations since the war. The writer starts this part of his study with a full analysis of the United States' international monetary policy; he considers exchange rate and gold policy, the question of credits for the stabilisation of foreign economies and the general question of international investment. Following on this last an account is given of President Truman's "Doctrine," of the Marshall Aid programme and the O.E.E.C. Finally, the last two chapters are devoted to an account of the United States' post-war commercial policies and defence policy.

Professor Mikesell's account of America's international monetary policy is interesting and enlightening. The subject is treated carefully and in a live manner. A number of important points are clearly brought out. For instance, the author stresses that the United States, as the world's largest creditor, must see to it that changes in her net capital exports are accompanied by appropriate shifts in her current account, if world stability is not to be endangered. He also points out that after providing (for perhaps a very long period) net capital exports on a substantial and increasing scale, she will have ultimately to be willing to receive net merchandise imports, to take payment of her accrued dividends, just as Britain has done. European readers will appreciate the clear vote cast in the book in favour of a generous policy towards Europe. Nor does the writer fail to give a forceful criticism of United States' tariff policy. In accordance with this he makes a strong plea for a reduction in subsidies to American farmers. Another sound note running through the book is the emphasis on the interdependence of politics and economics. The student will not be allowed to muddle himself into thinking that the financial, investment or commercial policy of the United States, any more than that of any other country, can be independent of her political outlook.

Readers of the book, whether students in economics or the general public, will find that it contains an imposing catalogue of facts of the United States' economic policies and their effects on the world. But the presentation of these facts varies in quality. Chapters 9 and 10, dealing with post-war international monetary policy, make stimulating reading; while it is to be feared that the uninitiated, reading, for instance, the short account of the war-time period, might come away feeling that economics is a duller subject than it is.

In conclusion, a student wishing to learn about the impact of the United States' economic policy upon other countries will, if he persists, "find it all there." He will come away with a fair

understanding of the dominating influence of the doctrine of *laissez-faire* accompanied, however illogically, by a deep-rooted belief in the desirableness of tariff protection for American industry and agricultural subsidies. He will be familiar with the United States' crusade, through all her international negotiations, against "discrimination," leading to the relentless attack against Britain's Imperial Preference. He will be aware of the pursuit, both inside the United States and in some connections in the international field, of an anti-trust policy. Finally, the author brings out clearly the three big recent changes in United States policies which most strongly affect the other countries: First, the move away from isolationism which was consummated in the recent war. Second, the acceptance of American Government action in the field of foreign investment (leading to the acceptance of so-called "stabilisation loans" intended to restore political confidence, in addition to normal credits intended to pay for themselves). Third, the recognition by the United States Government of the rôle of Government control in foreign economies. Professor Mikesell indicates that the United States has recently taken a definite step away from the pure doctrine of *laissez-faire*. His book will tend to convince people at home and abroad not only that this step has been taken, but also that the United States Government should develop further a deliberate policy of economic aid to Europe.

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Residential Real Estate in Canada. By O. J. FIRESTONE. (Toronto: University of Toronto Press (London: Geoffrey Cumberlege), 1951. Pp. xxii + 514. 37s. 6d.)

Residential Real Estate in Canada is an attempt to consider the economic factors determining investment in houses in Canada from 1921 to 1949. The author sets out to examine changes in the total stock of houses resulting from demolitions, conversions, maintenance and new building, also changes in the number of houses owner-occupied and rented, respectively. He rightly argues that if he can get this information, he can estimate changes in capital invested in houses by an appropriate valuation formula. He could also investigate the relations between investment for owner-occupation and renting, respectively, and population changes, employment, government intervention and so on.

These are brave intentions, and Mr. Firestone equips his text profusely with tables of all the series he could possibly require,

while the whole of Parts III and IV and half of V are taken up with further tables and statistical notes. Examination of the latter, however, leads to disillusionment. Many of the imposing annual series in the tables in the text of numbers of houses, vacancies, types of tenure and the like are found to be based on the boldest, or rashest, estimates with very slender bases of fact. Until the last war information about these things was only available in Canada for the actual Census years, and there was no information in the Census about demolitions or conversions. Mr. Firestone filled in the gap on demolitions by generalising the figures for seven towns which happened to be available, making various modifications for rural areas. These estimates he applied to the censuses to give him estimates of gross intercensal increases in dwellings. He next used an index of annual disappearance of certain building materials to allocate these increases between each separate year; thus he created a hypothetical annual series of the number of houses built each year. I remain quite unconvinced that Mr. Firestone has succeeded in separating usage of materials for new house building from usage for other purposes; nor, incidentally, is any allowance made for changes in size or quality of houses. So far, of course, this is legitimate experiment, though for comparison with other series of industrial activity, the building materials series is as good as his "houses built" series.

But Mr. Firestone is more ambitious; he wants to get from the annual series of "houses built" other series for demolitions, vacancies, changes in owner occupancy and so on. The demolitions series he obtained as follows (pp. 393-4). The estimated ten-year totals of demolitions "were distributed annually according to an index which combined the trend of new dwellings constructed"—this itself is an estimate as described above—"with the trend of fire losses. It was reasoned that in times of large-scale building activity demolitions would be more numerous than in times of declining building activity. To take account of this factor the trend of housing completions was used. The other factor was concerned with destruction by natural causes. It was thought that fire losses might be indicative of such recurrent losses." The series for urban vacancies was based on annual data available for Toronto, Montreal, Winnipeg and Ottawa. The sample was reasonable in size, covering 31% of the urban population in 1941, but we are left in doubt as to whether it was truly representative, for we are told, "No population weighting was used since the two smaller cities covered were considered to be more representative of the balance than the two larger ones"

(p. 380). The annual series for changes in numbers of owner-occupied and rented houses were calculated simply by straight-line interpolation from the percentage distribution at the Census dates (p. 398)!

Thus the basic annual series are built on conjectured, or estimated, annual distributions of the whole intercensal changes, themselves estimated in some cases. Quite simple alterations in the assumptions made would imperil the whole pyramid and the relations between the series. However fascinating these statistical ventures may be, they cannot be used for statements of fact or for analysis of economic causation. They may be right, or they may be wrong. Mr. Firestone in his enthusiasm forgets this too often in the text, omitting to indicate in his tables that most of his figures are estimates, and he also quotes figures from his tables as though they were established facts, as for instance, on p. 53, "What happened in 1934 was that 25,900 houses that had been vacant in 1933 were occupied again, making it possible not only to put to use more rental accommodation than was obtained through new construction, but also to add 16,800 units to the total number of owner-occupied dwellings."

It is to be regretted that Mr. Firestone did not devote himself to more cautious handling of the considerable amount of genuine information that he has assembled in this book to which it is impossible to refer in a short review, such as budget data. He evidently has a great deal of knowledge about the house market which he could have used to advantage. On the other hand, all his ingenuity in constructing statistical series leaves the careful reader convinced that his data are quite inadequate for the problems with which he hopes to deal. I suspect that Mr. Firestone himself realises this, for the chapters concerned with his main subjects peter out when it comes to interpreting the series he has been at such pains to calculate.

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Coffee, Tea and Cocoa. An Economic and Political Analysis.
By V. D. WICKIZER. Stanford University Press (London,
Geoffrey Cumberlege). Pp. 497. 40s.)

THIS is an excellent book, cool, factual and well documented. It is the first of a series of studies of war-time management of food and agriculture in the Second World War, now being prepared under the ægis of the Food Research Institute of California

with financial support from the Rockefeller Foundation. The author has already published studies of pre-war control schemes for tea and coffee. He has now covered the war and post-war period up to the end of 1950, not only for tea and coffee but also for cocoa.

During the war tea and cocoa were mainly controlled from London, but coffee, apart from the Ministry of Food's contracts with British East Africa, was controlled in Washington. The New York price of Brazilian coffee was about 7 cents per pound in August 1940. It was stabilised during the war years at 12 cents, rose to 27 cents in 1948/49 and, after doubling in ten weeks at the end of 1949, has remained at about 54 cents during the last two years. The New York price of Accra cocoa, which was about 5 cents before the war, was stabilised at just under 9 cents during the war and, after removal of price ceilings in 1946, shot up to 50 cents at the end of 1947 and is now about 30 cents. By way of contrast Ceylon tea prices (f.o.b.), during twelve years of bulk purchase by the Ministry of Food, rose gradually from 15*d.* per lb. in 1939 to 32*d.* at the end of 1952. Since decontrol they have remained fairly steady.

Changes in world production, visible stocks and consumption per head that accompanied these price movements tell only half the story. More interesting is the account given of the intervention of Governments, the activities of producers' marketing boards and, in the case of coffee and cocoa, the struggle between buyers and sellers to influence the market in their favour. In August 1947 a New York market bulletin advised U.S. cocoa manufacturers to reduce their stocks and buy from hand to mouth "in order to drive prices down from 30 cents to 15 cents." But instead, "prices continued to rise, speeded by the covering of shorts who had expected a price drop," to an all-time peak of 55 cents in November 1947. The single seller of British West African cocoa, who was accused of rigging the market, had in fact refused to speculate and had sold steadily as supplies of new crop came forward. For the last five years the West African Marketing Boards have fixed their buying prices to producers just before the harvest, and have then taken the risk of the market. Part of their profits have been used to pay for the eradication of swollen-shoot disease. In November 1952 it was stated in the House of Commons that in the Gold Coast 15 million out of about 40 million affected trees had been cut out, but in spite of this production was likely to be maintained at current levels for the next five years.

Towards the end of 1949 there was a "famine scare" in the New York coffee market when spot prices doubled in ten weeks. This was partly due to exaggerated reports of shortage, but partly to bear speculators miscalculating the probable effects of devaluation. When grocers and panicky housewives started to over-buy and hoard, the disappointed shorts were caught in a squeeze. Senator Gillette charged that "somebody, somewhere, somehow had rigged the market." But again it appears that speculators who had made the mistake of selling short were partly responsible for rigging the market against themselves.

The author pays a tribute to British management of the tea trade during the war which he says "was notably efficient and effective." Tea was not fully decontrolled until 1952, when the Ministry of Food had been able to build up large enough stocks to enable a free auction market in London to function smoothly. There is little speculation and no organised futures market for tea; tea, being a leaf crop, is less liable to annual fluctuations in supply than coffee berries and cocoa beans.

The book ends with a discussion of future problems of production, consumption and marketing. National habits are slow to change. In 1949 \$2 million was voted by producers and traders for promoting United States coffee consumption, and in 1950 the tea interests countered with a campaign to cost \$5 million. In the U.S. the flavour of tea is often spoilt by the practice of "dipping a tea bag in warm water." In the United Kingdom it is all too common "to brew a concoction that has small right to be called coffee." Both tea and coffee are exposed to growing competition from soft drinks like Coca-Cola, world consumption of which has recently been estimated at 50 million bottles per day!

A major problem that confronts all three industries is the steady rise in costs of production. Large profits have been and are still being made; but rising labour costs, particularly in the tea industry, where they are linked with high prices for rice and clothing, are eating into profits. Tea as a plantation industry is more vulnerable to rising costs than cocoa, which is mainly grown in peasant economies, and attempts to enforce reduction in wages may provoke Government intervention.

The author discusses the question of international commodity agreements for tea, coffee and cocoa. He expects the pre-war Tea Regulation Scheme to continue in some form, but foresees little prospect of hammering out an agreed scheme of international regulation for coffee and cocoa. But national

marketing schemes in West Africa, Brazil and elsewhere are likely to remain; and if they can be managed on business lines without undue political interference—an important proviso—he thinks they may play a useful part in promoting efficiency, and stabilising and improving farmers' incomes.

E. M. H. LLOYD

London.

Works and Buildings. By C. M. KOHAN. History of the Second World War, United Kingdom Civil Series, edited by W. K. HANCOCK. (London: H.M.S.O. and Longmans, 1952. Pp. xvi + 540. 32s. 6d.)

THE difficulty in reviewing this work is precisely the same as the difficulty the author found in organizing it, namely that the enormous mass of material does not fit comfortably into any neat set of departmental or operational categories. Major Kohan has succeeded in making an intelligible picture by keeping clearly before his readers three main problems: first, the extent of the Departments' demands upon the building and civil engineering resources of the Kingdom; second, the growth of central control from the cold-war phase of the late 1930s to the end of the war; third, the relations between the industry and the government.

From the administrative point of view (that of preparation in good time for the next war), the core of the book is in pp. 69–238. The chaos during the First World War, remedial proposals and their result in the creation of the Ministry of Works in 1940, the limits on this Ministry's effectiveness in 1940–42, and the transfer of effective control to the Minister of Production in 1942 are lucidly set out, and constitute the factual, historical basis upon which the new War Book must be compiled.

It is not for the historian to suggest the lessons. The reviewer, however, is at liberty to ask the questions suggested by his author's excellent historical material. How effective or how silly was each of the specific controls imposed during the war? How far was each defeated by evasion, or how far did it create black markets? (this is only an alternative way of asking how silly they were). Major Kohan has many illuminating incidental comments, but one would like to see a general assessment.

Were the relationships ultimately established between the Ministry of Production, the Ministry of Works, the Service and Supply Departments, and the industry satisfactory and capable

of being run in immediately on the outbreak of a more total (if the solecism may be excused) war? Experience suggests that the anomalous position of the Ministry of Production, certain Departments' direct access to the Cabinet and the competition for materials common to "Works" and other forms of war-like production present administrative problems not yet solved.

How did the contracting methods of the Departments stand the test? In particular, what about the effects of the cost-plus method of payment in comparison with the price-for-the-job payment? And further, were the effects upon sub-contractors of the arrangements made with main contractors economical or not?

Have the implications of the following quotation (p. 4) sunk in?

"That the building industry without straining its resources could carry through whatever emergency programme was likely to be laid on it was never doubted by its leaders. Of deeper concern both to workmen and employers was the need to safeguard the long-term interests of their vast industry."

Admittedly, it is not the historian's business to attempt to answer questions such as these; indeed, the answers, if any, may well be official secrets. What the historian has charted (notably in Chapters XIII and XIV) is the constant struggle of expanding service and supply departments to nobble building labour and materials on a lavish scale, and (notably in Chapter XI) the efforts of old-established departments to evade control; and, against these resistances, the central effort, not always whole-hearted, to impose control. Not the least interesting part of the book deals with the alternation between "allocations" and "priorities" (Chapters IV and V).

This volume maintains the high standard of the previous volume of the Civil Series in respect of its exact and comprehensive detail.

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International Economic Papers, No. 2. Translations prepared for the International Economic Association. (London: Macmillan, 1952. Pp. 232. 15s.)

This volume, prepared with the help of grants from UNESCO and the Rockefeller Foundation, contains translations of ten

important papers that have appeared at various times in non-English-language periodicals, and are consequently difficult of access to the British reader.

All are recent papers, with two very important exceptions. Here is to be found the famous article by Jules Dupuit, so often mentioned in British works on history of theory, but so rarely read by British students, on "The Measurement of Utility of Public Works" (*Annales des Ponts et Chaussées*, 1844). Here also is Ladislaus von Bortkiewicz's "Value and Price in the Marxian System" (*Archiv für Sozialwissenschaft und Sozialpolitik*, 1907). With the same author's article on "The Correction of Marx's Fundamental Theoretical Construction in the Third Volume of *Capital*" recently made available by P. M. Sweezy in the Appendix to his edition of Böhm-Bawerk's *Karl Marx and the Close of his System* (New York: 1949), the English-speaking student of Marx now has available the principal theoretical contributions of this most original Marxian scholar. Bortkiewicz was one of the few "bourgeois" economists to take Marx seriously. Thoroughly "classical" (in Marx's sense) in his fundamental viewpoint, Bortkiewicz greatly admires Ricardo, and is not disinclined to take the labour theory of value as a starting point for the theory of price and income-division. Thus he accepts, provisionally, Marx's distinction between "value" (based on labour-time) and "price" (based on commercial cost reckoning). But, being a better mathematician than Marx, he submits the whole theoretical apparatus of *Capital*, Vol. III, Part II, to a thorough-going mathematical analysis, in the course of which he not only derives the correct formula for the transformation of "values" into "prices" but also throws light on the distinction between variable and constant capital (which he shows to be not a qualitative but a quantitative distinction, based solely upon differences in the period of turnover of capital) and upon the alleged tendency to a fall in the rate of profit. On this latter point, Bortkiewicz is able to demonstrate mathematically the incorrectness of Marx's assertion that the increasing physical productivity of labour necessarily reduces the average rate of profit (although he admits that under some circumstances this rate may fall). Incidentally, he points out Marx's error in assuming that the rate of surplus-value remains constant while the productivity of labour is increasing. Bortkiewicz's final conclusion is that "value" calculations are harmless, if conducted with mathematical accuracy, but unnecessary, since "price" calculations without the underpinning of labour "values" are adequate to

establish the reciprocal relations of prices, wages and the rate of profit.

The remaining articles are of various kinds. One, "Some Remarks on Economic Accounting and the Law of Value," by Tadeusz Dietrich from *Ekonomista* (Polish), 1950, links up with the preceding article, since it deals with the value calculations of a socialist state (e.g., the Soviet Union) and of a People's Democracy (e.g., contemporary Poland). It describes the "economic calculation" (Russian: *khozraschet*) of such an economy, based on economic planning and the conscious use of the law of value as opposed to the "commercial accounting" of a capitalist economy, based on profit-seeking and the "anarchy of production." As far as the reviewer can make out, the principle of socialist pricing is cost of production, based on wages cost at an assumed normal level of labour productivity, plus overhead cost, similarly determined, plus turnover tax, which redistributes the surplus product so as to "become the basis of economic progress and of the increase in the well-being of the working class." Interest on fixed capital is ignored. No indication is given here of the quantitative determination of turnover tax; but later in the same article there is a hint that selling price is determined independently of cost of production and that turnover tax adjusts the difference between the two.

Of cognate interest is Erich Preiser's "Property and Power in the Theory of Distribution" (from *Synopsis, Festgabe für Alfred Weber*, 1949). It attempts to show, in opposition to Böhm-Bawerk's *Macht oder Ökonomisches Gesetz*, that the distribution of property affects not only the personal but also the functional division of income, through the medium of elasticities of supply and demand. "Behind the elasticity of supply lies the power embodied in property."

"Risk and the Rate of Interest," by Pierre Massé (from *Économie Appliquée*, 1951) is a contribution to the theory of general equilibrium, with interest appearing at the three margins of lending, hoarding and investing, and with uncertainty explicitly taken into account. One *obiter dictum* of the author is notable: "We might even conjecture that in business matters the function to be maximised is not profit alone, but rather, a complex of profits, reputation and a good conscience."

"The Illusion of Fixed Costs," by H. A. A. de Melverda, from *De Ingenieur* (Dutch), 1950, argues from recent American data on railway transport to the effect that fixed costs are a much smaller proportion of total cost than has generally been supposed

and tend, in the long run, to disappear, so that ultimately all costs are variable. The author concludes that cost depends upon a large number of variables and that this multi-variability of costs is one of the causes that produce the illusion of fixity.

In "Principles of Production Planning" (*Giornale degli Economisti*, 1949), G. U. Papi develops a theory of investment based on the works of Fisher (*The Theory of Interest*) and of Keynes (*General Theory*). Among other things, he considers the place in production plans of the marginal principle and of discounting, unforeseen changes in prices and in the rate of interest, diseconomies of scale, and the compatibility of falling average costs with competitive equilibrium.

Kjeld Philip, in "Structural Changes in the Labour Market and the Mobility of the Wage Level" (from the Danish, 1951), discusses the formation of wages in a labour market characterised by large organisations of workers and employers and by statutory regulation. He considers four factors: shiftability (i.e., the possibility of employers' passing on wage changes in the form of price changes); substitution (of other factors for labour); changes in the level of employment; and changes in real wages.

D. J. B. Schouten, in "The Wage Level, Employment, and the Economic Structure" (Dutch, 1951) examines mathematically the effect of wage changes upon employment, using the concepts of the multiplier (both domestic and international), price flexibility, elasticity of export prices and taxation policy.

Finally, we have Eli Heckscher's Memorial Paper on David Davidson, read before the Swedish Royal Academy of Sciences in 1951. Besides giving a useful summary of Davidson's life and works, it provides interesting background information on the development of Swedish economics during the late nineteenth century.

In a work of this kind, where separate articles have been translated from several different languages, problems of transliteration are particularly difficult. Thus, Russian names appear in German dress (e.g., Shisn for Zhizn, p. 53, n. 118) and in Polish dress (Dietrich, *passim*). Nevertheless, the editors should aim at consistency. In an English book the English convention for transliterating Cyrillic should be observed.

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NOTES AND MEMORANDA

CETERIS PARIBUS FOR SUPPLY CURVES¹

§1. In any empirical study of economic phenomena, such as partial equilibrium supply curves, some conditions are assumed to be unchanging. It is the purpose of this note to make explicit the more important constants that must be considered in the investigation of supply, to indicate that the list generally considered is incomplete and to discuss the relative merits of two alternative means of rectifying an inconsistency in the completed list. The note deals with empirical supply curves of products—that is, of commodities that have undergone some sort of transformation or production.

In order to study the effects of changes in demand by consumers, it is desirable that, during the investigation, any alterations in quantity and price be attributable only to these demand changes. By using a supply schedule that shows the relation of the minimum prices at which different amounts are offered by producers when faced with different demands, it is possible to determine the consequences of the changes in demand. It is desirable that the supply schedule itself should be immutable during the analysis so that the effects of demand changes may be isolated from other variations.

As quantities and prices are assumed to vary along the supply schedule in a determinate manner, a mathematical model may be envisioned that will “explain” the relationship. In price theory this model is one of maximising behaviour on the part of the individual firm. The firm operates within such limitations as existing technology and the supply conditions of productive services. Some features of these limitations are not allowed to vary; they are the parameters of the model. These parameters have been assigned a variety of names in the literature of economics, such as the “givens,” “predetermined variables,” “other things being equal” and “things impounded in *ceteris paribus*.”

Any list of parameters is necessarily arbitrary. However, this note will try to define those variables that seem to be impounded in *ceteris paribus* in current price theory.

§2. Professor Milton Friedman has suggested classifying impounded variables as follows: (a) variables that both affect

and are affected by the variable under study; (b) variables that are little affected by the studied variable, but materially affect it; (c) variables that neither significantly affect the variable under study nor are significantly affected by it.¹ This classification will be useful for discriminating the long-run from the short-run parameters.

§3. Two theoretically distinct, although empirically arbitrary curves will be discussed—the short- and long-run curves. The short run is that interval in which there is time to vary production, but not enough time to alter the plant to adjust to a different level of output. All goods in this time period are newly produced for sale: there is no reservation demand. The long-run period is defined to be that time long enough to use any of the known productive combinations (and, hence, a more elaborate production function than in the short run), but not long enough for all productive services to become almost perfect substitutes. If factors did become perfect substitutes, the supply curve would have infinite elasticity. This extreme is uninteresting from the viewpoint of empirical work.

SHORT-RUN SUPPLY-CURVE *CETERIS PARIBUS*

§4. To the author's knowledge, the most complete discussion available of the *ceteris paribus* for supply curves is in an unpublished paper by Milton Friedman.² In it, Friedman suggests that the parameters for the short run are: (1) the state of the arts, (2) the prices of products that are either close substitutes or highly complementary in production, and (3) the supply curves of factors of production for the product considered.

Friedman's third point needs no explanation; the first two require examination. The significant part of the “state of the arts” which must remain constant is simply the production function for the product. This function, in the short run, includes all possible productive combinations that do not require changing the plant. Other changes in technology in the society, which affect neither the quality nor price of the factors nor the ways of combining them, may vary in any way whatsoever. These changes belong to the third class mentioned above (§2).

Products that are either close substitutes or highly complementary in production belong to the first class of variables.

¹ Milton Friedman, “The Marshallian Demand Curve,” *Jour. Pol. Econ.*, Vol. LVII, No. 6 (December 1949), p. 470.

² Milton Friedman, “The Relationship Between Supply Curves and Cost Curves” (notes used in advanced-price theory course, The University of Chicago, 1950), pp. 2 f. (Hectographed.)

¹ The author is very grateful to Professor Milton Friedman, of the University of Chicago, and to Professors D. H. Flanders and E. T. Weiler, of the University of Illinois, for their criticisms and many valuable suggestions.

While it may be useful for some problems to hold their prices constant, it is not necessary to do so. It is also possible to impound the quantities of these products; while a third alternative is that the demand curves for the closely related products remain unchanged. The first two choices of impounding prices or quantities really reduce to perfectly elastic and perfectly inelastic demand curves for the products. While these extremes are improbable, they should not be forgotten as approximations in empirical work.

A fourth parameter is expectations. Although supply curves are treated within a static framework, perfect foresight is neither basic nor desirable for the theory.¹ Consequently, expectations must be introduced into the analysis. If the expectations change during the period of analysis, the supply curve is no longer determinate. Thus, in Hicksian phraseology, there must be a constant elasticity of expectations.² Although it is not necessary, this elasticity is usually considered to be unity.³

An example may clarify the meaning of these four impounded variables. Suppose a scholar produces two products, text-books and original work. If the supply schedule of text-books from this producer is to be described, it is reasonable that the production function remain constant during the period (*i.e.*, the scholar must not suddenly become more intelligent). Secondly, let the demand for related products be impounded (were the scholar to receive greater remuneration for his original work, he might stop producing text-books entirely). Furthermore, the supply schedules of productive services should not change (such as a fall in wages making possible the employment of a secretary). Finally, were the scholar subject to fluctuating expectations about college enrolment, the supply schedule would be indeterminate.

CETERIS PARIBUS FOR THE LONG RUN

§5. Short-run supply curves have been dealt with in an unequivocal manner. Long-run curves present greater difficulties. In particular, long-run studies become involved in phases of general equilibrium analysis. Some variables which, in the short run, neither affected nor were affected by output

¹ Nicholas Kaldor, "The Equilibrium of the Firm," *ECONOMIC JOURNAL*, March 1934, p. 70.

² J. R. Hicks, *Value and Capital* (2nd. ed., London, Oxford University Press, 1946), p. 205.

³ Fritz Machlup, "The Theory of Foreign Exchanges," *Readings in the Theory of International Trade* (Philadelphia, The Blakiston Company, 1949), p. 109.

changes and had been in Friedman's third category (§2) now fall into the second as they affect the supply schedule.

§6. For the short period, only those supply curves of productive services used in the fixed-plant production functions for the product are in the second category. All other factors are in the third class (*i.e.*, shifts of curves in the markets of these variables do not affect the product under study). However, this separation does not exist in the long run.

Many productive services may be transformed into other productive services in the long run; consequently, a change in the demand or supply of a productive service not used in making the product will affect at least some supplies of those productive services that are used. A striking example is a change in demand or preference for one type of labor and the resultant changes in the supply of other kinds of labor.

If these productive-service markets are to be impounded, then certain general equilibrium qualifications are inherent in long-run partial equilibrium analysis. This proposition is neither new nor revolutionary; ¹ what is of interest is the actual selection of the general equilibrium conditions. Although the author believes the set of constants that follows is almost too extensive and confining for empirical work, it does seem to be the set implied by neo-classical thinking. A set that could be more closely approached in the real world would be preferable.

§7. Suppose a quasi-stationary state is postulated in which the only independent variable is tastes and preferences for final products. These demand changes may be broken into three types. The first is a change in demand for the product considered. It is this movement that traces out the supply curve. The second is a change in taste for other products that does not involve any net movements in the demands for individual productive services. The third is one which does not immediately affect the demand for the product, but does cause changes in the prices of productive services. Such an influence, acting through the ultimate substitute or complementary relationship of almost all productive services, would cause the product supply curve to shift. Therefore, although this kind of alteration is common in the real world, it must be excluded in the model.

If this sort of stationary state is accepted, then two other parameters may be listed. These parameters are in Friedman's second class.

¹ George J. Stigler, *The Theory of Price* (New York, Macmillan Co., 1948), pp. 28 f.

§8. Most, if not all, technological change is to be impounded. Any advance in technology would change some demands for productive services and, by the reasoning above (§6), would affect those factor-supply schedules that must be held constant.

§9. It is also necessary to consider money income. According to Keynesian analysis, a change in money income would alter the rate of interest and, thus, the price of a productive service.¹ For the neo-classicist, there would be a direct price movement. If all prices rose by the same percentage, there would be a parallel vertical movement of the product supply curve; under any other circumstance the shift of the curve cannot be determined *a priori*. Either of these two lines of thinking leads to the conclusion that it is necessary to impound money income.

To summarise: if the supply schedules of productive services used in the product are not to change in the long run, then it is necessary to impound: (1) variations in taste not directed towards the product, but altering the demand schedules of productive services; (2) money income; and (3) technology.

§10. These parameters all seem to be necessary; yet, reflection quickly shows a theoretical inconsistency. This inconsistency, and two alternative assumptions which will rehabilitate the system, may now be demonstrated.

When demand changes for a product, quantity can only increase by a decreased use of resources in other production. Money is diverted from these other uses, and the system will reach a new equilibrium with unchanged technology (§8) and unchanged money income (§9). Under the definition of the long-run time period (§3), however, productive services are not perfect substitutes. From this definition (which is basic to neo-classical price theory), it is implied that the supply schedule will take on different shapes, depending upon the resources that are released. For if the resources which go into a given dollar's worth of product A are imperfect substitutes for an equal money's worth of product B, there is no reason whatsoever to assume a shift in demand from A to C will result in the same output of C as an equal shift from B to C. For example, a shift from cigars to cigarettes would yield a different output of cigarettes than if the shift had been from chewing-gum.

§11. There are two solutions to this apparent impasse. The first suggestion is one that seems to be implicit in neo-classical theory. Marshall's customary treatment of small industries with

no great peculiarities may be interpreted as implying the assumption that the resources released are equally substitutable, regardless of the product from which they are released.

The rationalisation for this assumption is a bit nebulous (and it may be for this reason that the statement has been avoided). In the first place, by definition, productive services cannot be perfect substitutes; nevertheless, they must be substitutes to some degree if the supply curve is not to be perfectly inelastic. An intermediate degree is required. This degree would be achieved if the released resources are technologically at a distance so great, that by the time the reactions and interactions have filtered through the economy, the effect on the factors used in the product is essentially the same, regardless of the particular resources freed in the first instance. This author has been unable to find or develop a more rigorous statement justifying the assumption.¹

§12. The alternative to the Marshallian assumption is one that provides for the release of resources from all other products. Rather than the shift from a single distant product, resources from all other products may be freed in some standard fashion. The simplest assumption is a uniform release from other products. An example of this kind of release would be a government maintaining a balanced budget in a closed economy. If the government were to finance its expenditure upon a product by means of a sales tax on all products, then a unique supply curve may be traced for the product. A variation of this assumption would be a redirection of income: the demand for other products would shift because of the income effects of the decreased expenditure apportioned them. The analogue of the above example would be an income tax financing the government's purchases of the product.

There is no way of telling the exact relationship between the supply curves formed under the Marshallian assumption and from one of the "all products" assumptions. In conjunction with the parameters stated above (§6-9), the use of either kind of assumption will yield a consistent supply curve.

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¹ The assumption may be made a little more palatable by impounding a specific list of products that are closely related in production, as was done for the short-run curve. This restriction would at least force some filtering on the system. Friedman has done a similar thing, for a different reason, with closely related commodities in demand for his exposition of the demand curve. Milton Friedman, "The Marshallian Demand Curve," *op. cit.*, p. 465.

¹ John Maynard Keynes, *The General Theory of Employment Interest and Money* (New York, Harcourt, Brace and Company), Bk. IV.

FLUCTUATIONS IN INCOMES OF PRIMARY PRODUCES

THE history and present position of the Nigerian and Gold Coast Marketing Boards in relation to the economies of these territories is much more complex and interesting than the article by Mr. Bauer and Prof. Paish in the December issue of the *ECONOMIC JOURNAL* suggests. Some of the reasons for thinking this, and for doubting the appropriateness of a formula which stabilises the money incomes of export producers, will be briefly indicated:

(a) It is broadly true that, except in 1948–49, post-war sterling prices of cocoa, groundnuts and palm produce (as well as of cotton) continued to rise, *against all expectations*, until mid-1952 (cocoa) and autumn 1951 (groundnuts and palm produce). Although the prices received by the Boards for groundnuts, palm produce and cotton, under their long-term contracts with the Ministry of Food and the Cotton Commission, lagged behind world prices, these prices also rose greatly. During the whole of this period up to the Korean war economists were practically unanimous in expecting a slump to be round the corner. If one pays an insurance premium and is not burgled who is to be blamed?

(b) This point should be made, but not over-emphasised, for from the point of view of the individual peasant producer the insurance premium was very large indeed, although there was a hope that sooner or later he would get much of it back. But the willingness of the Boards to undertake cyclical price stabilisation, extending over some such period as five to seven years, could surely not be judged until they had had time to build up adequate reserves and until world prices had really started to fall. Now that they have started to fall what does one make of the situation?

(c) One conclusion is that generalisation about all the Boards is unwise. The Nigeria Palm Produce Marketing Board has fixed its producer prices for 1953 at a level which it estimates will cause a drain of £2 million on its reserves: that Board now evidently regards price stabilisation as a duty. The Gold Coast Cocoa Marketing Board, on the other hand, reduced its 1952–53 producer price by one-eighth, mainly on the ground that although world cocoa prices had fallen severely it must conserve its colossal reserves until the real slump came. It is beyond dispute that this Board (which is in a much closer relationship to the Gold Coast government than that of the Nigerian Boards to the Nigerian government) is not at present concerned with price stabilisation, but rather with the conservation of its resources

against what one ventures to call an old-fashioned slump, as well as with the need to retain the extremely high scale of cocoa export duty. It appears that in its concern with these two aims it is being over-cautious.

(d) It is believed that the Nigeria Groundnut Marketing Board was inclined to raise its producer price for the 1952–53 crop (although the Ministry of Food's average buying price was almost certain, such is the nature of the long-term contract, to be lower than in 1951–52) but that it did not do so because of the possible effect on prices generally in Nigeria. If the Board's groundnut producer price rises, then the price paid by Nigerian groundnut consumers rises also. Prices of locally grown food-stuffs and imported consumer goods may also rise, though it seems that the latter are now sufficiently plentiful for this not to happen. Whether, in general, this anti-inflationary argument against raising producer prices is a good one it is impossible to say, for the necessary economic facts and statistics are lacking. But as most farmers in the groundnut-growing area of Northern Nigeria are believed to grow some groundnuts; as many of them buy from and sell to one another; as almost all groundnut farmers also grow other food crops; and as very little is known about the influence of expected price changes, or of the weather, on the balance of groundnut and food crop production—for all these reasons generalisation is dangerous.

(e) Bearing in mind that a large proportion of the Nigerian groundnut crop (as well as of the palm oil produced) is consumed locally—the (admittedly tentative) results of the first sample census of agriculture suggest that in the bad crop-year 1950–51 the proportion was about one-half—the proposal that the Board should aim at stabilising the money income derived from selling for export requires much more justification. Indeed, one has a feeling that in making this proposal Mr. Bauer and Prof. Paish were thinking of cocoa, all of which is exported as bean or butter. Have they not overlooked the enormous variations in groundnut purchases for export and the present impossibility of forecasting the size of this annual peasant crop (grown in plots of an average size of perhaps 0·4 acres) any length of time in advance? In 1950–51 the Board's groundnut purchases for export were 143,000 tons; in 1951–52, possibly mainly owing to favourable weather, they were over 400,000 tons; as late as November 1952 one authority put the 1952–53 figure at over 600,000 tons which was about 200,000 tons too high. Would it really be desirable to aim at reducing the producer price considerably in response to such

large fluctuations, bearing in mind that the interchangeability of oils and fats is so great that the sterling groundnut price might be little affected (Nigerian railing difficulties apart) by such fluctuations? And reverting to the question of sale for local consumption, one must remember that the proportion consumed locally will be liable to great variations with the size of crop.

(f) It may well be that such is the universal reluctance of statutory bodies (including the U.K. Unemployment Insurance Fund) to part with their funds, that some obligation to do so over a period should be imposed on the Nigerian and Gold Coast Marketing Boards by amendment of the local Ordinances under which they operate. This obligation might or might not be called price stabilisation, but any formula should certainly distinguish payments to producers and the use of funds for other purposes such as development, education or research. It is unlikely, so varying are the political and economic circumstances, that the same formula would do for each Board.

(g) Mr. Bauer and Prof. Paish refer on p. 765 and elsewhere to the tendency of all regulation schemes to reduce output. This is unproven for the West African Boards: it may be true, or it may not be. It is unlikely to be more than a slight influence for cocoa in the short term as it takes some seven years for a young tree to come into bearing. But the assertion overlooks something which is proven—the astonishing improvement in the quality of Nigerian cocoa, and more recently of palm oil, which has resulted from the payment of differential prices by the two Boards. The improvement in the quality of palm oil is indeed one of the most important events in the economic history of modern Nigeria.

(h) But even if the assertion could be proved, the level of export production which it was desirable to bring about would still be open to doubt. For Nigeria and the Gold Coast have, in a sense, one foot in the world economy and one outside it, and it is possible for them to produce too much for export. It is true that neither country would be likely, in the absence of compulsory saving such as is effected by the Marketing Board system or by high export duties, to have a large favourable trade balance for any length of time, for there are few private savers; but an increase in exports can easily give rise to serious internal distortions because 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. This is an interesting subject that has been little considered by economists.

(i) Even if it is agreed that several of the Boards, in particular

the Gold Coast Cocoa Marketing Board, are insufficiently enthusiastic about disbursing their funds, one should not overlook the benefits that these funds have given and will give. The three Nigerian Regional Production Development Boards are financed by the Marketing Boards, being allotted 22½% of the Boards' surpluses each year. If it is true, as Mr. Bauer and Prof. Paish say, that the present high scale of the Gold Coast cocoa export duty could not have been imposed unless the Marketing Board had paved the way, then it is also true that it is the Board which has enabled the Gold Coast government to propose making a contribution towards the Volta River Project of a size appropriate to a country nearing self-government. It is partly because the Marketing Boards' reserves give governments and people a general sense of security against external calamity that the political situation in the Gold Coast and in Nigeria is so full of hope.

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A SUGGESTED AMENDMENT TO THE INTERNATIONAL MONETARY FUND CHARTER

THE end of the post-war period which was supposed to be the "transition" to a peace-time international economy came with the passing of 1952. The International Monetary Fund Charter provided for the use of "emergency" techniques during the five-year period after its inauguration in 1947; but because world trade and payments conditions are not yet conducive to the operation of the Fund mechanism as envisaged at Bretton Woods there is some demand that the role of the Fund be re-examined. Harry D. White, in early 1948, saw that the Fund was not performing the functions for which it was created, and proposed an extensive amendment of the Articles of Agreement.¹ His suggestion was apparently not taken seriously by Fund officials, but in view of the recent pleas for an expansion of Fund resources and a new approach to its lending policies, a discussion of the amendment seems appropriate.

The purpose of the amendment was to provide an international medium of exchange to supplement the Fund's resources so that trade could be balanced at a higher level. The amendment

¹ White, at this time, was consultant to the Mexican Government. He had previously been the U.S. Executive Director on the Fund and was the principal author of the plan which culminated in the Fund Charter. His proposal was found among a collection of papers presented by Mrs. White to the Princeton University Library.

entailed the establishment, within the Fund, of "Trade Dollar Accounts" for each member so desiring. A Fund member was to be eligible for a TD Account if it was eligible to use the regular resources of the Fund; members having continued export surpluses were exempt from membership if they so desired, thus allowing the United States to remain outside and not have its exports increased because of the amendment.

The operational mechanism White proposed was somewhat similar to that created under the European Payments Union two years later. Each quarter, the members participating in the new scheme (those having active "Trade Dollar Accounts"—designated as TD members) were to be assigned a "Trade Dollar Award." These awards were to be the excess of the increase in imports from over the increase of exports to all other TD members (both volumes to be net of long-term capital movements) during a "computable period" (the second preceding quarter) compared with the same quarter in the base year (the calendar year preceding the acceptance of the amendment). Those member-countries having such *net import increases* were awarded a "Trade Dollar Credit" of the magnitude calculated,¹ and those having *net export increases* were given a "Trade Dollar Debit," if in each case both exports and imports increased over the base period.² Those countries having Credit Awards were allowed to draw TD Drafts to the amount of their credits, and those having Debit Awards had to accept these drafts up to the amount of their debits before being able to draw drafts themselves (with one exception, noted below). The awards were limited in amount by both Total TD Quotas and Quarterly TD Quotas. Total TD Quotas were to be set to designate the maximum that any member could have outstanding as a creditor or debtor at any time throughout the duration of the amendment.³ The Quarterly TD Quotas

¹ If the aggregate of TD Credit Awards exceeded the aggregate of TD Debit Awards, the former were to be scaled downward proportionately among members so as to equal the Debit Awards.

² It is not clear what would be done with a country having an absolute decline in both imports and exports. White wrote (with a question mark in the margin) that after one year of operation "any minus quantity in a member's quarterly TD imports shall be added (algebraically) to subsequent quarterly TD imports until the result is a plus quantity; and any minus quantity in TD exports shall be added (algebraically) to subsequent TD exports until the result is a plus quantity." He also proposed that if a member's TD imports were less than those of its base period for eight consecutive quarters, its base period should be changed.

³ The suggested volume of the Total Quota was a member's "imports during the base year from all other members having active TD Accounts minus estimated net capital imports from those countries during that period." Quotas were to be open to renegotiation after five years.

were the maxima that each country could be given as a Credit or Debit Award.¹ This restriction by quarterly quotas was imposed to keep the magnitude of credits within the capacity of each country to repay over a stipulated period. If the award that was calculable from the net increases in imports for any country was greater than its quarterly quota, only the quota amount could be awarded, but the excess would be carried over cumulatively into future quarters.²

In the day-to-day operations of the Account, members would draw drafts on each other, which would be entered in the "Operations Section" of their Accounts,³ and each member agreed to accept TD's "on the same basis that it would accept *any* other currency." This provision was to give the TD's the widest possible circulation, and was imposed irrespective of whether the receiving member had a credit or debit balance in its account. "To make this possible while protecting any member from having to export on balance in any single quarter more for TD's than can reasonably be expected of any country, a limit of 8% of a member's Quota is set. If a member receives TD's beyond that sum, it may spend the excess (in the form of TD Drafts), even though it does not have a credit balance in its TD Account."

The problem of persistent debtors and creditors—an acute difficulty faced by EPU in 1951—was to be met by three provisions: one setting the limit of Credit Awards usable by the drawing members both in any given quarter and over the entire duration of the amendment; another allowing a member with a credit balance remaining in its Award Section at the end of a quarter to sell the credit for its own local currency (rather than transfer it to a credit in the Operations Section) with the Fund obtaining the currency by sale of a credit to another country's

¹ The Quarterly Credit Quota was given a maximum of 4% of the Total Quota of each member, making possible credits awarded and used by any member during a year no greater than 16% of its Total Quota. The Quarterly Debit Quota had a maximum of 8% of the Total Quota.

² White commented in his proposals that the member "assigned a Quarterly TD Credit Award is permitted to draw on it . . . and to use the Drafts as payment to any other member having a TD Account for settlement of *any* international transaction, whatever it may be. It is to be noted that the TD's are assigned only under specific conditions, but once assigned can be used for any purpose. . . . The member which has been assigned a Quarterly TD Debit Award has no TD's to draw upon. On the contrary, it has to accept TD's from the other members and deposit them with the Fund for credit [in the Operations Section of the Account] until the sum of those credits equals the member's debit award." (See the exception noted below, however.)

³ The drawer of the draft would receive a debit in the Operations Section, the payee a credit; the former's Credit Award in the Awards Section would be correspondingly reduced, as would the latter's Debit Award.

account in the Operations Section for the currency to be transferred to the seller of the Award's credit; and the third was the provision noted above whereby a member having a debit balance in the Award's Section (and therefore subject to selling goods for TD Drafts to be credited to it in the Operations Section) was allowed to draw a TD Draft for payment on international account during any period if it accumulated a credit balance in the Operations Section during the previous quarter exceeding 8% of its Total TD Quota. These provisions, White asserted, would prevent the concentration of additional net purchases in a few countries (so long as the United States was not an active member): that is, if many countries attempted to concentrate their additional purchases in a few countries, they would soon find that an increasing part of the TD's they were spending in Mexico were either being used by Mexico (via the Fund clearing arrangement) or that Mexico was presenting the TD's to the Fund for sale back to the drawing member. Gradually the excess of Mexico's TD receipts (*i.e.*, excess over its quarterly open debit) would be diverted toward expenditures in countries whose open debit ceiling had not been reached.

The process of drawing TD Drafts was to continue for a period of twelve years, at which time "no further Quarterly TD Credit Awards shall be assigned to a member having a debit balance in the Operations Section of its TD Accounts. From that date on no member with a debit balance in the Operations Section of its TD Account shall be permitted to draw any further TD Drafts, and only members with net credit balances in their Operations Sections may be allocated TD Credit Awards by the Fund if earned." "At the end of 15 years the TD Accounts shall be closed. Members whose TD Accounts (Operations Section) have debit balances shall owe the Fund the sum of the debit balance; to those with credit balances the Fund shall owe the sum of the credit balance." "Any sums due the Fund shall be liquidated by payment to the Fund, in gold or dollars, at the rate of 10% of the sum each year, plus 2% per annum on the unpaid portion." "Members having sums due them shall receive payments from the Fund, in gold or in United States dollars, at the annual rate of 10% of the sum due [without interest—to provide some inducement to creditors not to allow their balances to rise greatly]." "If payments received by the Fund from members owing sums to the Fund are less [due to defaults] than the amount due to other members, the Fund shall pay 50% of the annual shortage to those members in the currency of that member out of the

Fund's assets and reserves. The remainder of the loss shall be settled as best can be on a proportionate basis by negotiation between creditors and defaulting debtors with the co-operation of the Fund."

Eligibility requirements were imposed in order to expand the regular operations of the Fund and to tie the amendment to the originally proposed lending policies and purposes of the Fund. First, permission was to be granted to countries having export surpluses of various magnitudes in the base year to remain inactive and thus not have any TD Drafts presented to them. Second, members of the Fund declared ineligible to use the Fund's resources under its regular procedures were not to be allowed to draw TD Drafts under any circumstances. Third, and most important, each member was eligible to receive, within the total and quarterly quota limits, a Quarterly TD Credit *only* (a) if it had used the Fund's resources previously to 60% of its *past* year's Fund quota or of its total quota in the Fund, *or* (b) if it had purchased one or more of the currencies not exempt from the TD Account or declared "scarce" by the Fund in a net amount of not less than 5% of its total quota in the Fund. The rationale of these provisions was explained by White as follows:

"The proposed amendment should in no way alter the obligations of the members, nor diminish the responsibilities of the Fund. On the contrary, since the members would now have access to much greater resources, it is reasonable to expect them to conduct their affairs with the same attention to sound practices and policies as are required of them under the Charter if they are to continue to have access to these additional resources. On its part the Fund should have the same authority to safeguard the proper use of the additional resources as of the regular resources of the Fund. That does not mean that the use of the TD Accounts would be subject to the same conditions as is the use of the present resources. On the contrary, use of the TD Accounts would be designedly subject to different conditions. None the less, the use of these TD Accounts could hardly be permitted if in the opinion of the Fund improper use of the regular Fund resources were being made. . . .

"It would be difficult to justify permitting a member of the IMF to draw TD's when it had a substantial part of its regular Fund quota available. The purpose of the Amendment is to supplement the Fund resources, not to attempt to compete with them.

"Since the unused part of the annual quotas in the Fund could be used to purchase currencies even of those members which postponed participation in the TD arrangement,

there would be a temptation to resort to the Fund quotas only when the dollar was wanted, using the TD Account for settlement in other currencies. Such a policy would distort the operations of the Fund and still further limit its potential usefulness.

"On the other hand, to require a member fully to use up its regular Fund quota before being eligible to use its TD Account would speed up use of dollars. This, too, would be undesirable. Many members of the Fund, especially those with small gold reserves, are reluctant to use up all their full quotas. They regard their ability to buy dollars as a second line of reserves for them. They prefer to curtail needed imports rather than to use up that second line of reserves. The TD Account should enable them to increase their imports (though not from the United States) while not forcing them first to use up that reserve. The requirement that a member use up 60% of its annual quota, or 60% of its total quota would seem to be a reasonable compromise.

"Section 2 [(b) of the third eligibility requirement above] is included to offer some inducement to members not eligible under Section 1 [(a) above] to use part of their regular quotas to purchase currencies other than the dollar and one or two others. Thus, if a member would like to increase its imports from 'soft' currency countries, yet is reluctant to use up its 'hard' currency reserves to do so, it could by purchasing one unit of soft currency from the Fund be eligible to purchase three units under its TD Account even though it had not used up 60% of its annual or total quota. Whether the ratio of three to one is enough, or more than enough, of an inducement to promote use of soft currencies in the Fund's regular resources is uncertain. But some such inducement seems worth trying."

In commenting briefly on the proposal, two or three points appear most noteworthy. First, the amendment was an imaginative attempt to meet some very pressing problems, ones which are not yet fully solved and which have been intensified by continued inflationary pressures. The mechanical techniques may or may not be the most appropriate, and White did not consider his draft a finished document. These details would need close examination if such an approach were deemed desirable.

Second, an apparent obstacle to the acceptability of the suggestion lies in the eligibility requirements. One of the main objections to the Fund's policies in recent years has been that it is too stringent in allowing use of its resources. If members are required to meet these strict criteria (even if they are not imposed on TD Drafts) in order to use their TD Drafts, they might consider that the amendment is no improvement over the policies

currently objected to. At the same time, Fund members have argued that if resources were made available to them more readily, they could and would move rapidly toward the objectives of the Fund in setting up stable par values, unifying exchange rates and removing exchange restrictions.

This consideration leads to a third observation. If Fund members have merely been "over-cautious" in removing restrictions and are in fact willing to move toward the objectives of the Fund but feel themselves unable to do so because of a lack of adequate reserves, this amendment would provide just the kind of reserves required and in an amount estimated by White of about \$6 billion per year. It is possible that the new resources would not be fully used, just as a man with an ample line of credit may use his own resources more freely. It would also help to rechannel trade away from the dollar area and thus reduce the drain on dollar reserves. Discussion of such an amendment would tend to bring out the basic position of members on whether pressure on balances of payments could be relieved by additional reserves or whether disequilibria are due to more fundamental causes resting in domestic policies of inflation and over-full employment, as the Fund now appears to believe.

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OFFICIAL PAPERS

THE GEOGRAPHICAL DISTRIBUTION OF ASSESSED INCOMES

THE publication, in the Ninety-fifth Report of the Board of Inland Revenue ¹ of a county analysis of the results of the 1949-50 sample census of personal incomes adds a considerable volume of useful data to the hitherto scanty body of information on the geographical distribution of incomes within the United Kingdom. Country results were given in the previous report, which provided an analysis for England, Wales, Scotland and Northern Ireland, of income groups by class of tax-payer (married or single) and by type of income. As might be expected, the results for the ninety-four counties are given in less detail: classes of tax-payers are not distinguished, fewer sources of income are shown and fewer income groups are used.

¹ *Report of the Commissioners of H.M. Inland Revenue for the year ended 31st March, 1952.* (Cmd. 8726). (London: H.M.S.O., 1953. Pp. 197. 7s.)

The decision to publish results by counties instead of merely by the twelve Standard Regions represents a great advance. It is true that the adoption of a standard set of regional classifications by most Government Departments publishing basic statistics has been a useful feature of post-war practice. It is also true, however, that the Civil Defence Regions, which form the basis of the present Standard Regions, have a limited economic significance, but that it would not be easy to suggest an alternative set of twelve which would be appreciably more significant. What it amounts to is that the Standard Government Regions are too large to be the sole vehicle of regional economic analysis in the United Kingdom and that there is need for some basic information on patterns of income within these broad divisions. The fact that the county boundaries are not quite coterminous with Standard Region boundaries is a minor disadvantage of a county breakdown compared with the scope it offers for combining and recombining the small areas for different analytical purposes, and for penetrating more deeply into the economic structure of the Standard Regions themselves.

A comparison of the county averages derivable from the county tables of assessed incomes gives some indication of the extent to which the Standard Regions cloak wide variations in earning power. Table I shows county results grouped by Standard Regions, *i.e.*, after allocating Derbyshire county as between

TABLE I
Average Total Incomes Assessed Before Tax 1949-50

	Regional average.	Highest county average.	Lowest county average.
London and South-east	£ 464	£ 543	£ 382
Midland	395	409	376
East and West Ridings	393	394	386
Southern	393	422	380
North Midland	392	407	380
Eastern	381	398	358
Scotland	380	434	204
North-west	380	381	371
South-west	373	394	358
Northern	369	416	358
Wales	356	365	314
Northern Ireland	348	356	307

North-west and North Midland, and Essex and Hertfordshire counties as between Eastern and London and South-east, on the basis of population proportions. It gives estimated average assessed income from all sources per assessee for the Standard

Region so defined, the highest county average within each region and the lowest county average within the region. The regions are listed in order of their average assessed income from all sources.

It is perhaps not surprising to find that the most densely populated region and the largest in terms of area show the widest range. London, whose highest earning area is the City (treated as a separate county) and whose lowest is the county of Kent, has the widest absolute variation, and Scotland, with conditions ranging from the Clydeside to the Shetlands, has a range which, in relative terms (*i.e.*, expressed as a percentage of its regional average), is even larger. If we exclude the City as an extreme and special case, Scotland's county range is more than twice that of any other region, whether in absolute or in relative terms, and London and South-east has a relatively lower range than Northern, Wales or Northern Ireland.

The wage and salary averages are unfortunately not directly comparable as they stand because the county tables exclude the great majority of non-industrial Civil Servants and members of the Armed Forces and Merchant Navy. The income distribution for these groups, which are assessed at special offices, is shown in two separate tables (each of which covers the United Kingdom as a whole) giving the results for Public Departments and Seamen respectively. This omission from the county tables affects other categories of income also, but the amounts involved are small, except in relation to wages and salaries, where the exclusion could seriously distort regional comparisons.

In Table II an attempt has been made to allow for the omissions by distributing their wage and salary component regionally on the basis of employment data. This adjustment is crude for two reasons: first, because the Ministry of Labour regional employment analysis tends to be based on place of work rather than on place of residence, whereas the Income Census results approximate to place of residence; and secondly, because there are undoubtedly regional differences in income distribution for non-industrial Civil Servants. For both reasons the burden of inaccuracy is likely to lie more heavily on the figures for London and South-east, Southern and Eastern regions, since it is precisely in this area that daily mobility of labour across regional borders makes it necessary to keep the distinction between place of work and place of residence as clear as possible, and since it is in this area also that Civil Servants at the higher administrative levels tend to live and work. If we were able to adjust more accurately, it seems likely that the

Southern region average for wages and salaries (and possibly also the Eastern and South-western averages) would show a relative increase, for these are the areas in which the higher-earning Civil Servants probably live.¹ However, it is by no means certain that the change would be enough to shift the rank ordering shown in Table II.

TABLE II

Average Assessed Incomes by Main Class of Income 1949-50
(Regional Rankings are given in brackets)

	Wages and salaries (Schedule E) principal source.	Profits and professional earnings (Schedule D).	Income from property (Schedules A and B).
	£	£	£
1. London and South-east . . .	370 (1)	704 (1)	63 (1)
2. Midland	353 (2)	592 (4)	45 (9)
3. East and West Riding . . .	346 (3)	596 (3)	43 (10)
4. Southern	330 (9)	582 (6)	61 (2)
5. North Midland	344 (4)	588 (5)	48 (6)
6. Eastern	330 (8)	573 (7)	54 (4)
7. Scotland	329 (10)	675 (2)	42 (11)
8. North-west	336 (6)	531 (9)	41 (12)
9. South-west	316 (11)	531 (10)	55 (3)
10. Northern	341 (5)	571 (8)	48 (7)
11. Wales	333 (7)	462 (12)	46 (8)
12. Northern Ireland	308 (12)	478 (11)	51 (5)

Broadly speaking, it seems to be true that regions which have a relatively high average of Schedule E incomes tend to be regions with a relatively high average of Schedule D incomes also, and a significant rank correlation coefficient can be computed for these two classes of income. It is interesting to note, however, that Scotland is appreciably higher in the regional scale in respect of Schedule D incomes than in respect of Schedule E incomes, while an opposite tendency is observable for Wales, for example.

The publication of county income-distribution tables makes it possible to compare patterns of income distribution for fairly small geographical areas of the United Kingdom. When the full results of the 1951 Census of Population are available it will be interesting to relate such comparisons to the analyses of county occupational and industrial distributions. Meanwhile, however,

¹ See, for example, *Census 1951, Great Britain One Per Cent. Sample Tables*, General Register Office, H.M.S.O., London, 1952. Part II, Table V. 7, p. 180. The proportion of households with heads in higher administrative or professional occupations (as compared with intermediate administrative or professional, or clerical workers) was shown to be well above the national average in Southern region and appreciably above in Eastern region, Scotland and South-western region.

it is possible to measure the relative inequalities of county income distributions in various ways. Table III, which illustrates one of these ways, shows for a selection of counties a "coefficient of

TABLE III

Inequality of Assessed Incomes in Selected Counties of the United Kingdom 1949-50

	Average assessed incomes from all sources (£).	Coefficient of concentration (0 = complete equality; 1 = complete inequality).
1. <i>London and South-east</i>		
City	543	0.458
Middlesex	441	0.379
Kent	382	0.335
2. <i>Midland</i>		
Warwickshire	409	0.332
Herefordshire	376	0.360
3. <i>East and West Ridings</i>		
West Riding	394	0.337
East Riding	386	0.353
4. <i>Southern</i>		
Oxfordshire	422	0.379
Dorset	380	0.347
5. <i>North Midland</i>		
Leicestershire	407	0.352
Nottinghamshire	380	0.315
6. <i>Eastern</i>		
Cambridgeshire	396	0.378
Norfolk	358	0.326
7. <i>Scotland</i>		
Peebles	410	0.416
Midlothian	405	0.367
Lanarkshire	387	0.339
Invernesshire	348	0.312
Shetland	294	0.259
8. <i>North-west</i>		
Lancashire	381	0.334
Cheshire	371	0.315
9. <i>South-west</i>		
Somersetshire	394	0.371
Cornwall	358	0.329
10. <i>Northern</i>		
Westmorland	416	0.393
Northumberland	380	0.323
Durham	358	0.276
11. <i>Wales</i>		
Monmouthshire	357	0.264
Anglesey	314	0.281
Flintshire	345	0.257
12. <i>Northern Ireland</i>		
Antrim	356	0.329
Armagh	307	0.333

concentration" of incomes based on the data of Lorenz curves which plot cumulative percentages of amounts earned against cumulative percentages of numbers earning for eighteen income groups. The coefficient of concentration represents the ratio between (a) the area enclosed by the Lorenz curve and the diagonal

of perfect equality and (b) the whole area between the diagonal of perfect equality and the two sides of the square which give the limiting position of perfect inequality. Its value would therefore be 0 in a situation of perfect equality and 1 in a situation of perfect inequality.

This coefficient, calculated in respect of total assessed incomes, is shown in Table III for thirty of the ninety-four counties of the United Kingdom, together with the corresponding average income. The counties are grouped by the regions in which they fall, and the regions are again listed in order of average total assessed incomes. The selection of counties has been arbitrary and designed only to show at least two counties from each region and a variety of values for both level and concentration of incomes.

It will be seen that there are wide variations in inequality of income as measured by this coefficient, both within regions and for the country as a whole. For this selection of counties the variation in the coefficient of concentration ranges from the relatively equal distribution of Flintshire (0.257) and Shetland (0.259) to the relatively unequal distribution of the City (0.458) and Peebles (0.416). This restricted list of counties gives ample evidence of the tendency for inequality of incomes to be positively correlated with average income, but there are some interesting divergences from this tendency. The coefficient of concentration, for example, yields approximately the same value for Warwickshire and Armagh, although the former is well above average and the latter well below average in terms of the level of assessed incomes.

The Inland Revenue report gives details of income distribution over the same eighteen income groups, for wages and salaries, profits and professional earnings, and income from property. There is therefore scope for fairly detailed investigations into the nature and extent of local inequalities of income in the United Kingdom. Even this brief survey of the material now published has shown, however, that there is a considerable variety in the geographical pattern of incomes, both within the standard regions and over the country as a whole.

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FOOD CONSUMPTION AND EXPENDITURE¹

THE use of sample surveys to obtain information on the consumption habits of the population has in recent years become increasingly popular both in industry and government. In the case of the Ministry of Food this resulted from the war-time need to keep a check on the consumption levels of the population which was achieved by taking a random sample, at frequent intervals, of a large section of the population—the urban working-class. The major portion of the information collected in those surveys has already been published in *The Urban Working-class Household Diet, 1940-1949* (H.M.S.O., 1951), and has been noted in this JOURNAL (September 1952, p. 710).

The value of such a continuous survey of household expenditure was increased in 1950, when it was decided to extend its scope so that it referred to the whole population rather than only a section of it. This is the first of what is intended to be a series of annual reports, and presents the results of the survey for the year 1950. It is based on a survey of some five thousand households.

A detailed account of the expenditure pattern of the population such as this contributes to our knowledge of the economic world at two levels. First, at the historical level this report describes in considerable detail how the expenditure pattern of the population changed in the four quarters of (as it has been termed) the most normal of post-war years, 1950, which saw the abolition of milk and points rationing. The return to the pre-war pattern is clearly noticed in the first half of the year and then, as Korea makes its impact, the appearance of shortages once again distorts the pattern of expenditure in the second half. The analysis of the seasonal variations in expenditure and prices is particularly illuminating, and provides a possible field for the derivation of price elasticities.

In addition to contributing at the historical level, this detailed collection of facts must inevitably contribute at a second level in that it provides greater insight into the theory of the behaviour of the household. The expense of collecting family budget records and of subsequently analysing the data is so great that few academic institutions can undertake this type of work, however great its potential contribution to our basic knowledge of the

¹ *Ministry of Food: Domestic Food Consumption and Expenditure 1950, with a Supplement on Food Expenditure by Urban Working-class Households 1940-49: being the Annual Report of the National Food Survey Committee* (London: H.M.S.O. Pp. 131. 4s. 6d.).

economic system. The reader will therefore be particularly grateful for two chapters of analysis, the first showing how the pattern of expenditure varies with the social class of the household, and the second showing its variation with the size of the household. The latter analysis is confined to only half the households, which in the main were those composed of only two adults and 0, 1, 2, 3 or 4 children. The tables show how for some commodities, for example potatoes, consumption per person hardly varied with household size, whereas for other commodities, such as fresh fruit, consumption per person in households with four or more children is less than half that in families with only one child. Further analysis of the data is required to clarify the interaction of social class (for which the reviewer would prefer to substitute income level or some approximation to it) and household size, and it is to be hoped that the authors will find it possible to give this in future reports.

From the point of view of factual documentation, that is the first aspect, it is desirable to publish the results of the surveys as early as possible if the reader is not to subject his imagination to an undue strain in attempting to digest a hundred pages of statistics. On the other hand, the second aspect, the time-consuming supplementary analyses which make the matter appetising, tempts delay. This is a nice problem in optimisation: the reviewer's preferences are for a rather shorter lag than that chosen here, say, of twelve to fifteen months.

In addition to the matters already referred to, this report has a number of analyses of the nutritional content of the nation's diet; a number of appendices giving, *inter alia*, comparisons with pre-war consumption levels, and giving the basis of an index of seasonal price charges; and a supplement giving further information on the data relating to the years 1940-49. In all, this publication is a valuable addition to the economist's knowledge of consumption data and it is to be hoped that the National Food Survey Committee, and its secretaries Mr. W. L. Kendall and Miss D. F. Hollingsworth, who prepared the present report, will see fit to continue and if possible extend this work.

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CURRENT TOPICS

THE Annual Meeting of the Royal Economic Society will be held at the London School of Economics at 5 p.m. on Thursday, July 2. After formal business, Lord Brand will address the Society on "A Banker's Reflections on some Economic Trends."

WE congratulate Mr. R. F. Harrod on his recent appointment to give the Sir George Watson lectures in American History, Literature and Institutions, in succession to Mr. Walter Lippmann. He has chosen "The Dollar" for his subject. Dates and places for the lectures will be announced later.

WE offer our best wishes to Mr. F. Sewell Bray on his appointment to the newly created Stamp-Martin Professorship of Accounting tenable at Incorporated Accountants Hall. Mr. Sewell Bray will be well known to many of our readers as one of those who have been endeavouring to promote greater understanding of each others' problems and terminologies between the two professions of accountancy and economics.

THE following have compounded for life membership of the Royal Economic Society:

Arya, O. P.	Chanana, K. M.	Scott, M. F.
Begum, Miss A. J.	Fand, D.	Shah, K. R.
Bhat, R. G.	Masek, J.	Tanna, S. R.
Bunn, L. J.	May, H. W.	Uchida, Prof. T.

The following have been admitted to membership of the Royal Economic Society:

Adams, Prof. W. E.	Baker, G. H.	Blem, D. G.
Adesina, J. A.	Baksh, M. K.	Boehm, E. A.
Allen, W. M.	Bamford, G.	Boys, J. R.
Ammar, F. H.	Banerjea, J.	Broussalian, V. L.
Amoako-Atta, K.	Bannerman, H. P. L.	Brown, A. R.
Andrews, Miss	Bardsley, J.	Callman, C. V.
W. E. E.	Bator, F. M.	Cartter, A. M.
Arrill, D.	Bell, E.	Catleen, Dr. H.
Azhar, B. A.	Bhattacharyya,	Chelvarajasingam, A.
Azulay, M.	Prof. H.	Clark, R. W.
Baidya, J. M.	Biswas, P.	Clarke, A. R.

Clavin, P. J.	Hiner, O. S.	Mitchell, Miss J.
Clement, T. R.	Hoard, R. N.	Morse, Prof. C.
Clower, Prof. R. W.	Hodgson, J.	Moss, R.
Cohan, M.	Holles, C.	Mulville, J. W.
Condie, R. H. B.	Hourel, V. L.	Mutawe-Sekabanja, S.
Corner, E. A.	Howe, B. R. C.	Mutton, H. E. H.
Cruft, A. G.	Howlett, H.	Nassir, Rauf.
Davies, G. J.	Husain, A.	Nawdi, Mrs. R.
Davies, L. N. A.	Hussain, Q. A.	Needs, R. A.
Dean, Miss I.	Jackson, J. S.	Nelson, O. I.
Demian, E. P.	Jain, P. C.	Nicolopoulos, L. G.
Dix, B. H.	Jani, V. V.	Nwakoby, R. C.
Dodge, C. F. W.	Kavanagh, M. J.	O'Connell, W.
Dooddy, W. M.	Kevan, A.	Ogilvie, G. C.
Drummond, K. G.	Khan, Prof. S. U.	Oguagha, C. N.
Easter, K. R.	Kim, A. F.	Ogun, O.
Eferberha, O. M.	Kurihara, Prof. K. K.	Ohno, T.
Egonu, W. G.	Kuttiannan, S. R.	Okedina-Shodeinde, A. S.
Elliott, A. F.	Laleye, A. O.	Owen, F.
Evans, W. H.	Lall, S. S.	Pal, I. D.
Elman, O. R.	Lamb, R. T. B.	Parry, R. A.
Epale, S. J.	Landry, M.	Patel, K. K.
Everett, S. J.	Langer, F. G.	Patel, N. V.
Farmer, R.	Lee, P.	Peach, K. W.
Fatodu, T. O.	Leeks, R. A.	Peall, H. E.
Fels, E. M.	Lewis, J. P.	Pearson, H. H.
Fennamore, R. W.	Lincolne, E. R.	Pearson, J. A. A.
Fisher, S.	Livingston, W. M.	Perera, K. D.
Fogg, G.	Lo, T. K.	Perry, P. J. C.
Gaji, R. O.	Loughton, A. R.	Perryman, P.
Gibbs, C. G.	Luca, Prof. M. de.	Piper, Miss L. M.
Giwa-Osagie, M. A.	Lumsdon, J. P.	Plous, H. J.
Glanville, A. V.	McDiarmid, P. A.	Poon, W. C.
Glickfield, Prof. M. D.	MacFadden, F. A. R.	Price, F. S. L.
Glinieki, A.	Macer, R.	Rainer, D.
Grandy, R. F. J.	Mahhouk, A.	Rao, B. T. P.
Hampson, A. E.	Mahomed, S.	Rao, V. V. N.
Harding, G. W.	Maneckji, F.	Rennison, J.
Hasan, M. S.	Mann, D. F. V.	Reynolds, A. C.
Healey, D. T.	Menon, V. R.	Rice, T. J. McD.
Hian, L. S.	Millis, D. M.	Richardson, E. M.
Hills, E. H.	Mills, E. S.	

Rizkalla, S. K.	Stinchcombe, R. G.	Vickery, J. B.
Rodgers, A. R.	Stone, I.	Wald, N.
Rogers, S. J.	Sudarsky, Mrs. D.	Walker, H. L.
Rubenstein, M.	Sun, L. K.	Ward, I. D. S.
Sarna, S. R.	Swain, F.	Wee, T. C.
Savill, P.	Tai, S. T.	Whiteley, A. S.
Schollet, C. A.	Talaat, A.	Whitfield, J. H.
Seng, L. H.	Tangri, Prof. C. L.	Williams, M. M.
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VOL. II, No. 1, FEBRUARY 1953. *Italy, Africa and European Unity. Electoral Systems in Italy. Italian Women in the Life of the Nation. Methane Prospects.*

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VOL. 90, No. 3-4, 1952. *Geiger and his Last Book*: F. ZEUTHEN. An obituary and review. *Some Considerations Concerning Industrial Productivity*: H. STEVENIUS-NIELSEN. The author of this paper is an industrialist. He points out the dangers of discussing general changes in productivity as shown by dividing a production index with an employment index, and gives some examples for particular industries to show how change in effort spent on packing products makes gross productivity figures misleading. Danish productivity is not as low as Danish-American productivity reports might suggest, since these naturally concentrated their attention on inferior Danish plants. The author then stresses that wages are not the only cost and discusses past and expected future changes in the labour intensity of Danish industry. He concludes by stressing the need for a favourable economic climate if productivity is to be raised. *The Position of Danish Agriculture in International Competition*: AKSEL MILTHERS. *Dynamic Considerations in the Precautionary and Speculative Motives for Liquidity*: H. SCHLEBAUM LARSEN. A shift along a speculative liquidity-preference curve will gradually cause a shift in the curve as the change in the actual rate of interest leads to a change in the expected rate of interest. This is illustrated diagrammatically.

VOL. 90, No. 5-6, 1952. *The Budget and its Problems*: THORIKL KRISTENSEN. An address to the Danish Economics Association by the finance minister. *A Comparison between current cost theory and the cost theory of Jantzen*: HANS BREMS. Ivar Jantzen is an engineer who has published several papers on cost theory (which have appeared in book form in English). He considers production as made up of a number of stages; in each stage there is one durable lumpy factor, so that marginal cost shoots up each time another unit has to be added. The effect of different degrees of lumpiness in different stages is discussed, and Dr. Brems concludes by claiming that Jantzen's analysis is superior in three respects: (1) the division into stages, (2) emphasis on the limited possibilities of substitution between the durable and other factors, and (3) constant average variable costs as a first approximation. *New Orientation in Monetary Policy*: ERIK HOFFMEYER. A long article. Part I surveys monetary policy since the war in the U.S.A., England, Sweden and Denmark. Part II discusses the aims, techniques and effectiveness of monetary policy. *The regulation of socially undesirable restrictions on competition*: M. G. SØRENSEN. Review article about an important official Swedish report on restrictive practices.

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VOL. XLIII, No. 270, OCTOBER 1952. *Features of Expansion and Contraction in the Egyptian Economy*: Y. MOLLA. *The Trade Pattern of Developing Countries*: Z. HASHEM. *Le Problème de l'endettement rural en Egypte*: J. G. ECONOMIDES. *Aperçu sur l'exécution de la Réforme Agraire en Italie*: G. VAUCHER.

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VOL. V, No. 4, DECEMBER 1952. *Sobre a observação estatística das finanças públicas*: A. C. LEAL and J. M. S. FALCAO. *Algumas características da agricultura portuguesa encardas na sua conexão com o mercado*: A. CASTRO. *Alguns aspectos da indústria portuguesa no enquadramento económico nacional*: H. C. PEREIRA. *A actividade resseguradora do ponto de vista financeiro*: A. DA C. MIRANDA. *O crédito de fomento em Angola*: A. S. GONÇALVES.

El Trimestre Económico

VOL. XIX, No. 4, OCTOBER-DECEMBER 1952. *Restauración, revisión y tercer camino*: J. R. HEROLLES. *La mecánica del desarrollo económico*: H. W. SINGER. *Estructura bancaria y política monetaria de El Salvador*: J. MÁRQUEZ and E. MONTEALEGRE.

Boletín de Estudios Económicos

VOL. VIII, No. 28, JANUARY 1953. *Reforma de la contribución general sobre la renta*: J. A. SÁNCHEZ-ASIAIN. *El empresario y el monopolio*: M. GARAU. *Orígenes del capitalismo en Vizcaya*: J. M. PÉREZ-AGOTE Y POVEDA. *Ordenación de conceptos en la teoría cuantitativa. Nueva formulación de la velocidad del dinero*: J. M. RODRÍGUEZ-LAUCIRICA. *Las sociedades de capitalización*: F. DEL BARRIO PETRALANDA.

Revista de Ciencias Económicas

VOL. XL, SERIES III, No. 36, JULY-AUGUST 1952. *La contabilidad de las empresas ante la fluctuación de los valores monetarios*: S. MOUSSATCHE. *A propósito de la dialéctica*: J. R. MUSSO.

Osaka Economic Papers

VOL. I, No. 1, MAY 1952. *An Introduction to Sociological Economics: Implications of Keynesian Theory*: Y. TAKATA. *Structure of Pyramid Holding Companies*: K. MESAKI. *Two Types of Cash Balances*: T. ICHITANI. *Unemployment Insurance in Osaka City*: T. HIRATA. *Some Aspects of Exchange Equilibrium*: S. SOBAYAMA. *A Theory of Composite Commodity*: T. YOKOHAMA. *A Study on the Distinction between Capital and Income*: K. KIUCHI. *On the Laws of Change of the Price-System in an Economy which contains Complementary Commodities*: M. MORISHIMA.

Statistikai Szemle (Hungarian text)

DECEMBER 1952. *The Law on State Statistics: Text, Exposé and Parliamentary Debate. Current Problems of Mechanisation in Industry and Building*: I. RYZHOV. *Some Present Day Tasks in the Analysis of Variations in Costs of Production*: O. GADÓ and L. FESZLER. *The Tasks of Financial Statistics*: J. SZÁSZ. *The Organization of Statistics on Public Instruction*: E. SZABADY.

JANUARY 1953. *Defects in Reports Prepared by Ministries*: J. GARAM. *Improve Building Materials Accounting*: A. HAJDUNÉ KÖVESDI. *The British Census of 1951*: R. DARWIN. *Better Accounting with More Accurate Statistics of Costs of Production*: L. TÜT. *The Statistical Treatment of New Fixed Capital*: M. DYACHKOV.

Voprosy Ekonomiki (Russian text)

No. 10, 1952. *Speech to the XIX Party Congress*: J. V. STALIN. *A Great Contribution to the Treasury of Marxism-Leninism. The Fundamental Economic Law of Contemporary Capitalism*: M. RUBINSTEIN. *The Fundamental Economic Law of Socialism*: G. KOZLOV. *The Majestic Plan for the Development of the Economy of the U.S.S.R.*: I. SHIRINSKY. *The Peculiarities of Investment and the Crisis in Contemporary Capitalism*: I. TRAKHTENBERG. *Three Years of the Chinese*
No. 250.—VOL. LXIII. L I

- Peoples' Republic : E. KOVALEV. *Statistics as a Science* : V. NEMCHINOV.
- No. 11, 1952. *35 Years since the October Revolution. On the Character of Economic Laws under Socialism* : A. RUMYANTSEV. *The Basic Means of Technical Progress in the Period of Transition from Socialism to Communism* : A. ARAKELYAN. *The Economic Importance of the "Lenin" Volga-Don Canal* : M. MABAKHANOV. *Reactionary American Economists-Preachers of Militarism and Aggression* : Y. POKATAEV. *The Struggle of French Workers against the Imperialist Hunger Policy* : V. LYUBIMOVA. *The Stalinist Theory of the Collectivisation of Agriculture* : M. KRAEV. *The Subject Matter and Essence of Statistics* : P. RABINOVICH.
- No. 12, 1952. *Comrade Stalin's Replies to the Questions of James Reston, Diplomatic Correspondent of the New York Times, 21 December 1952. J. V. Stalin on Commodity Production and the Law of Value under Socialism* : I. VYAZMIN. *The Increase of Workers' Qualifications in U.S.S.R. Industry* : O. GUBAREVA. *The Aggravation of Contradictions and the Inevitability of War between the Capitalist States* : I. LEMIN. *The Anti-Popular Essence of the so-called "American Way of Life"* : M. BASKIN. *Questions of the Industrial Development in Russia* : S. STRUMILIN. *The Aggravation of the Uneven Development of Capitalism in the Period of the General Crisis of the World Capitalist System* : M. KAMYSHIN.
- No. 1, 1953. *Wholly Overcome the Errors and Radically Improve the Work of Soviet Economists. J. V. Stalin on the Fundamental Preconditions for the Preparation for the Transition to Communism* : A. LAPIN. *On the Concept of Product-Exchange* : N. SMOLIN. *The Upsurge of U.S.S.R. Industry in the Five-Year Plan* : P. KHROMOV. *The National Liberation Movement among the Peoples of the Near and Middle East* : G. AKOPYAN. *The Export of Capital—a Means of Securing Maximum Profits for United States Monopolies* : V. SOLODOVNIKOV. *Lenin's Plan for Co-operatives* : M. ILIN. *The Economic Views of N. V. Shelgunov* : F. MOROSOV.

Planovoe Khozyaistvo (Russian text)

- No. 5, 1952. *Speech to the XIX Party Conference* : J. V. STALIN. *The Great Stalinist Teaching on the Laws of Development of Socialist Economies. The Historic Decisions of the XIX Conference of the Communist Party of the Soviet Union. The Teaching of Comrade Stalin on the Basic Conditions for Preparing the Transition from Socialism to Communism* : G. PETROV. *Socialist Industry in the Fifth Five-Year Plan* : G. SOROKIN. *New Possibilities for the Development of Socialist Agriculture in the Fifth Five-Year Plan* : S. DEMIDOV. *Aggravation of the Struggle for Markets in the Imperialist Camp* : L. BOLSHAKOV and V. MORDVINOV.

Vestnik Statistiki (Russian text)

- No. 4, 1952. *On the Eve of the XIX Congress of the C.P.S.U. (B). For an Improvement in the Level of Work in Local and Town Inspectorates of the Central Statistical Administration of the U.S.S.R.* V. I. Lenin on the Aims, Forms and Methods of Statistical Observations : T. KOZLOV. *Current Accounting Problems of Labour Mechanisation in Industry and Construction* : I. RYZHOV. *Questions of Subject Matter and Method in Statistics* : I. SHULGIN. *The Post-war Economic Expansion of American Imperialism* : M. DOBBOV. *Planning the Work of a Local or Town Inspector of the Central Statistical Administration* : B. KOLPAKOV. *Experience in Checking the Census of Material Resources by the Statistical Administration of Gorky Oblast* : V. KAYUROV. *Experience in Organising the Census of Material Resources* : G. LATYSHEV. *Working Experience in Improving Accounting Methods concerning Collective Farm Livestock* : E. VOLKHOVITINOVA. *The Subject Matter and Methodology of Statistics* : I. SUSLOV.
- No. 5, 1952. *Speech at the XIX Party Congress* : J. V. STALIN. *The Contribution of a Genius to the Treasury of Marxism. The XIX Congress*

- of the Party of Lenin-Stalin. The XIX Congress of the Communist Party and the Tasks of Soviet Statistics* : V. STAROVSKY. *The National Economic Significance of the "Lenin" Volga-Don Ship Canal* : F. KOSHELEV. V. I. Lenin on the Objects and Unity of Statistical Observations : L. KASINETS. *On the Classification of the Branches of Material Production* : P. MOSKVIN. *The Economy of the Chinese People's Republic in a Great Upsurge* : G. ASTAFEV.
- No. 6, 1952. *The Fifth Five-Year Plan and the Next Tasks for Industrial Statistics* : A. EZHOV. *Capital Construction in the Fifth Five-Year Plan and the Tasks for Statistics Thereof* : K. VINOGRADOV. *Problems of Indices of Manpower Utilisation* : M. ILEVSKY. *Problems of Soviet Statistics as a Science* : I. KAGANOVICH. *Concerning the Erroneous Articles of Comrades Chermensky, Mikhailov and Sobol* : I. PISAREV. *Bourgeois Apologetics in British Mortality Statistics* : A. BOYARSKI. *The Mechanisation of Accounting in the State Bank of the U.S.S.R.* : I. KOLYCHEV. *Working Experience in the Preparation of Annual and Current Reporting in Capital Construction* : A. ZUBAREV. *A New Pro Forma for the Monthly Livestock Reports of Collective Farms* : A. BRYANSKY. *Checking the Economic Reports of Rural District Councils* : G. ZHUYKOV.

Probleme Economice (Rumanian text)

- VOL. V, NO. 12, DECEMBER 1952. *The Replies of J. V. Stalin to the Diplomatic Correspondent of the New York Times. Speech of Gh. Gheorghiu-Dej at a Meeting of Constituents in the Grivița Roșie Electoral District, Bucharest. The Fifth Anniversary of the Rumanian People's Republic. J. V. Stalin on Commodity Production and the Law of Value under Socialism* : G. KOZLOV. *J. V. Stalin on the Objective Nature and the Characteristic of Economic Laws* : C. SABIN. *The Development of Soviet Agriculture under the Fifth Five-Year Plan* : A. PRIADCENCU. *Norm fixing for Material Input in Production* : R. CIOROIU. *The Peaceful Economic Construction of the German Democratic Republic and the Militarization of the Economy of Western Germany* : L. MEDIANU. *The United States Economy—a War Economy* : D. MARINESCU. *The Economic Significance of Michurinism for Our Agriculture* : M. MANOLIU.

Finansy i Kredit (Bulgarian text)

- No. 10, DECEMBER 1952. *Capital Construction in the U.S.S.R. and in Bulgaria* : D. SAPUNDZHIEV. *Savings—an Important Factor in the Finance of our Socialist Construction* : A. STOYANOV. *State Taxes in the People's Republic of Bulgaria* : KH. NIKOLOV.

Ekonomist (Serbian text)

- No. 4, 1952. *The Sixth Congress of the Yugoslav Communist Union and the Tasks of Economists* : R. DAVIDOVIĆ. *Experience Drawn from the Application of the New Economic System* : B. JOVANOVIĆ. *Concerning a Discussion on the Law of Value* : M. GAVRIĆ. *New Forces in the Development of the Social Structure of the Leadership of Co-operative Farms in Serbia* : M. VUČKOVIĆ. *The Extension of the Foreign Exchange Monopoly of the Soviet Union* : V. MILENKOVIĆ. *Boundary Adjustment of the Land of Working Co-operatives in the Voivodina* : B. PROTIC. *German and Hungarian Reparations and Restitution Supplies in our Industry* : V. PEJOVSKI. *The Natural Resources of the Kosovo and Metohija Regions* : S. BLAGOJEVIĆ. *The International Wheat Agreement* : DJ. LADJEVIĆ.

NEW BOOKS

British

ALEXANDROWICZ (C. H.). *International Economic Organisations*. London: Stevens, under the auspices of the London Institute of World Affairs, 1952. 8½". Pp. vii + 263. 30s.

[The organisations here described include not merely the large number of governmental and other bodies functioning at the present time but also their predecessors, and the author is at pains to trace the process by which contemporary organisations have evolved into their present shape from earlier forms. Although the author is only secondarily concerned to assess the actual achievements of the various organisations, he provides much useful information on this as well as on their constitutions and rules of operation. Mr. Alexandrowicz is Professor of International and Constitutional Law in the University of Madras.]

All About Beer. *Portrait of a traditional industry*. London: The Statist, 1952. 9½". Pp. 104. 5s.

[This is the first of a series of booklets on British industries to be published by the *Statist*. It begins with a survey of the structure of the industry, and then touches briefly on all aspects of the brewing, licensed and allied trades. The illustrations are helpful; the tone is laudatory and uncritical.]

BELLAMY (J.) and WEBB (M.). *The Foreign Trade of Humberside*. A study in post-war trade trends. Hull: University College of Hull, 1952. 13". Pp. 61 and Statistical Appendices.

[This is a study based on the Annual Statements of Trade and the monthly Trade and Navigation Accounts. Changes in the structure and volume of trade in total and by commodities and commodity groups for the Humber ports between 1938 and 1946-49 are compared with the corresponding trends for the volume of United Kingdom foreign trade as a whole. The proportion of United Kingdom trade passing through Humberside was less in 1946-49 than it had been before the war, and in 1949 the volume of activity of the Humber ports taken as a group had not yet regained its 1938 level. In this respect, as in others, the experience of Goole has been somewhat different from that of Hull and Grimsby, since exports are much more important relative to imports in Goole than in the other two ports. Consequently the volume of Goole's trade, unlike that of the region as a whole, was greater in 1949 than in 1938.]

BENNETT (L. G.). *The Horticultural Industry of Middlesex*. Reading: University of Reading Department of Agricultural Economics, 1952. 9½". Pp. 70. 10s.

[This scholarly monograph is divided into two parts. The first traces the history of horticulture in Middlesex since the earliest times, with special reference to the last 150 or so years. The second contains a detailed survey of the present-day structure of the industry. The great problem facing the industry now, as it has been in the past, is, of course, the demand on land made by the growth of Greater London. The author concludes with some suggestions on how the industry can best adapt itself in face of the seemingly inevitable decline in the acreage devoted to horticulture in Middlesex in the future.]

BRITISH ELECTRICAL DEVELOPMENT ASSOCIATION. *Higher Industrial Production with Electricity*. London: British Electrical Development Association, 1953. 9". Pp. v + 146. 9s.

[This is the introductory volume of the series on "Electricity and Productivity," published by the Electrical Development Association, of which eight titles have so far been announced.]

CANNAN (E.). *A History of the Theories of Production and Distribution from 1776 to 1848*. Third Edition reprinted. London: Staples, 1953. 8½". Pp. v + 336. 21s.

[A reprint is now made available of this celebrated work, which originally appeared in 1898.]

CAREY JONES (N. S.). *The Pattern of a Dependent Economy*. A study of the national income of British Honduras. Cambridge: Cambridge University Press, 1953. 8½". Pp. vii + 162. 21s.

[To be reviewed.]

CHAPMAN (AGATHA L.) assisted by KNIGHT (ROSE). *Wages and Salaries in the United Kingdom 1920-1938*. Studies in the national income and expenditure of the United Kingdom, No. 5. Cambridge: Cambridge University Press, 1953. 12½". Pp. v + 254. 55s.

[To be reviewed.]

COAL UTILISATION COUNCIL. *A Survey into the Domestic Use of Solid Fuel and Solid Fuel Appliances in Great Britain*. London: Coal Utilisation Council, 1953. 9½". Pp. 63. 6s.

[This forms a useful supplement to the report of the Ridley Committee. It is based on a sample survey conducted by the Research Department of Mather and Crowther, Ltd., relating to methods of space heating, water heating and cooking actually in use in British households. Among the interesting results emerging is the large proportion of houses in which the heating appliance in the living-room also serves as a cooker—an important indication of the type of appliance required for the reconditioning of older houses. The inquiry also included questions put to householders on preferences between different methods of heating and on whether at current prices they would buy more solid fuel if restrictions were removed. Another interesting section relates to fuel-storage facilities. The results in the statistical tables are broken down by social status of householders and type and age of house.]

CRAIG (SIR JOHN). *The Mint*. A history of the London Mint from A.D. 287 to 1948. Cambridge: Cambridge University Press, 1953. 9½". Pp. vii + 450. 70s.

[To be reviewed.]

FENELON (K. G.). *Britain's Food Supplies*. London: Methuen, 1952. 7½". Pp. 212. 15s.

[To be reviewed.]

GAYER (A. D.), ROSTOW (W. W.) and SCHWARTZ (A. J.). *The Growth and Fluctuation of the British Economy 1790-1850*. An Historical, Statistical, and Theoretical Study of Britain's Economic Development. In 2 volumes. London: Oxford University Press, 1953. 9½". Pp. v + 1028. 84s.

[To be reviewed.]

HOBSON (O. R.). *A Hundred Years of the Halifax*. The history of the Halifax Building Society, 1853-1953. London: Batsford, 1953. 9". Pp. v + 190.

[To be reviewed.]

INTERNATIONAL ASSOCIATION FOR RESEARCH IN INCOME AND WEALTH. *Bibliography on Income and Wealth, Volume II, 1948-1949*. Edited by Phyllis Deane. Cambridge: Bowes & Bowes, 1953. 10". Pp. v + 109. 37s. 6d.

[The publication of Volume II of this remarkable series follows on that of Volume I (noticed in the *Economic Journal* of September 1952, p. 697) with admirable promptitude. The present volume fully maintains the standard, and in fact improves on it by the elimination of a number of minor editorial faults present in the first volume.]

HUTCHISON (T. W.). *A Review of Economic Doctrines 1870-1929*. London: Oxford University Press, 1953. 9". Pp. v + 456. 30s.

[To be reviewed.]

KEIRSTEAD (B. S.). *An Essay in the Theory of Profits and Income Distribution.* Oxford: Blackwell, 1953. 8½". Pp. 110. 10s. 6d.

[To be reviewed.]

KING EDWARD'S HOSPITAL FUND FOR LONDON. *Report on Costing Investigation for the Ministry of Health.* London: King Edward's Hospital Fund, 1952. 13". Pp. 91. 6s.

[A report on an inquiry carried out in co-operation by the King Edward's Hospital Fund and the Nuffield Provincial Hospitals Trust. The conclusion in favour of departmental costing is in accord with the conclusion reached by the Nuffield Trust in the report on the part of the inquiry conducted by them. The latter report was noted in the last number of the *Economic Journal*, p. 247.]

KUZNETS (S.) and GOLDSMITH (R.). *Income and Wealth of the United States: Trends and Structure.* Income and Wealth Series II. Cambridge: Bowes & Bowes, 1952. 8½". Pp. v + 328. 35s.

[To be reviewed.]

MACKENZIE (A. D.). *The Bank of England Note. A history of its printing.* Cambridge: Cambridge University Press, 1953. 7½". Pp. v + 163. 15s.

[To be reviewed.]

The Middle East 1953. A survey and directory of Arabia, Cyprus, Egypt, Iraq, Israel, Jordan, the Lebanon, Libya, Persia, the Sudan, Syria, and Turkey, with geographical, historical, economic and educational surveys, concise information about political, industrial, financial and cultural organisations, and Who's Who in the Middle East. London: Europa Publications, 1953. 10". Pp. vii + 430. 60s.

[The present edition of this well-known work of reference follows the general lines laid down in its predecessors. It has been expanded in various respects, notably on the geographical side, and has been revised to take account of the many far-reaching changes that have occurred in the Middle East in the last couple of years. As is no doubt inevitable in a work of this type, the economic sections are descriptive rather than analytic.]

Monopoly and Public Welfare. By a Study Group in the University of Natal. Pietermaritzburg: University of Natal Press, 1952. 8½". Pp. 229. 16s.

[This volume is composed of a number of individual studies introduced and tied together by Prof. H. R. Burrows. It starts with the experience and legislation in relation to monopoly in Europe and the United States in two chapters both written by Mr. L. Fourie. It goes on in Part II to an appraisal of theory and forms of analysis, and general conclusions regarding effects on price-output and welfare, contributed by Mr. C. M. F. Bruce and Mr. Z. S. Gurzynski and discussions of forms of monopolistic competition provided by Mr. I. K. Allan and Mr. L. P. Green. Part III discusses past legislation in South Africa and proposals for the future, both as recommended by Report No. 327 of the Board of Trade and Industries and as the present authors would like to see it. It prints in convenient form the actual proposals and provides a useful general source of information. The authors have themselves prepared an alternative draft bill, which they believe would provide a better compromise between the need to preserve the interest of the public and to give a system of control, subject to legal safeguards and parliamentary control, but at the same time independent of the executive.]

MOUNSEY (J.). *An Introduction to Statistical Calculations.* London: English Universities Press, 1953. 7½". Pp. v + 351. 15s.

[The aim of this book is clearly stated in the author's preface: it is to assist students in Commercial and Technical colleges through examinations in statistics. There is also a suggestion, or perhaps a hope, that it may fulfil a rather wider purpose; but this is unlikely. To achieve its main end a very extensive selection of calculations are carefully described, examples are worked out *in extenso*, and many exercises (with numerical answers) are provided. The book will un-

doubtedly be extremely useful for the narrow purpose for which it has been designed. There are, however, grounds for regretting that the author has chosen to use his considerable skill in producing an excellent candidates' companion rather than attempting to widen understanding of the basic principles of the subject.]

NATIONAL INSTITUTE OF ECONOMIC & SOCIAL RESEARCH. *10th Annual Report, 1952.* London: N.I.E.S.R., 1952. 9½". Pp. 36.

[This report contains a full account of the current activities of the Institute, together with details of its forthcoming publications. Research projects now well advanced include those relating to consumers' expenditure, retail trading, migration and location of industry; work at an earlier stage is in progress on the finance of public companies, the stock of capital assets, British economic statistics and the recruitment of industrial personnel. The report states that it is intended that in the future fields of study on the borderland between economics and the other social sciences should occupy a somewhat larger place in the Institute's research programme.]

PAGE ARNOT (R.). *The Miners. A history of the Miners' Federation of Great Britain from 1910 Onwards. Years of Struggle.* London: Allen & Unwin, 1953. 9". Pp. 567. 35s.

[To be reviewed.]

RHYS-WILLIAMS (JULIET). *Taxation and Incentive.* London: William Hodge, 1953. 8½". Pp. 188. 15s.

[Reviewed in this issue.]

ROBINSON (H.). *Britain's Post Office. A history of development from the beginnings to the present day.* London: Oxford University Press, 1953. 9". Pp. v + 299. 21s.

[To be reviewed.]

ROSTOW (W. W.). *The Process of Economic Growth.* Oxford: Clarendon Press, 1953. 9". Pp. v + 282. 25s.

[To be reviewed.]

ROYAL INSTITUTE OF INTERNATIONAL AFFAIRS. *Annual Report of the Council 1951-1952.* London: Royal Institute of International Affairs, 1952. 9". Pp. 71. 1s.

[A summary account is given of the many activities of Chatham House and its branches and of the Institutes of International Affairs in the Commonwealth.]

SCOTT (J. F.) and LYNTON (R. P.). *The Community Factor in Modern Technology.* Paris: Unesco, 1952. 8½". Pp. 169. 6s.

[To be reviewed.]

SCOTT (J. F.) and LYNTON (R. P.). *Three Studies in Management.* London: Routledge & Kegan Paul, 1952. 8½". Pp. 220. 18s.

[To be reviewed.]

SHACKLE (G. L. S.). *Expectation in Economics.* 2nd Edition. Cambridge: Cambridge University Press, 1952. 6½". Pp. vii + 144. 7s. 6d.

[The first edition of this book was the subject of a review article by Professor C. F. Carter in the *Economic Journal* of March 1950. In the present revision Professor Shackle has made certain alterations and corrections in the light of criticisms and suggestions put forward by reviewers of his first edition and by others who have since made contributions to the subject. A list of relevant recent published work is provided in a new preface.]

SHEHAB (F.). *Progressive Taxation. A study in the development of the progressive principle in the British income tax.* London: Oxford University Press, 1953. 8½". Pp. 299. 27s. 6d.

[To be reviewed.]

SILVERMAN (H. A.). *The Groundwork of Economics*. 4th Edition. London: Sir Isaac Pitman, 1953. 7½". Pp. v + 141. 8s. 6d.

[To be reviewed.]

SOLOMONS (D.) (Ed.). *Studies in Costing*. Edited on behalf of the Association of University Teachers of Accounting. London: Sweet and Maxwell, 1952. 10". Pp. v + 643. 35s.

[To be reviewed.]

STEINDL (J.). *Maturity and Stagnation in American Capitalism*. Oxford University Institute of Statistics, Monograph No. 4. Oxford: Blackwell, 1952. 9½". Pp. v + 248. 30s.

[To be reviewed.]

TOYNBEE (A.) and ASHTON-GWATKIN (F. T.) (Eds.). *The World in March 1939. Survey of International Affairs, 1939-1946*. London: Oxford University Press (under the auspices of the Royal Institute of International Affairs), 1952. 9½". Pp. xvi + 546. 45s.

[This volume has already been widely reviewed in other journals. Its interest is essentially political, and the treatment of economic issues by H. C. Hillmann in Part II of the book is chiefly concerned with their military and political implications. The author here provides a useful though not on the whole very original survey of the economic preparations for war made by the great powers in the 1930s.]

VINER (J.). *International Trade and Economic Development*. Lectures delivered at the National University of Brazil. London: Oxford University Press, 1953. 7½". Pp. 120. 12s. 6d.

[In these provocative lectures Professor Viner gives his readers a great deal to think about and goes out of his way to tread on a good many corns in the process. In the earlier lectures his chief objective is to show that the modern reaction against the classical theory of international trade, both in its real and in its monetary aspects, has been pushed too far. The subsequent lectures deal with the relation between government economic planning and foreign trade—Professor Viner here reiterates his well-known view that stable conditions of international trading are impossible in a world of planned economies—and conclude with a discussion of the obstacles standing in the way of the development of poor countries, emphasising here the erroneousness of thinking of development necessarily in terms of industrialisation. The treatment is discursive, and a wide range of related topics are touched on. Professor Viner contrives to pack a great deal of interesting if not on the whole very novel material into a small compass, and the forcible and lucid presentation of the argument is extremely stimulating. At the same time it must be said that at several points there is more than a suspicion of special pleading. Two examples may be quoted. In order to criticise the stagnation thesis, Professor Viner states it in what is surely a quite unnecessarily untenable form: few economists nowadays would maintain, as he implies, that in the future the alternation of boom and slump is likely to cease and to be replaced by a continuous unremitting slump; the suggestion is rather that booms will be anæmic and/or short and slumps severe and/or protracted. The statement (p. 66) that "a priori, the most reasonable assumption would seem to be that [price- and income-elasticities of demand] would in general be approximately equal" is surely an example of the danger of trying to deduce probabilities without evidence, since the two types of elasticity stand on quite a different footing. But if Professor Viner's destructive comments are at times overstated and occasionally have an air of superficiality, his conclusions are invariably good tempered, reasonable and judicious.]

ZWEIG (F.). *The British Worker*. London: Penguin Books, 1952. 7". Pp. 243. 2s. 6d.

[Dr. Zweig has established for himself by his previous publications a reputation as a prolific and highly individual writer on the human aspects of industrial society in Great Britain. In the present book he has drawn on the results of his work over a period of years to give a general picture of the life and character of the

working-man in urban Britain, making large use of quotations from remarks and statements made to him by working-men in his conversations with them. The result is a document remarkable for its imaginative understanding and freshness of approach. Mention of some of the leading topics may give some idea of its scope: they include the economic and personal relationships between members of the working-class family, the attitude to work, to money and to politics, the intense preoccupation with sport, and the differences between the outlook and interests of men of different ages—with the perennial problem here of distinguishing differences due to the life-cycle of the individual from those due to changes in social mores from one generation to another. The faults of the book are on the surface: the jerky style, the occasional tendency to excessive generality and on some points judgments which one cannot but feel to be misconceived. It may be, too, that relatively little of what Dr. Zweig says will be unfamiliar to readers with a broad experience of working-class life. But that does not mean that it was not amply worth while to have it written down and set in perspective, for the benefit both of social workers with middle-class backgrounds and of historians in later generations—for had there been a Dr. Zweig at work in 1850, would not his book be among the most valued sources available to the social historian?]

Indian

CHANDRASEKHAR (S.). *Hungry People and Empty Lands*. Baroda: Indian Institute for Population Studies 1952. 10". Pp. 306. Rs. 15/-.

[Prof. Chandrasekhar, who is head of the Department of Economics of the University of Baroda, and formerly in charge of demographic research in UNESCO, argues that uncontrolled human fertility presents one of the world's greatest problems. World population is increasing by about 25 millions a year, and has grown from about 1,100 millions in 1850 to about 2,400 millions in 1950. The practical and political problems are immensely increased by the facts that the growth is very unequal in different regions and that initially the regions are very unevenly populated. There are a group of "full" lands with something in excess of 400 per square mile in the more heavily populated countries of Europe and Japan, closely followed by India, China and Indonesia, where density is near to or in excess of 100 per square mile (India is over 260 per square mile). On the other hand, there is a group of "empty" lands in most of which density is under 5 per square mile. Prof. Chandrasekhar is principally worried about the possibilities of migration from the points of acute population pressure in South-east Asia to some of the "empty" areas in the Pacific and in Africa. He assumes that the overcrowded areas of Europe can and will find a solution to their problems in the thinly settled "white" countries. His book represents a scholarly and scientific study of the very real difficulties of policies both to control and limit population growth and to relieve the pressures where they have become acute. "What is needed in Asia is to make every woman deliver one baby where she delivered two or more before and make two blades of grass grow where one grew before."]

DATTA (BHABATOSH). *The Economics of Industrialisation*. Calcutta: The World Press, 1952. 8½". Pp. v + 291. 21s.

[The author, who is Professor of Economics in Presidency College, Calcutta, began this study as a Ph.D. Thesis at the London School of Economics, but has evidently enlarged and developed it subsequently. He begins by stressing the importance of approaching the whole problem of industrialisation not (as was customary down to the 1930s) from the angle of increasing national power or reducing dependence on imports but rather from the angle of high-income employment for underemployed agricultural workers. He argues that even if active measures are taken to develop agriculture and to make more land capable of cultivation by irrigation and the like, there will still remain a large underemployed population with holdings considerably below the optimum, and that this number will be constantly reinforced by population growth if nothing is done to raise standards and reverse the present population trends. He goes on, therefore, to study skill-formation, capital requirements, the place of foreign capital in development and the implications for foreign trade. Prof. Datta ends on a note of moderate optimism, but he has managed to produce a study in which realism and willingness to face difficulties are much more evident than in many such books.]

GORWALA (A. D.). *The Role of the Administrator: Past, Present and Future*. Poona: Gokhale Institute of Politics and Economics, 1952. 8½". Pp. 44. Rs. 2/-.

[This is the Kale Memorial Lecture for 1952. The lecturer looks back on a life of Indian Civil Service administration covering the period 1924-47 and attempts to see the contrasts between the earlier and later phases. He gives a charming, kindly and appreciative account of many of the best features of the training and traditions of the Indian Civil Service, and of the way that a young member of the Service learned the standards required by it and the moral and physical courage that was demanded of him. But he retains a perspective that enables him also to see its weaknesses: the concentration on the duties of the "Security State"; the fact that "there was a certain kind of economic development . . . following the accepted pattern of state works, the provision of irrigation or of electrical power . . . but it was development not based on any economic ideology." He contrasts with this earlier period the hectic improvisations of the war years and the avalanche of new duties, combined with shortage of staff, which came with independence, but above all the new relation of the administrator to his Minister and to the people that he is administering under a democratic regime. Mr. Gorwala is as frank and forthcoming, and at the same time as understanding and sympathetic, about these as about the earlier phase. Indeed these forty-four pages give a better picture of what has happened to Indian administration than almost anything else available.]

PATEL (S. J.). *Agricultural Labourers in Modern India and Pakistan*. Bombay: Current Book House, 1952. 8½". Pp. 169.

[Dr. Patel, who is working in the U.N. Department of Economic Affairs and the Technical Assistance Administration, wrote this study as a Ph.D. Thesis at the University of Pennsylvania. It brings out the alarmingly rapid growth of a class of landless labourers, partly as a consequence of the decline of rural handicrafts and of the integrated life of the Indian village with its joint dependence on agriculture and local handicraft production, but partly also as a result of population growth. Unfortunately, changes of definition in the Censuses make the measurements very uncertain, and it is sometimes difficult to feel satisfied that Dr. Patel is not placing excessive reliance on the accuracy of very uncertain evidence, but is it very obvious that here is a problem of great and growing importance and danger.]

SHROFF (A. D.). *The Conciliation and Arbitration of Industrial Disputes in India*. With special reference to Bombay Province. Bombay: The Popular Book Depot, 1953. 8½". Pp. vii + 270. Rs. 16/4.

[After a general discussion of the basic principles of conciliation, mediation and arbitration this book examines their history in India, with rather special reference to Bombay Province. The modern Labour Code dates from 1922, but the first and important Trades Disputes Act was in 1929, amended by a number of subsequent Amendment Acts, and finally replaced by a new Act of 1947. Miss Shroff believes that on the whole the legislation has improved relations, but does not think that any such legislation alone can establish industrial peace.]

SOVANI (N. V.). *Social Survey of Kolhapur City*. Vol. II, Industry, Trade and Labour. Vol. III, Family Living and Social Life. Poona: Gokhale Institute of Politics and Economics, 1951. 9". Vol. II, pp. i + 346. Vol. III, pp. iii + 330. 18s. each volume.

[These two volumes in the series of surveys of the City of Kolhapur contain a great deal of detailed information about the industries and trade of the city and about living conditions. Since an octroi provides records of imports, there is very much more knowledge of the flow of goods and purchases than normally exists, and records go back a hundred years. Gold- and silver-smiths have throughout the period formed the pre-eminent industry of the city. There are, however, a large number of other industries, mostly on a relatively small scale. A great deal of information has been secured about trade and the turnover, capital employed and earnings from it. The study of living conditions and family life covers subjects as different as family size, housing conditions, occupational distribution, incomes and poverty, religious and social activities and the use of leisure. A final chapter deals with local government and public health.]

American

BALLANTINE (J. W.). *Formosa. A Problem for United States Foreign Policy*. Washington: The Brookings Institution, 1952. 8½". Pp. v + 218. \$2.75.

[The author surveys the background of the present situation with regard to Formosa and discusses the problems which it poses for United States foreign policy. Mr. Ballantine was for many years an officer of the United States Foreign Service, and his approach is that of the practising diplomatist rather than that of the academic student.]

CAMPBELL (W. V.), ENGLISH (R. J.) and LAMPROS (G.). *Current Operating Expenditures and Income of Higher Education in the United States, 1930, 1940 and 1950*. New York: Columbia University Press (London: Geoffrey Cumberlege), 1953. 8½". Pp. v + 97. 16s.

[This is described as a Staff Technical Paper of the Commission on Financing Higher Education, which in turn is sponsored by the Association of American Universities. It publishes figures for the three years 1930, 1940 and 1950 for a variety of different types of institution and a variety of different forms of expenditure. Total operating expenditure is shown as having risen from \$528 m. in 1930 to \$661 m. in 1940 and \$2,182 m. in 1950. It is not possible to say how much of this is due to increased scale of operations and how much to better coverage of the returns. New institutions are added in later years in part because they have entered the field of activity, in part because they have produced accounts in analysable form. Columbia University and Johns Hopkins University both had to be excluded, for example, from the 1940 figures, but are included for the other years. Despite such difficulties of interpretation, these tables will be of great interest to anyone concerned with university financial policy.]

CLEMENCE (R. V.). *The Economics of Defense. *A primer of American mobilization*. Harrisburg, Pennsylvania: Stackpole, 1953. 8½". Pp. v + 138.

[With this book Professor Clemence maintains but does not perhaps enhance the reputation as a writer of unusually lucid short text-books which he established with his earlier *Income Analysis* and (in collaboration with F. S. Doody) *The Schumpeterian System*. *The Economics of Defense* is really an introductory text-book on inflation written with special reference to the circumstances of American rearmament. The first few chapters contain a clear but very elementary exposition of circular flow model diagrams illustrative of "peacetime," "war" and "defense" economies. Later chapters deal with the various problems of inflation, the shifting of resources and direct and indirect controls. Most of this is well done at its chosen level of abstraction, but it is a pity that the section on cost-price inflation goes astray by neglecting the effect of wage increases on the money value of investment. A more general doubt is whether more than a very limited purpose can be served by a treatment which is entirely non-quantitative and which rests on such highly abstract assumptions as the prevalence of perfect competition in all markets except the labour market.]

NATIONAL BUREAU OF ECONOMIC RESEARCH. *Studies in Income and Wealth, Volume 15. Conference on Research in Income and Wealth*. New York: National Bureau of Economic Research, 1952. 9½". Pp. vii + 230. \$3.50.

[To be reviewed.]

COPELAND (M. A.). *A Study of Moneyflows in the United States*. New York: National Bureau of Economic Research, 1952. 9½". Pp. ix + 338 + 241 pages of appendices. \$7.50.

[To be reviewed.]

COWLES COMMISSION FOR RESEARCH IN ECONOMICS. *Economic Theory and Measurement. A Twenty Year Research Report, 1932-1952*. Chicago: Cowles Commission, 1952. 9". Pp. 180.

[The chief feature of this retrospective report is a long survey by Carl F. Christ of the personalities and activities of the Cowles Commission since the time

when it was founded in 1932 by Alfred Cowles. Cowles was the president of an investment counselling firm, and his interest in mathematical economics and statistics was originally aroused by an inquiry which he carried out into the accuracy of the predictions of professional stock-market forecasters during the period 1928-32].

DAVEY (H. W.). *Contemporary Collective Bargaining*. New York: Prentice Hall, 1952. 9". Pp. v + 532.

[An intelligent and well-arranged text-book designed for use by those actually engaged in the process of collective bargaining as well as by academic students. The coverage of the factual sections of the book is exclusively American, but some of the analytical chapters have more general application. Unusually full bibliographies are provided at the end of each chapter.]

DIEBOLD (W.). *Trade and Payments in Western Europe. A study in economic co-operation 1947-1951*. New York: Harper Brothers, for the Council on Foreign Relations, 1952. 8½". Pp. vi + 488. 40s.

[To be reviewed.]

FABRICANT (S.) (assisted by R. E. LIPSEY). *The Trend of Government Activity in the United States since 1900*. New York: National Bureau of Economic Research, 1952. 9½". Pp. vii + 268. \$4.0.

[To be reviewed.]

GERSCHENKRON (A.). *A Dollar Index of Soviet Machinery Output, 1927-28 to 1937*. Santa Monica, California: RAND Corporation, 1951. 9½". Pp. v + 357.

[Reviewed in this issue.]

HALEY (B. F.) (Ed.). *A Survey of Contemporary Economics. Volume II. Homewood, Illinois: Richard D. Irwin, for the American Economic Association, 1952. 9". Pp. v + 474.*

[To be reviewed.]

HALL (H. R.). *Some Observations on Executive Retirement*. Boston: Harvard University Graduate School of Business Administration, 1953. 8½". Pp. vii + 298. \$3.75.

[This is a study of the personal problems of retirement and of the ways in which business firms can help to prepare their executives to meet them. It is based principally on interviews with business administrators and retired executives.]

HANSEN (A. H.) and CLEMENCE (R. V.). *Readings in Business Cycles and National Income*. New York: W. W. Norton, 1953. 8½". Pp. v + 588. \$3.95.

[To be reviewed.]

HAZELETT (C. W.). *Practical Answers to Inflation, Unemployment Taxation and Political Leadership*. Greenwich, Connecticut: Incentivist Publications, 1952. 7½". Pp. 243. 50c.

[The system designated by the author "incentive taxation" and expounded by him in this book is based on two ideas. The first is the prevention of unemployment by a tax on idle money, and the second is the use of a tax on consumers' expenditure as the chief source of government revenue, the latter tax also being capable of use as an anti-inflationary instrument. Both ideas have respectable antecedents and have much to recommend them, as have also many of the detailed suggestions made by the author for the execution of his proposals. It is a pity that he distracts attention from the merits of his ideas by making exaggerated claims for them and by intemperate criticisms of views different from his own.]

HENDERSON (J. S.). *Production and Consumption. A Mathematical Reformulation*. Alabama: University of Alabama Press, 1952. 11". Pp. 83. \$2.

[The mathematician tends to see the central problem of economics as the theory of maximisation subject to constraint, and this point of view has received its most consistent exposition in Samuelson's *Foundations of Economic Analysis* (1947). In the present work (claimed to have been developed independently of that of Samuelson) Henderson systematically extends this approach by considering multiple constraints; this allows treatment, for example, of the theory of rationing, and the theory of long-run adaptation viewed as the relaxation of short-run constraints. The exposition is heavily mathematical and unnecessarily obscure. A shortened version of the central theme of this book has appeared in the January 1953 issue of *Econometrica* (pp. 155-68).]

ISARD (W.) and WHITNEY (V.). *Atomic Power. An Economic and Social Analysis*. London: Allen & Unwin, 1952. 9". Pp. vii + 235. 37s. 6d.

[This book, by a Harvard economist and a sociologist of Brown University, covers very much the same field as the book by Schurr and Marschak reviewed in the issue of December 1952. It begins with a brief attempt to summarise the technical background: its broad conclusion is that "until advances are achieved in nuclear engineering and hygiene so radical that they are not even in mind today, nuclear energy will be practically useful as a source of electric energy only where economic or political considerations justify a heavy capital investment in shields and machinery." Their estimate of cost, on the basis of the possible techniques of early commercial plants and assuming a 50% plant factor, is 14.5 mills per kilowatt hour, which might be reduced to 9.4 mills at an 80% plant factor. The comparable cost in a coal-burning plant with coal at \$7 a ton (it varies in the majority of plants between \$3 and \$7) is about 7.1 mills at 50% or 5.6 mills at 80% plant factor. This book seems to support the conclusion that it is only if fuel costs are very high, or if nuclear energy is a by-product of other, possibly defence, activities, that it is likely to be important in the near future.]

KEYES (LUCILLE S.). *Federal Control of Entry into Air Transportation*. Cambridge, Mass.: Harvard University Press, 1951 (London: Geoffrey Cumberlege, 1952). 8½". Pp. 405. 40s.

[A critical analysis of the working of the Civil Aeronautics Act in the light of the Chamberlinian theory of monopolistic competition.]

LANCASTER (J. L.). *County Income Estimates for Seven South-eastern States. A report of the Conference on the Measurement of County Income*. Charlottesville, Virginia: Bureau of Population and Economic Research, University of Virginia, 1952. 11". Pp. 246. \$5.

[This is a more comprehensive report of the results of a research project of which some preliminary results have already been published. The data provided include income in total and per head for each county in the states concerned in 1939 and 1947, together with particulars of sources of income by industrial groups and of distribution of income between wages, profit and other shares.]

MCCARTNEY (E. S.) and SPARROW (F. H.) (Ed.). *Papers of the Michigan Academy of Science, Arts and Letters. Vol. XXXVII (1951)*. Ann Arbor: University of Michigan Press (London: Geoffrey Cumberlege), 1952. 9½". Pp. v + 513. 72s.

[This contains four essays on economic topics: "A Conceptual Framework for Social Science," by Kenneth E. Boulding; "The Development of Low Income Countries," by John M. Hunter; "Settlement of Airline Labor Disputes," by Mark L. Kahn; and "The Economic Implications of the United States Denazification Program in Germany," by Marguerite Patton.]

MACHLUP (F.). *The Economics of Sellers' Competition. Model analysis of sellers' conduct*. Baltimore: The Johns Hopkins Press, 1952. 9½". Pp. 582. \$6.50.

[To be reviewed.]

MACHLUP (F.). *The Political Economy of Monopoly. Business, labor and government policies.* Baltimore: The Johns Hopkins Press, 1952. 9½". Pp. 544. \$5.50.

[To be reviewed.]

NORRIS (RUBY T.). *The Theory of Consumer's Demand. Revised Edition.* New Haven: Yale University Press (London: Geoffrey Cumberlege), 1952. 9½". Pp. 237. 24s.

[The first edition of this book was reviewed by Mrs. Robinson in the *ECONOMIC JOURNAL* of April 1943. The principal change in the present revision is the addition of a new chapter in which the author considers the implications for marginal utility theory of what was the most original contribution of her book as it first appeared, the concept of commodity specialisation. This is the name given to the process by which, for example, as a consumer's income increases, more numerous pairs of shoes designed to fulfil more specialised functions are substituted for fewer, more adaptable, pairs, thus giving rise to economies of large-scale consumption.]

RIKER (W. H.). *Democracy in the United States.* New York: The Macmillan Company, 1953. 8½". Pp. 428. \$2.25.

[In the first chapter Professor Riker sets forth his definition of democracy as "a form of government in which the rulers are fully responsible to the ruled in order to realise self-respect for everybody." The remainder of the book is an analysis of American political institutions directed to ascertaining the extent to which they satisfy this definition.]

VAN ROYEN (W.) and BOWLES (O.). *The Mineral Resources of the World. Atlas of the World's Resources, Vol. II.* New York: Prentice Hall, for the University of Maryland (London: Constable), 1953. 12½". Pp. 181. 70s.

[This elaborately designed statistical atlas contains maps illustrative of world production and deposits of minerals. The maps are accompanied by a full commentary dealing with both geological and economic aspects.]

RUSSELL SAGE FOUNDATION. *Annual Report 1951-1952.* New York: Russell Sage Foundation, 1952. 9". Pp. 37.

[The purpose of the Foundation is "to advance the utilisation of social research in social practice." The fields of study of its current research programme include corporate philanthropy, training for the professions, public health, child care, education and criminology.]

SARTON (G.). *A Guide to the History of Science. With introductory essays on science and tradition.* Waltham: Chronica Botanica (London: Wm. Dawson), 1952. Pp. xviii + 316. \$7.50.

[Prof. Sarton's Guide, which is the culmination of thirty-five years of work, is all embracing. It includes all branches of natural and exact science, and its comprehensive bibliographies will be the starting point for many future scholars. The history of science is the history of man's progress from imaginative ignorance to an even more terrifying knowledge. Living man is limited in all his actions by the state of knowledge of his day, and economic and social science is a reflection of that knowledge. A very great degree of individuality is required to enable the slightest progress to be made. Fortunately there are exceptional persons. Prof. Sarton argues that the influence of social writers like Voltaire and Rousseau upon the French Revolution has been fully recognised, possibly over-emphasised; the influence of science has been underestimated. And it is only recently that the history of science has been developed. Prof. Sarton can now be regarded as the *doyen* of the discipline.]

SCHMID (C. F.), KALBACH (W. E.), MILLER (V. A.) and SHANLEY (F. J.). *Population and School Enrolment Trends and Forecasts, State of Washington.* Seattle: Washington State Census Board, 1953. 10". Pp. 60.

[This comprises two separate but related studies. The first deals with projections of fertility, mortality and migration trends for the State of Washington

for the period between now and 1965. The second, based on the first, contains estimates of the numbers likely to be seeking admission to schools and colleges in the State during the same period.]

SOCIAL SCIENCE RESEARCH COUNCIL. *Annual Report 1951-1952.* New York: Social Science Research Council, 1952. 9". Pp. 73.

[This report contains accounts of the membership and activities of the various committees and their staffs which carry out the bulk of the work of the Council in the many fields of study in which it is interested.]

STIGLER (G. J.) and BOULDING (K. E.) (Ed.). *Readings in Price Theory. American Economic Association Series.* London: Allen & Unwin, 1953. 9". Pp. v + 568. 30s.

[This is the latest addition to Messrs. Allen & Unwin's useful series of English editions of the *Readings* volumes issued by the American Economic Association. The American edition of *Readings in Price Theory* will be reviewed in a forthcoming number of the *ECONOMIC JOURNAL*.]

SUTTON (J. S.). *The Prosperity Dilemma. A study of the profit motive.* Kansas City: Brown-White-Lowell, 1953. 8½". Pp. vii + 129. \$6.

[The author claims this to be "the first restatement of commercial [or mercantilist] economic thought to appear in the English language in over 200 years." The "Prosperity Dilemma" is the supposed fact that commercial prosperity is dependent on a continuous increase in the supply of money, which must ultimately extinguish altogether its purchasing power. The solution favoured by the author is the use of a form of money which would be current for a stated limited period only.]

TOSDAL (H. R.). Assisted by CARSON (W.). *Salesmen's Compensation. In two volumes.* Boston, Mass.: Harvard University Graduate School of Business Administration, 1953. 8½". Vol. I, pp. v + 459. Vol. II, pp. v + 461. \$11.50.

[Volume I contains a general discussion of the level and form of payments made to salesmen in practice and of the problems involved in evaluating salesmen's performance with a view to the establishment of incentive payment schemes. It also contains the results of a questionnaire circulated to many firms dealing with these questions. The second volume is devoted to a more detailed analysis of the compensation schemes in force for salesmen in thirty selected firms.]

WEILER (E. T.). *The Economic System. An analysis of the flow of economic life.* New York: The Macmillan Company, 1952. 9½". Pp. vii + 868. \$5.75.

[To be reviewed.]

WILLETT (A. H.). *The Economic Theory of Risk and Insurance.* Philadelphia: University of Philadelphia Press (London: Geoffrey Cumberlege), 1951. 8½". Pp. 103. 18s.

[This is a reprint of a book originally published in a small edition in 1901. Since then it has been much used, especially by students of insurance, and is often quoted in the literature of the subject. The original edition, which is now scarce, was reviewed by T. N. Carver in the *ECONOMIC JOURNAL* of June 1902.]

French

L'Intégration Économique de l'Europe. Par un Groupe d'Étude International sous la direction de Lucien De Sainte-Lorette. Dotation Carnegie pour la paix internationale. Paris: Presses Universitaires de France, 1953. 9". Pp. vi + 332. 860 frs.

[To be reviewed.]

LHOMME (J.). *La Politique Social de l'Angleterre Contemporaine. Salaires, coût de la vie, emploi.* Paris: Presses Universitaires de France, 1953. 9". Pp. 517. 1800 frs.

[To be reviewed.]

MALISSEN (M.). *L'Autofinancement des Sociétés en France et aux États-Unis.* Paris: Librairie Dalloz, 1953. 8½". Pp. ix + 246.

[To be reviewed.]

MARCHAL (A.). *La Pensée Économique en France depuis 1945.* Paris: Presses Universitaires de France, 1953. 9". Pp. 240. 700 frs.

[To be reviewed.]

German

BRANDT (K.). *Struktur der Wirtschaftsdynamik.* Frankfurt am Main: Fritz Knapp, 1952. 8½". Pp. 198.

[A thorough exposition of the modern theories of economic growth and dynamics. The story begins, logically enough, with an account of the nature of causality in the physical sciences and the meaning of static, dynamic and kinetic theories. It then reviews the theories of Samuelson, Harrod and others. It may be recommended as a guide to the literature.]

EGNER (E.). *Der Haushalt. Eine Darstellung seiner volkswirtschaftlichen Gestalt.* Berlin: Duncker & Humblot, 1952. 9½". Pp. 516. DM. 32.

[In this treatise Professor Egnor (Göttingen) treats the keeping of a household as an essentially human activity which is the basis of the social economy. Three types of household are distinguished—the family household, which is quantitatively the most important, and the institutional and collective households—and these are examined historically and sociologically. The greater degree of interdependence of modern economies is here seen as a threat to the independence and unity of the family household.]

MÜLLER-OHLSSEN (L.). *Strukturwandlungen und Nachkriegsprobleme der Wirtschaft Frankreichs.* Kiel: Institut für Weltwirtschaft an der Universität Kiel, 1952. 9½". Pp. 205. DM. 16.

[This survey of the post-war economic problems of France emphasises the extent to which they are of long-term standing. The features of a stagnant economy living on its capital are described with the help of statistical tables of the major economic series covering the last twenty years, and this provides a background for an exposition of the objects of the Monnet plan.]

WERNET (W.). *Handwerkspolitik. Grundriss der Sozialwissenschaft No. 13.* Göttingen: Vandenhoeck & Ruprecht, 1952. 9½". Pp. 325. DM. 2280.

[Dr. Wernet's book is an exhaustive account of the development, organisation and problems of craft industries in Germany. It is divided into four parts. Part I describes the organisation of craft industries within the changing political and social framework. The second part describes recruitment and training of the artisan and the third part the law relating to the industries concerned. A final section deals more exclusively with the economic problems of crafts. In this last part by far the most interesting section is that on the organisation of social security. The treatment on the finance of crafts and on marketing problems is all too brief for the industrial economist.]

Swiss

HUNOLD (A.) (Ed.). *Vollbeschäftigung, Inflation, Planwirtschaft. Beiträge von A. AMONN, L. BAUDIN, W. EUCKEN, C. BRESCIANI-TURRONI, H. S. ELLIS, F. A. HAYEK, J. JEWKES, G. IVERSEN, F. A. LUTZ, W. ROPKE, J. VINER.* Zurich: Eugen Rentsch, 1951. 8½". Pp. 362. DM. 22.80.

[According to the editor this work is "an appeal for a return to sanity at a time when the most obviously fallacious doctrines are uncritically accepted and spread abroad." The "fallacious doctrines" are those of the "offenbare Keynesianen," who are creatures of the devil. To Röpke, Amonn and Eucken, the Keynesian identity can be written

Keynes = Full Employment = Planned Economy ∴ Keynesianism is bad.

There is no real attempt on their part to understand and to explain to the unwary German that there is a distinction to be made between Keynesian assumptions, analyses and policies. Fortunately, more sensible and positive criticism of the more naïve utterances of the Keynesian left-wing is found in the essays by Jewkes, Ellis, Viner (a translation of his review of the *United Nations Report on Full Employment* in the *Quarterly Journal of Economics*) and Lutz. The essay by the last mentioned on unemployment and credit expansion is an honest attempt to determine what conditions will favour the use of credit expansion alone as a means of combating depression.]

LUTOLF (F.). *Die Theorie der monatären Krieslaufsphären.* Bern: Francke, 1952. 9½". Pp. 137. S. Fr. 10.50.

[This dissertation surveys the history of the quantity theory of money and attempts to integrate it with Keynesian macro-economic writings.]

Dutch

TINBERGEN (J.). *On the Theory of Economic Policy. Contributions to Economic Analysis I.* Amsterdam: North-Holland Publishing Co., 1952. 8½". Pp. 78. 13s.

[This booklet provides a more elaborate treatment of the type of application of econometric methods to problems of policy set forth in Chapter 8 of Professor Tinbergen's *Econometrics*. The four types of variable entering into the analysis are first distinguished, namely data, targets, instruments and irrelevant variables, and an account is given of the various kinds of relationship that may exist between them. Some examples are then shown of the simplest case, in which the number of target variables equals the number of available instruments. Subsequent chapters deal with more complicated cases, such as those characterised by the presence of "boundary conditions," where there is a limited range of values that it is possible or desirable that one or more of the variables should assume (e.g., prices cannot be negative). Among other issues discussed are how to measure the efficiency of alternative instruments and how to assess the reliability of the results arrived at in face of the likelihood of inaccuracy in the data. Professor Tinbergen's characteristic lucidity and precision in exposition are in evidence throughout.]

ZIMMERMAN (L. J.). *The Propensity to Monopolize. Contributions to Economic Analysis, II.* Amsterdam: North-Holland Publishing Co., 1952. 8½". Pp. 100. 15s.

[The argument of this book runs as follows. The increase in profits resulting from the transformation of a competitive industry into a monopoly will be greater the lower the elasticity of the industry's demand curve and the higher the elasticity of its supply curve. The "propensity to monopolize" may therefore be defined as the ratio of the elasticity of supply to the elasticity of demand. Now when the supply elasticity is high and the demand elasticity is low, competition is likely to give rise to anti-damped cobweb cycles in the event of there being a lag in the response of supply to price; in just those cases, therefore, where a monopoly is most likely to be formed, a monopoly (suitably controlled to prevent profiteering, etc.) is also most likely to be desirable in the interests of stability.

This is the author's main argument; he also draws certain analogies in the theories of international trade and income determination. In seeking to formulate theoretically the conditions most favourable for the creation of monopoly, Dr. Zimmerman sets himself a promising task. But his treatment of it seems subject to serious criticisms. In the first place the assertion that the higher the elasticity of supply, the larger the increase in profits available from the formation of a monopoly is valid only if the rising tendency of the supply curve is due exclusively to the inefficiency of marginal firms, causing rents to accrue to intra-marginal entrepreneurs as output increases. If the rise in supply price is due to any extent to inelasticity in the supply of outside factors of production or to external diseconomies, the conclusion is no longer true, and may be seriously misleading. In the second place, is not the inducement to form a monopoly often dependent as much on the absolute level of profits under competitive conditions as it is on the amount by which profits can be increased by monopolisation? Dr. Zimmerman is driven by the logic of his argument to the unpalatable assertion (pp. 75-6) that "the well known international commodity agreements from the thirties were born not because the elasticity of supply was small, but on the contrary, because it was very high." Surely in these cases the formation of a monopoly was attractive because the low elasticity of supply caused producers to be particularly hard hit by the fall in demand (*despite* the fact that monopolisation was perhaps capable of bringing less relief than would have been the case had supply been more elastic). Finally, reference to the cobweb theorem seems much too narrow a basis for the conclusion that a high elasticity of supply is inconsistent with market stability under competitive conditions.]

Austrian

JOELSOHN (W.). *Die Theorie der Säkularen Stagnation*. Vienna: Springer, 1952. 9". Pp. 136. 17s.

[Hansen's stagnation thesis is here expounded for the benefit of the German student. Many of the references to the original material seem unnecessary at the level of exposition adopted.]

Italian

BRESCIANI-TURRONI (C.). *Corso di Economia Politica*. Vol. I. *Teoria generale dei fatti economici*. Milan: Guiffre, 1953. 10". Pp. 434. Lire 2000.

[To be reviewed.]

MORSELLI (E.) (Ed.). *Archivio Finanziario. Annali degli studi tributari*. Volume III. Padua: Cedam, 1953. 10". Pp. 551. Lire 3600.

[This contains a large number of articles on public finance by Italian authors, together with short reviews of books and lists of published articles on public finance and allied topics.]

Mexican

RAMIREZ (M. P.). *La Escuela Nacional de Economia. Esbozo Historico 1929-1952*. Mexico City: Universidad Nacional Autonoma de Mexico, 1952. 9". Pp. 480.

[An account of the work and personalities of the school since its foundation.]

Japanese

TOMINAGA (Y.). *The Truth of Money. A doctrine on social reconstruction by means of ticket money*. Yokohama: New Liberalist Economics Research Institute, 1952. 8½". Pp. v + 199. \$2.50.

[Mr. Tominaga claims that a proper understanding of the "nominalist" theory of money provides the clue to solving all the world's chief economic

problems. Money is the "medium of purchase"—not the medium of exchange, for that suggests that money has or should have inherent value, whereas it is the essence of the author's position that ticket money, itself devoid of inherent value, is the best. In his view, control of the quantity of money under a regime of tickets is not merely an economic panacea, but also extremely easy to carry out. Mr. Tominaga is an enthusiastic amateur who admits his comparative unfamiliarity with the literature of the subject. The only economists whose views he discusses at any length are Marx, Knapp and Irving Fisher.]

Official

BRITISH

CITY OF BIRMINGHAM ANNUAL ABSTRACT OF STATISTICS, No. 2. Edited by R. Padley and W. Taylor. Birmingham: City of Birmingham Central Statistical Office, for the Corporation, 1953. 11". Pp. iii + 140.

[The chapter headings of this enterprising and well-designed abstract are population, vital statistics, health, housing, education, judicial and protective services, care of children, miscellaneous services, transport and communications, public utilities, employment and industry, government and meteorology. Purely financial statistics are not included, but appear in a separate publication of the City Treasurer.]

CANADIAN

COMBINES INVESTIGATION COMMISSION, DEPARTMENT OF JUSTICE OTTAWA. *Fine Papers*. Ottawa: Department of Justice, 1952. 9½". Pp. i + 433.

[Much of the space of this report and summary of inquiry proceedings is taken up with the question whether prices and conditions of sale were "agreed" amongst producers and merchants or merely "discussed." The findings of the Commissioner are that the seven fine paper mills in Canada and the more numerous merchants, organised in their Trade Association, have engaged in price fixing, loyalty discount arrangements and other practices calculated to lessen competition to the detriment of the public in a manner constituting the creation of a combine within the meaning of the Combines Investigation Act.]

NIGERIAN

DEPARTMENT OF COMMERCE AND INDUSTRIES, LAGOS. *Handbook of Commerce and Industry in Nigeria 1952*. Lagos: Department of Commerce and Industries, 1952. 9½". Pp. 127. 5s.

[This first issue of a new handbook includes both general information about the geography, population, constitutional development, budget, currency, taxes, Marketing Boards and so on, as well as a great deal of very useful detail about banking facilities (including the location of branches), hotels and rest houses, road, railway and shipping facilities, Customs and Excise duties, industrial legislation, and general advice and hints to visiting business men.]

INDONESIAN

THE JAVA BANK. *Report for the Financial Year 1951-1952*. Djakarta: The Java Bank, 1952. 10½". Pp. 246.

[This is principally devoted to an account of economic developments in Java during the year, with extensive references to events in previous years.]

AMERICAN

UNITED STATES DEPARTMENT OF COMMERCE. *Foreign Aid by the United States Government 1940-1951*. Prepared by the Clearing Office for Foreign Transactions. Washington: U.S. Government Printing Office, 1952. 11½". Pp. 118. \$1.

[This statistical and descriptive account of the foreign aid rendered by the United States during and since the war contains information relating to its quantity, direction, form, conditions, purposes and administration. Its treat-

ment of the broader economic context of foreign aid is only brief and has no pretence to originality or scholarship, but a good deal of useful detailed information is included.]

INTERNATIONAL

BANK FOR INTERNATIONAL SETTLEMENTS. Twenty-Second Annual Report. Basle, 1952. 12". Pp. 2 + 265.

[This report contains the usual valuable survey of events during the year, with particular reference to problems of monetary stability and international exchange arrangements.]

COUNCIL OF EUROPE. Economic Relations with Overseas Countries. Report by the Secretariat General. Strasbourg: Council of Europe, 1952. 9". Pp. 147.

[This is the report of a Working-Party appointed by the Consultative Assembly of the Council of Europe to prepare "a study of methods for achieving a closer co-ordination between the economies of Member States of the Council of Europe and those of the overseas countries having constitutional links with them." Sir Cecil Kisch was Chairman, and English Members included Mr. Bareau, Mr. Brech and Mr. Page. A full and detailed summary of conclusions cannot be reproduced here. It must suffice to say that the Working-Party recommended the expansion of multilateral trade unhindered by quota restrictions, the restoration of the temporarily suspended measures of liberalisation and their expansion to overseas dependencies, the lowering of tariffs and measures to develop primary production in certain overseas countries. They call for a co-ordinated effort to achieve and maintain convertibility while recognising serious short-term difficulties in doing so.]

COUNCIL OF EUROPE. A Few Aspects of Population and Economy. Statistical study of certain aspects of the structure of population and of the economies of the member states of the Council of Europe. Strasbourg: Council of Europe, 1952. 9". Pp. 62.

[This consists of a series of statistical tables relating to the member states of the Council of Europe. The tables provide basic statistics on population, production, employment, foreign trade and national incomes, mostly derived from the U.N. *Monthly Bulletin of Statistics* and similar sources.]

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT. Seventh Annual Report, 1951-1952. Washington, D.C.: International Bank for Reconstruction and Development, 1952. 11". Pp. 64.

[This report contains the usual survey of the Bank's activities, in which the provision of technical assistance, especially to countries in Latin America, has recently occupied an increasingly important place.]

INTERNATIONAL MONETARY FUND. Summary Proceedings of the Seventh Annual Meeting of the Board of Governors, September 1952. Washington: International Monetary Fund, 1952. 9". Pp. 270.

[The proceedings reported consist chiefly of brief statements by the leaders of the delegations of the countries represented on the Board of Governors.]

UNITED NATIONS. Economic Survey of Europe Since the War. A reappraisal of problems and prospects. Prepared by the Research and Planning Division of the Economic Commission for Europe. Geneva: United Nations Department of Economic Affairs, 1953. 11". Pp. 385. 25s.

[To be reviewed.]

UNITED NATIONS. Demographic Yearbook, 1952. New York: United Nations Statistical Office & Department of Economic Affairs, 1953. 11½". Pp. 518. 45s.

[In accordance with the principle previously laid down for this year-book of

concentrating in each issue on a particular aspect of demographic statistics, the present issue deals in detail with the geographical distribution of population, drawing on the available results of censuses conducted in 1950 and 1951. An introductory chapter is included on urban trends and characteristics.]

UNITED NATIONS. A General Economic Appraisal of Libya. New York: United Nations Technical Assistance Administration, 1953. 11". Pp. iii + 55. 4s. 6d.

[This report was prepared by a mission appointed by the United Nations as a necessary preliminary to a programme of technical assistance to the newly independent country of Libya. It brings together factual and statistical information on all aspects of the Libyan economy. It starts with the geographical, demographic, social and administrative background. It goes on to agricultural and industrial production, public finances, the monetary and banking systems, savings, investment, credit facilities, prices, internal and foreign trade, wages, the standard of living and national income estimates. Finally, there is an account of economic policies and development possibilities. The conclusions are discouraging but thoroughly realistic: "It has been shown that Libya's population is, on the whole, illiterate and unskilled in modern production techniques, that domestic savings are insignificant, and that the country—in so far as is known at present—is almost destitute in raw materials and sources of energy. The only appreciable natural resources which it possesses can be exploited only by cultivation and pasture. For a long time to come, therefore, the natural line for economic development will be agriculture and animal husbandry."]

UNITED NATIONS. Government Accounting and Budget Execution. New York: United Nations Department of Economic Affairs, 1953. 9". Pp. 90. 5s.

[This document has a rather narrower scope than its title might be taken to suggest. Its subject matter is not chiefly the means of setting out the government accounts in such a way as to bring out most clearly their economic significance, but rather the alternative methods of reconciling full accountability in government spending with a reasonable degree of flexibility. Useful details are given of the government accounting methods followed in four selected countries, France, the Netherlands, Sweden and the United States.]

UNITED NATIONS. Governmental Policies Concerning Unemployment, Inflation and Balance of Payments 1951-52. New York: United Nations Department of Economic Affairs, 1953. 9". Pp. iii + 135. 7s. 6d.

[This report is based on the answers to a questionnaire submitted to governments by the Secretary-General of the United Nations in February 1952. This questionnaire is now circulated annually. The purpose of the inquiry is stated to be not so much to obtain data about economic conditions generally as to "provide the means for a periodic review of the extent to which governments have responded to the recommendations of the United Nations with respect to national and international full employment policies." The report is chiefly taken up with a country-by-country summary of replies to each particular question.]

UNITED NATIONS. Instability in Export Markets of Underdeveloped Countries. New York: United Nations Department of Economic Affairs, 1953. 11". Pp. iii + 94. 7s. 6d.

[This is a statistical study devoted to measuring fluctuations rather than explaining them or suggesting means to reduce them. Its contents consist chiefly of measures of the amplitude of year-to-year, cyclical, long-term and within-year fluctuations in the price, volume and value of the exports of eighteen leading primary products from selected under-developed countries over the period 1901-50. A brief concluding chapter subjects to similar statistical treatment fluctuations in foreign-exchange earnings other than export proceeds. Some interesting results emerge. Fluctuations in volume have on the whole contributed more to the instability of export proceeds than have fluctuations in price, whether reckoned on a year-to-year or on a cyclical basis. Year-to-year fluctuations in both price and volume have been more violent in 1946-50 than in either 1901-13 or 1920-39.]

UNITED NATIONS. *Statistical Yearbook, 1952*. Prepared by the Statistical Office of the United Nations Department of Economic Affairs. New York: United Nations, 1953. 11½". Pp. 3 + 554. 45s.

[This is the fourth year of issue of the *Statistical Yearbook*. It follows fairly closely the lines laid down in the 1951 issue, with various improvements and additions. A useful innovation is the introduction of separate figures for private and official loans and gifts in the balance-of-payments tables.]

UNITED NATIONS. *A Study of Trade between Latin America and Europe*. Prepared by the secretariats of the Economic Commission for Latin America, the Economic Commission for Europe and the Food and Agriculture Organisation of the United Nations. Geneva: United Nations, 1953. 11". Pp. 117. 9s.

[The starting point of this useful and interesting study is the fact that the volume of trade between Europe and Latin America was still in 1951 substantially lower than it had been in 1913. The authors analyse with a wealth of statistical data the causes that have led to the increased importance of the United States in Latin America's foreign trade, which has been accompanied by the development of a dollar shortage for many of the largest Latin American states. In considering the circumstances in which the needed expansion in trade with Europe might be achieved, the authors lay stress on the inadequacy for the future of the traditional pattern of European exports (largely textiles and other consumer goods), especially in countries in southern Latin America where the tie with Europe is strongest. In the smaller northern states, the demand for imported consumer goods is still high, but the ample supply of dollars earned by these countries makes it particularly difficult for European exporters to establish a footing. The report concludes with detailed studies of trade in seven commodities: coffee, sugar, cotton, linseed and linseed oil, wool, meat, textile machinery and tractors.]

UNITED NATIONS DEPARTMENT OF ECONOMIC AFFAIRS. *Economic Survey of Asia and the Far East 1951*. Prepared by the Secretariat of the Economic Commission for Asia and the Far East. New York: United Nations (London: H.M. Stationery Office), 1952. 9". Pp. iii + 400. 17s. 6d.

[To be reviewed.]

UNITED NATIONS DEPARTMENT OF ECONOMIC AFFAIRS. *Mobilisation of Domestic Capital in Certain Countries of Asia and the Far East*. Prepared by the Secretariat of the Economic Commission for Asia and the Far East. New York: United Nations (London: H.M. Stationery Office), 1952. 9". Pp. iii + 239. 11s.

[This study begins with a general discussion of the economic background of the group of Asiatic countries, their central banking facilities, the money and capital markets, and the role of governments as mobilisers of domestic resources. It then goes on to more particular studies of these questions in Burma, Ceylon, India, Indonesia, the Philippines and Thailand. The general conclusion is that even moderate development requires savings beyond existing capital resources. "The low level of income means that it is probably impossible, by voluntary means alone, to mobilise the resources needed. Fiscal measures of government have therefore become a dominant factor in the mobilisation of resources in the region."]

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE. *Annual Bulletin of Transport Statistics 1951*. Third Year. Prepared by the Transport Division. Geneva: United Nations (London: H.M. Stationery Office), 1953. 11". Pp. iii + 84. 80 c.

[This year's bulletin follows the general lines laid down in its two predecessors, with the addition of a short chapter on the importance of the transport industry in the economies of the various countries covered.]

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION. *Geography Teaching for International Understanding*. UNESCO and its Programme, VII. Paris, UNESCO, 1952. 8½". Pp. 37.

[A report on some of the matters discussed at an international seminar on the teaching of geography held at MacDonald College near Montreal under the auspices of UNESCO in the summer of 1950.]

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION. *The Right to Education*. UNESCO and its Programme, VIII. Paris: UNESCO, 1952. 8½". Pp. 54.

[An assessment of the world's educational problem, together with an account of some of the achievements of UNESCO in the advancement of education in backward countries.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. *Community Organisation for Irrigation in the United States*. Prepared by F. Adams. FAO Development Paper No. 19. Rome: FAO, 1952. 9". Pp. 39. 2s. 6d.

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. *Farm Management Investigations for Agricultural Improvement*. Prepared by W. Y. Yang. FAO Development Paper No. 20. Rome: FAO, 1952. 9". Pp. 36. 2s. 6d.

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. *Some aspects of Surface Water Development in Arid Regions*. By A. De Vajda. FAO Development Paper No. 21. Rome: FAO, 1952. 9". Pp. 45. 2s. 6d.

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. *Digest of Plant Quarantine Regulations*. Prepared by Lee Ling. FAO Development Paper No. 23. Rome: FAO, 1952. 9". Pp. 164. 10s.

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. *Cereal Breeding Procedures*. By J. B. Harrington. FAO Development Paper No. 28. Rome: FAO, 1952. 9". Pp. 122. 6s. 3d.

[These five pamphlets are recent additions to the series of Development Papers published by the FAO.]

THE ECONOMIC JOURNAL

SEPTEMBER 1953

OPEN AND REPRESSED INFLATION¹

I. INTRODUCTION

ONE of the first essays I was set to write as an undergraduate at Cambridge was on whether economics is a science or an art. I do not think I can have written a very good essay, for I am sure that I had then not the slightest idea of what the question was really about. But the older I get the surer I become that economics, or at least applied economics, is much more an art than a science. The element of personal idiosyncrasy resides not so much in the effort to discern causal relationships between given phenomena, for much of this is a branch of logic or even of mathematics, as in the selection of phenomena which we choose to regard as significant. In the world to-day there are over 2,000 million persons, each with many sets of different relationships with other persons. Out of this enormous welter of many thousands of millions of partially related variables, with both the variables themselves and their relationships changing continuously, the applied economist has to select two or three (or if he is a mathematician perhaps six or even a dozen), between which he has to assume relationships which are reasonably stable; and he has to select these variables in such a way that, for the particular period and purpose that he has in mind, he can ignore the effects of all the millions of others and draw practical conclusions only from the few he has selected. Nor can he assume that the same choice of factors will remain relevant for long, even for the same type of problem. Old factors lose part of their relevance and new ones grow in significance, so that, even if by some miracle we are originally right in our choice of factors, we soon begin to drift into error unless we continuously revise our choice of relevant data.

Is it then to be wondered at that economists are notoriously better able to foretell the past than the future? And is it any wonder that a dozen different economists, surveying the seething,

¹ Presidential Address to Section F of the British Association, delivered at its meeting in Liverpool, September 1953.

shimmering, continually changing complex of factors which constitutes our world, should each select a different combination of factors that seem to them of prime significance, just as a dozen different artists may see a dozen different significant patterns in the same landscape?

The highly simplified model which every applied economist, like every other human being, constructs for himself as an aid to the understanding of an infinitely complex real world, is therefore an inevitably subjective creation, often inappropriate to others even for the limited purposes for which it was designed. Speaking for myself, I often think I find it easier to understand the real world, infinitely complicated though it is, than the simplifications of some of my colleagues whose models are not the same as mine, just as, say, Sir Alfred Munnings seems to find it difficult to understand the simplifications of Picasso, and perhaps vice-versa.

Thus in putting before you to-day my own simplified model, devised for the particular purpose of examining problems of monetary inflation in Britain during the recent past, I cannot expect that everyone, or be sure that anyone, will find it useful. All that I can claim is that this is a way that I myself have found a useful one of looking at the world, and I am not altogether without hope that there may be some of my listeners who may find it useful too.

What do we mean when we use the word "inflation"? For some people it is merely a condition in which prices rise rapidly for a considerable time; but this definition is not only too wide but is also couched in terms of symptoms rather than of causes. For me, inflation is essentially a monetary phenomenon, whereas a rise in prices can be caused by a fall in physical output as well as by changes originating on the monetary side. Nor for me is a rise in prices the essential characteristic of an inflation, although it is a normal symptom of it. I prefer to relate the phenomenon of an inflation to a rise in money incomes rather than in prices, and to define it in the first place as a condition in which money incomes, almost entirely personal money incomes,¹ show a persistent increase. This is still, however, not a sufficient definition, for a rise in personal money incomes, accompanied by a corresponding or faster increase in the quantity

¹ For completeness we should also include money received by the Government from the sale of services of Government property and used by it for the direct purchase of goods and services; but the amount involved is so small—in the United Kingdom about 2% of the gross national product—that for our present purpose it can be safely ignored.

of things to buy, so that prices do not rise, is not ordinarily called an inflation. We must therefore add to our definition that personal money incomes must not only be rising, but must be rising faster than personal real incomes.

While this definition is formally satisfactory, not all the conditions to which it might apply would be regarded as undesirable. Even in the depths of a trade depression, with many factors of production unemployed, a recovery in output will very possibly be accompanied by a somewhat more rapid rise in money incomes and by some rise in prices; but a rise of, say, 50% in money incomes accompanied by a rise of 49% in real incomes would be regarded by most people as a desirable step towards recovery, and would probably be classified, to use the jargon of the recent past, as "reflation" rather than "inflation." At the other extreme, even in an active boom with very few unemployed factors, a further rise in money incomes might very well (though by no means necessarily) be accompanied by some slight rise in real incomes; but in such conditions a rise of 50% in money incomes would undoubtedly be regarded as undesirably inflationary, even if it were accompanied by, say, a 1% rise in real incomes. How large a rise in real incomes would have to accompany a given rise in money incomes to make the inflation desirable is necessarily a subjective judgment, depending often on the personal circumstances of the observer; but in general it can be said that, especially when there are few unemployed factors, the faster money incomes rise the less likely will it be that real incomes will rise sufficiently to compensate for the disadvantages of inflation in the destruction of money savings, the arbitrary redistribution of wealth and income, and the distortion of the economic and often the corruption of the political system.

While for me the essential element of an inflation is a rise in personal money incomes, its essential cause is that collectively the community overspends its income. If we like, we can divide expenditure into two rather arbitrarily defined parts, and call one consumption and the other investment. We can also, if we like, divide income into two parts, one part allocated to expenditure on consumption and the other called saving. Since the part of income allocated to consumption is by definition the same as the amount spent on consumption, any excess of expenditure over income is equal to the excess of investment over saving. Under present conditions, however, I am not sure that the alternative way of looking at the matter is not equally valid. Often to-day the first charge on income is not consumption

expenditure but contractual saving. Many income receivers first set aside the money for the insurance, for the contribution to the pension fund, for the repayment of the mortgage to the building society and for the hire-purchase payments, and only after they have made provision for these can they devote the rest to current consumption. If a man then overspends his income, is it not at least as true to say that he is spending on consumption more than he has left after providing for investment as that he is investing more than he saves? Perhaps the reason that we look at the phenomenon from the second of these points of view rather than from the first is that we have a familiar word for the margin of income left after providing for current consumption—we call it saving—while we have no such word for the margin left after providing for current investment.

In any case, for my purposes to-day it will be more convenient to look at the relationship between total income and expenditure rather than that between part of income and part of expenditure. But to look at the relationship between income and expenditure we shall have to extend still further the range of transactions we have to take into consideration. The expenditure we meet out of income is not gross but net expenditure—total expenditure minus all receipts which are not regarded as income. For my present purpose I want to take account not only of payments made out of income but of all payments, however financed; I can therefore modify my definition of the cause of inflation from an excess of expenditure over income to an excess of total money payments over total money receipts.

This definition, of course, at once brings us up against the difficulty that, since every payment immediately results in a corresponding receipt, receipts and payments are always equal. I think, however, that we can overcome this conceptual difficulty if we think of receipts as occurring, not quite simultaneously with payments, but an instant later. We can then get a lack of identity between payments and *previous* receipts; for while every payment automatically creates a receipt, every receipt does not create a payment. Clearly this lack of identity between payments and previous receipts must relate to some fairly short period of time; the information that payments had been greater than previous receipts over the whole of the last fifty years would give us no guidance about the way money incomes were changing at the present moment. For this reason I have divided time up into a series of short periods of, say, one week or one month each. The first monetary transactions of each period consist of the

receipt of the personal incomes which have been paid at the end of the previous period; the last transactions of each period are the payments of the amounts which will constitute the personal incomes of the next period. (For the purpose of this discussion, personal incomes are defined as all receipts of money by persons which the recipients consider they can spend on current consumption, however defined, without consuming capital.)

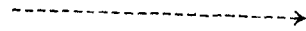
For all other transactions, both receipts and payments fall within the same income period. (This enables us, if we want to, to net out all non-income transactions, and makes the difference between expenditure and income the same as the difference between total payments and total previous receipts within any income period.) These other transactions include all payments to persons other than those which are regarded as income by the recipients, and all payments of every kind to businesses and governments. There is a little difficulty in the treatment of payments to proprietors of sole businesses: we must think of these as separating their personal accounts from those of the business, and paying themselves salaries out of their receipts only at the end of each income period.

Now let me try to describe my own particular picture of the monetary system. Most pictures of this sort represent as a circular flow a limited type of monetary transactions—those relating to the national income—over a given period, usually a year. They thus omit not only the whole range of non-income transactions, but are unable to indicate changes through time in the volume and direction of the various flows; and it is just these changes which for our present purpose we are most interested in watching. My own approach is rather different. Conceptually, I follow the life history of each separate unit of money, observing the circumstances of its creation and disappearance, as well as of its changes of ownership as it passes from bank account to bank account or from pocket to pocket, and even keeping an eye on it when it lies dormant for a period in the same ownership. It is quite possible thus mentally to trace the life history of a unit of money without recourse to visual aids; but I think that my exposition may be made easier with the help of diagrams, and I have therefore constructed a visual model.

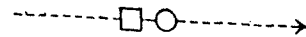
In this model, every unit of money traces for itself a separate line through time, rather as if it were making a recording on a barograph. Ideally, the units should be pounds, or even pence; but as a diagram containing even 6,000 million lines would be a little awkward to handle, we must content ourselves with much

larger units—say, of £100 million or so—and even with these we shall have room for only a fraction of the total.

So long as money is held in the same ownership, it is represented by a dotted horizontal line, running from left to right through time :



Every now and then a given unit of money changes hands. The change of ownership will involve a payment by one party and a receipt by the other; let us show payments by squares and receipts by circles. As every payment necessarily involves a receipt, we will link payments and receipts together by solid lines :



We must now proceed to distinguish the different types of accounts into and out of which payments are made. The simplest model which will be useful for our purpose must distinguish five different types of accounts: personal income accounts; personal capital accounts; business accounts; government accounts; and accounts of (not of course *with*) banks. These distinctions could, and perhaps for some purposes should, be multiplied almost without limit. For some purposes, for instance, it might be convenient to distinguish payments to retailers from payments to wholesalers or manufacturers; for others, payments to makers of consumption goods from payments to makers of capital goods; and for others again, payments for long-term fixed-interest securities from payments for short-term securities, or for shares, or for various types of physical assets. But for our purpose to-day these five categories will suffice. Here is our notation :

	Personal		Business	Government	Banks
	Income	Capital			
Payments	■	□	▢	⊞	⊠
Receipts	●	○	⊖	⊕	⊗

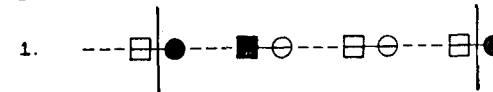
While a payment is automatically and immediately linked to a receipt, the delay between a receipt and a payment may be of indefinite length. When, however, a payment is ultimately made, it must be made out of the same account as that which earlier received the money. The only change in notation between receipt and payment occurs when a person saves part of his

income or dissaves part of his capital, and thus converts an income balance into a balance on capital account, or vice-versa.



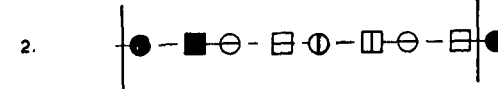
e.g., persons receive wages from businesses, save them and lend them to the Government.

Now let us trace a simple series of monetary transfers through a single income period :



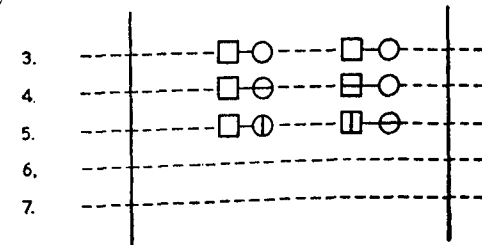
An interpretation of this might be: Persons receive incomes from businesses at the beginning of a period, and spend them on consumption goods. Retailers replace their stocks by buying from manufacturers, who pay out wages for the creation of new goods. These wages form the personal incomes for the next period.

Now let us introduce the Government :



e.g., the Government collects from retailers half the personal incomes spent on consumption goods, perhaps by means of purchase taxes, and uses the money to buy goods from manufacturers who pay wages in order to make more.

Meanwhile, other units of money are lying idle, or are being used for the purchase and sale of assets and titles, or for loans and repayments :



In line 3 a person buys assets, say securities, from another person, who buys from a third, who holds the money over the end of the period; in line 4, a person buys securities from a business, which buys others from a person; and in line 5 a person lends money to the Government, which uses it to buy an asset from a business. Lines 6 and 7 are idle balances.

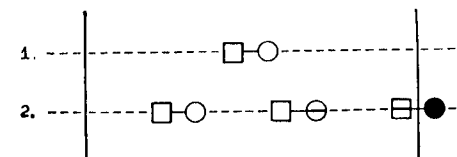
The total quantity of money is found by counting the number of lines (in this case 7), the total turnover of money is found by counting the number of transactions (in this case 13), while the total of personal incomes is two.

II. OPEN INFLATION

Let us now turn, with the aid of this model, to an examination of the phenomena connected with a changing level of money incomes. On the definitions given here, the rise in the total of money incomes from one income period to the next is identical with the amount by which payments for the period exceed receipts for the same period. There are two ways in which a man can pay out during any period more than he has received in the same period. One is by spending a stock of money which he has carried over from a previous period. This expenditure will, of course, not necessarily generate increased incomes; as we have seen, if he uses his money for a capital transaction, and if the recipient either holds the money or uses it for another capital transaction, and so on, the money will eventually be carried over to the next period without giving rise to increased incomes. All receipts other than those by persons for the services of themselves or of their assets can be regarded as capital receipts, for they involve merely a change in assets. Only if some seller of an asset pays someone (possibly including himself) for services rendered either in selling the asset or in replacing it does he create money incomes for the following period. It is, of course, perfectly possible that the use of previously idle money balances for the purchase of assets may raise prices of assets; but until more money is used for buying from persons the *services* of persons or their assets, in contrast with the assets themselves, the result is merely to raise the price of assets without raising the price of services, or, in other words, to lower the rate of interest.

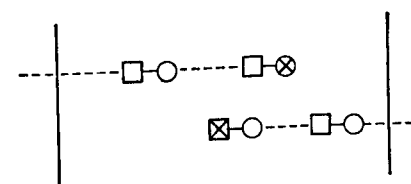
Sooner or later, of course, the rise in prices of existing assets will begin to induce an increase in the demand for new ones, thus increasing the amount of money paid for the services employed in creating them. In times of acute depression, however, when prices of existing assets, and especially of durable assets, may stand well below their replacement cost, there may be a considerable delay before the increase in demand for existing durable assets is reflected in increased orders for new ones, or before holders of excessive stocks are induced by their decrease to increase their replacement orders. In times of active trade, on the other hand, when prices of existing assets are already fully

up to parity with those of new ones, a rise in expenditure on buying assets is more likely to be reflected rapidly in a rise in payments for new assets and in incomes :



Of the two instances of the activation of personal idle balances shown above, the first results merely in a change in the ownership of an asset, say a house, while in the second the seller replaces the house by buying from a speculative builder, who pays out the money in incomes for building new ones.

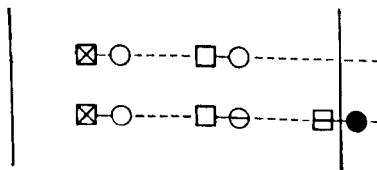
A second way in which it might be possible for a person to pay out more money than he had received during the same period would be to make it. As a general practice, the manufacture of money is rightly frowned on by the authorities. There are, however, certain institutions in a modern system which have this privilege. Exactly what these institutions are varies from country to country, but everywhere the power of creating additional money lies with some combination of the commercial banks, the central bank and the Government. For convenience, we shall call these collectively "the banks," and we shall define banks as those institutions whose debts are widely and generally used as money. The banks can, therefore, create money simply by getting into debt, which they normally do by adding to their assets, usually by making a loan or buying securities. Conversely, whenever they reduce their liabilities, usually as the result of selling securities or having loans repaid, they cancel some of the money already in existence. In our model, we therefore show no connection between the receipt of money by the banks and its re-issue; the money is destroyed by its receipt and created afresh when it is re-issued :



This might illustrate the activation of a privately owned idle balance to buy securities from a seller who uses the proceeds to pay off a debt to the banks. At about the same time the banks

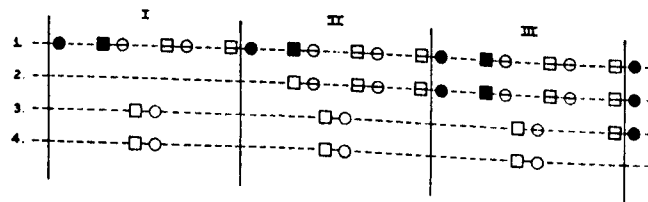
make a loan to someone else to buy another security from a private seller.

It should be noted that neither the creation of new money by the banks nor their destruction of old money has any necessary effect on incomes. For instance, the creation of money by means of a bank loan to finance the purchase of an existing house has no immediate effect on incomes, except perhaps of house-agents. Only if the borrower, or one of a series of sellers of existing houses, uses the money to pay for services rendered in building a new one will the rise in the quantity of money be reflected in a rise in incomes :



Of these two instances, the first represents a bank loan spent on buying an existing house from a private owner. In the second, the borrower buys a house from a speculative builder, who uses the proceeds to finance the building of others.

Now let us begin to use our model to look at the genesis and development of an inflationary movement. If idle balances are large (and in practice they are probably many times larger than those being used in income transactions), it would be quite possible for a very considerable rise in money incomes to take place without any increase in the total quantity of money in existence. Sooner or later, however (and probably sooner unless something had occurred greatly to alter the money-using habits of the population), the rising level of incomes, of activity in the markets for assets and probably of asset prices would absorb the quantity of idle balances that their owners were willing to activate. Further rises in incomes could then occur only by diverting money from the capital circulation, thus bringing about a fall in the demand for assets, a fall in their prices relatively to those of services and a rise in interest rates, and ultimately a check to the rise in the demand for services to create new assets :



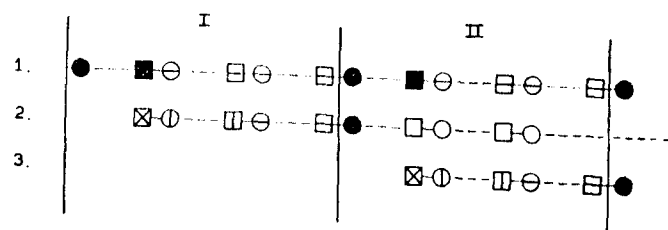
In the above illustration the total number of units of money is four throughout. In the first period one of these is used to pay incomes, one is idle and two are in use for asset transactions. In the second period the idle balance is activated and used for an income payment, thus doubling the level of incomes. In the third period incomes can be raised further only by diverting one unit of money from the market for assets, thus leaving, in period four only one unit in the asset market instead of two, reducing the demand for assets and raising the rate of interest.

It should be noted that if the idle balance had first been activated into the capital circulation, the initial effect would have been to raise prices of assets relatively to those of services and lower the rate of interest. In that case the rate of interest would not have risen above its original level until not only this unit but another as well had been diverted from the capital circulation to the income circulation.

While the increase in incomes induced by an activation of idle balances, though possibly large, is at any rate finite, the increase caused by an increase in the quantity of money is potentially infinite. Like the activation of idle balances, an increase in the quantity of money is not inflationary until it begins to augment personal incomes. So long as its effects are confined to the demand for existing assets, it merely lowers the rate of interest. The speed with which a rise in the quantity of money will be reflected in incomes will depend partly on the way the extra money is created and partly on the economic climate of the period. If, for instance, money is created (as in 1932) by the banks' purchases of securities on the market, or by Government borrowing from the banks to finance the repayment of securities or the purchase of existing assets, the effects may well be confined for a considerable time to the capital circulation and the rate of interest, especially when prices of existing goods stand below the cost of creating new ones.

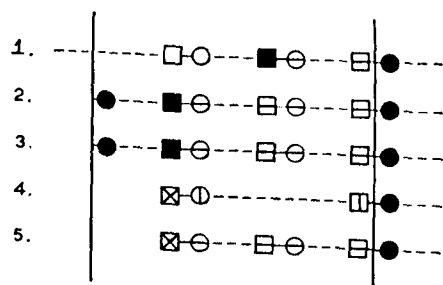
If, on the other hand, the additional money is lent to business to finance new production, or to the Government to pay for the creation of new goods or for services, the effect on incomes will be immediate. Even so, however, the rise in incomes per income period in the early stages of an inflation is likely to be less rapid than the increase in the quantity of money, for the recipients of the increased incomes are likely to save a part of them and so transfer money back to the capital circulation. This is particularly likely to happen when the rise in money incomes is accompanied by a substantial rise in real incomes; but it may well happen for a

time when real incomes are not rising or are even falling. In a country which has not experienced a major inflation within living memory, income receivers may for a time be deterred from buying goods, especially durable goods, by the belief that they are unduly "expensive," and that in due course prices will return to a more "normal" level. The movements of money in the early stages of an inflation may therefore look something like this :



In this illustration the Government has caused the banks to create for its use an extra unit of money in each of periods I and II, but one of the new units has been diverted to the capital circulation, so that incomes per period have risen by only one unit. If the unit diverted had been used to buy new Government securities instead of an existing asset, the Government would not have needed to borrow at all from the banks in period II.

This early stage of an inflation is a temporary one. If the inflation is at all rapid, as it proceeds the expectation that prices will rise further will become increasingly general, and income receivers will not only cease to save but will begin to activate idle balances in order to accelerate their purchases, especially of durable consumption goods; at the same time both income receivers and businesses will endeavour to supplement their existing balances by borrowing from the banks. Incomes will then begin to rise faster than the quantity of money and faster still than Government borrowings from the banks.



In this illustration, Government borrowings from the banks during the period have risen by one unit, but the total quantity

of money has risen by two units, and, thanks to the activation of idle balances, incomes by three units.

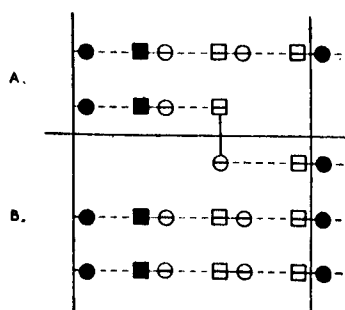
As the existence of the inflation becomes more and more obvious to more and more people, so do the activation of idle balances increase and money incomes rise progressively faster than the quantity of money. In the last stages of the inflation the whole model collapses, for the income period itself is shortened and wages are paid more and more frequently, first, perhaps, twice weekly, then daily and then twice a day, while income receivers rush to spend their money the moment they receive it. When this happens, however much new money is created, its aggregate value falls faster and faster towards zero until it disappears altogether. At the last the use of the existing money is abandoned, and until a new money which commands confidence can be introduced, the economy reverts either to barter or to the use of some commodity as a substitute for money.

Theoretically, a rise in money incomes leading to an inflation could be caused by the activation of money in, or the creation of money for, any one of the three sectors into which we have divided our economy. There is, however, a technical reason why an expansion of incomes generated by the British Government (though not by all) will nearly always arise through the creation of new money rather than by the activation of existing balances. The reason is that the British Government never carries any appreciable quantity of idle balances. As soon as these tend to accumulate, they are used to pay off debt to the banks, while as soon as the Government begins to pay out more money than it receives it initiates the creation of new money by borrowing from the banks (or, more strictly, by the sale of Treasury bills to the Discount Market, which finances its purchases by borrowing from, or re-selling bills to, the banks). The only way in which the Government could initiate a rise in incomes by activating idle balances would be to borrow (or conceivably tax) from persons or businesses money which came out of idle balances. If, however, part of the money paid over to the Government came, as is likely, from the assets circulation, the activation of balances would be accompanied by some rise in interest rates and fall in asset prices, which would in turn ultimately tend to check the rise in incomes.

A rise in incomes originating in the two non-government sectors, on the other hand, is likely to begin with the activation of balances and to be supported by an increase in the quantity of money only when it has gone a certain distance. A rise in

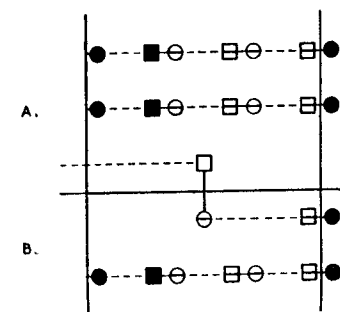
money incomes is, however, likely to develop into a major inflation only if it is fed by an expansion in the quantity of money for the benefit of the Government, partly because the Government is the only one of the three which combines the roles of borrower and monetary authority. Of the other two sectors, a rise in money incomes is probably more likely to develop into an inflation by reason of an increase in the quantity of money for the benefit of the business sector (as in the United Kingdom in 1919-20) than for the personal sector, though personal borrowing for purposes of stock-exchange speculation might conceivably provide an exception, and an increase in bank loans for the finance of hire-purchase agreements could certainly at least contribute to an inflation.

There is one further way in which an increase in money incomes could originate, though it would be unlikely to develop into a major inflation. Hitherto we have discussed our economy as if it was a closed system. In an open system, with trade relations with other economies, a rise in incomes can be initiated by a favourable balance of payments. The exact way in which the extra money passes into the income circulation will depend on the institutional arrangements in force. The simplest case is where two economies share a common currency (as in Great Britain and Northern Ireland, or, to a considerable extent, Great Britain and Eire). In this case actual money is directly transferred from the country with the adverse balance to the country with the favourable balance of payments. Unless the excess exports are from unreplaced stocks, the imported money will rapidly pass into the incomes of the exporting country (B), while if the excess imports are substitutes for home-produced goods, the diversion of purchases will bring about a corresponding fall in incomes in the importing country (A):



These changes in incomes will in due course tend to reduce A's imports from B and to increase B's imports from A, and so

to restore the balance of payments and to check the rise in incomes in B. If, however, the excess imports are in satisfaction of an additional demand, due perhaps to the activation of idle balances, the rise in incomes in the exporting country may not be matched by a fall in the importing country, and there may be a net expansion in incomes in the two countries taken together:



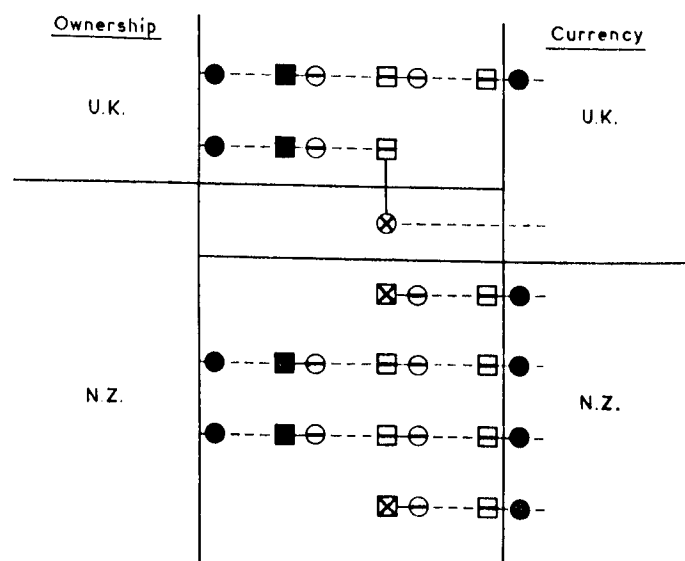
In this case, equilibrium will be restored mainly as the result of a rise in B's imports, though if A's demand for B's exports is elastic, A's payments for imports may also decline if B's export prices rise.

A more usual case is where the two countries have independent currencies. Unless one of these countries holds its foreign-exchange reserves in the currency of the other, the banks of the excess importing country will have to finance its adverse balance of payments by selling assets (either gold or the currency of some third country) to the banks of the net exporter. Money will therefore be destroyed in country A and created in country B, with a symmetrical effect on incomes in the two countries. If the increase or decrease in the banks' holdings of gold or foreign exchange also increases or decreases their willingness to hold assets in their own currencies, the quantity of money created in B and destroyed in A may be a multiple of the disequilibrium in their balance of payments, though if policies on both sides are symmetrical, there will still be no net change in the incomes of both countries taken together.

A more complicated position arises where country A finances its import surplus by raising a long-term loan in country B. This is likely both to draw some money out of the capital circulation of B and to activate some idle balances. It will thus tend to raise both incomes and interest rates in B, while if, as is probable, the import surplus represents a net addition to expenditure in A there will be no fall in incomes there. Indeed, if, as is frequently the case, the loan is raised in advance and is spent

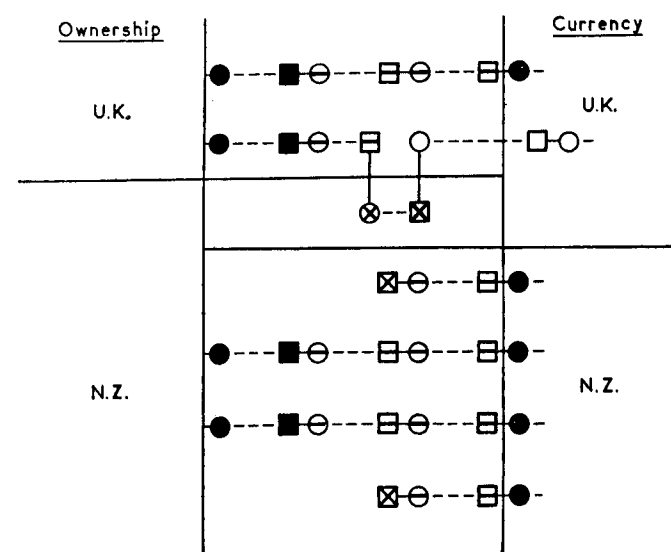
partly within A, its transfer to A will involve the creation by the banks of additional money there and will induce a rise in incomes which will ultimately bring about an import surplus.

Perhaps most interesting of all is the case where one country keeps its foreign-exchange reserves in the currency of the other, but not vice-versa. This relationship, which may be typified by that between the United Kingdom and other members of the sterling area, almost inevitably leads to an asymmetrical result. If, for instance, the United Kingdom has an adverse balance of payments with New Zealand, United Kingdom pounds will be sold to the New Zealand banks in exchange for the New Zealand pounds which the United Kingdom importers need to pay their debts in New Zealand. Thus the quantity of New Zealand money and incomes in New Zealand rise, while if their larger holdings of United Kingdom pounds cause the New Zealand banks to be more willing to acquire New Zealand assets, the quantity of New Zealand money, and probably New Zealand incomes, will rise still more. What, however, the effect in the United Kingdom will be will depend partly on the way in which the New Zealand banks hold their sterling. If they hold it in United Kingdom money, it will mean that part of the money in circulation will be diverted into idle balances :



In this case, incomes in the United Kingdom will probably fall, though it is unlikely that the fall will be intensified by a reduction in the willingness of United Kingdom banks to hold United King-

dom assets. It is likely, however, that the New Zealand banks will wish to keep part of their increased sterling balances in the form of earning assets, and that they will therefore wish to invest at least a part of them. Thus some at least of the United Kingdom pounds withdrawn from the income circulation will not become permanently idle but will be transferred to the United Kingdom capital circulation, thus reducing interest rates, expanding the demand for assets and tending to maintain incomes. Thus, both because there will often be a multiple effect on the quantity of money in New Zealand but not in the United Kingdom, and because of the effect on United Kingdom interest rates, the rise in incomes in New Zealand is likely to be larger than the fall in incomes in the United Kingdom, and there will probably be a net expansion in incomes in the two countries taken together :



When it is New Zealand that has the adverse balance, the asymmetry works in the opposite direction. The effect of falling sterling balances in decreasing New Zealand incomes is likely to be larger than in increasing United Kingdom incomes, so that the incomes of both countries combined is likely to fall. It is for this reason that when "customer" countries are enjoying favourable balances of payments, incomes in the world as a whole tend to rise, while when their balances are unfavourable world incomes tend to fall. Thus an expansion of credit and incomes in a banker country tends to spread to all its customer countries and to continue until it is checked by the development of an adverse balance

of payments between the whole group and the rest of the world. If there were a single banker country in the world, with all other countries keeping their reserves of foreign exchange in its currency—a relationship not so very different from that between the United States and the rest of the world at the present time—an inflation in that one country would tend to generate an inflation throughout the world, with no automatic tendency towards a reversal; while the effects of an inflation in any customer country would be largely local and, in the absence of continual currency depreciation, would in due course be checked by the depletion of that country's reserves of foreign exchange.

III. REPRESSED INFLATION

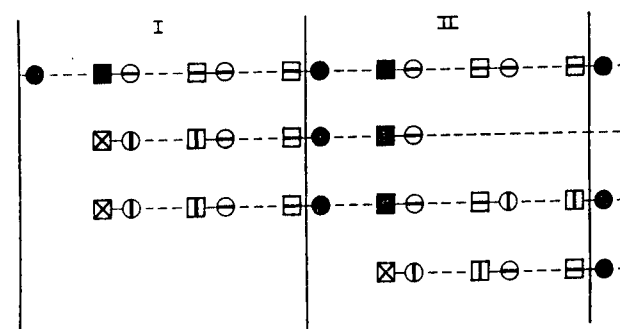
Whereas the First World War provided some classic examples of open inflation, it is to the second that we must look for fully developed examples of repressed inflations, which in the first were only embryonic. The essential function of a Government-induced inflation, such as occurs during a war, is to transfer a larger share of the resources of the country from the service of the private sector to the service of the Government. In an open inflation this function is performed most satisfactorily in the early stages, when personal spending rises less rapidly than personal incomes and personal incomes less rapidly than the quantity of money; and progressively less satisfactorily in the later stages, when personal spending rises faster than incomes and incomes faster than money. The task of a Government, in repressing an inflation, is therefore to prolong indefinitely the initial phase and to prevent the later phase from developing at all.

The method which usually seems to be the first to occur to governments is the fixing of maximum prices. This is perhaps partly because the Government realises that higher prices stimulate demands for higher wages, and therefore may lead either to strikes or to the activation of business balances or business borrowing from the banks in order to pay them. But it is perhaps also partly because governments tend to treat symptoms rather than causes, and rising prices are the most obvious and unpopular symptom of an inflation.

The fixing of maximum prices of consumption goods, at a time when the Government is raising prices of services and incomes by bidding factors away from the service of the private sector with newly created money, tends to have a double effect: to reduce the quantity produced and to increase the quantity consumed. In point of fact, however, the British Government

never seems to have relied for reducing the quantity of goods and services supplied to the private sector on making their production unprofitable. It seems to have preferred to restrict output by restricting supplies of materials and labour, or by direct limitation of the amounts or types of goods allowed to be produced. For such output as was still permitted prices seem to have been fixed at a level which made production of that amount quite adequately profitable, even though these prices were still well below those which would have equated demand with the reduced supply.

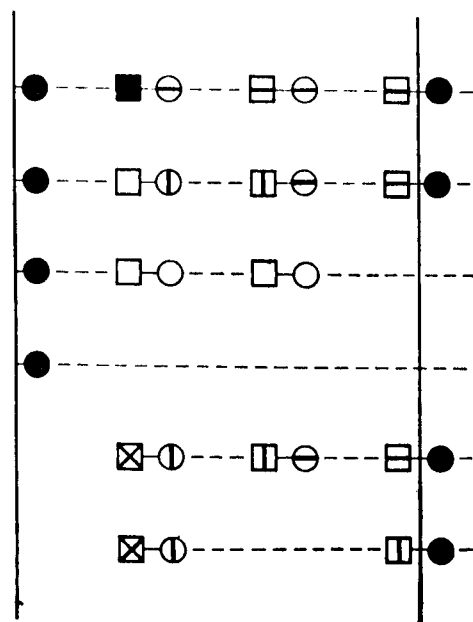
On the side of demand, the fixing of maximum prices slows down the rise in personal incomes in three different ways. In the first place, by reducing the pressure for higher wages under the threat of strikes, it reduces the tendency for the money created for the use of the Government to be supplemented by money activated or created for the use of businesses. Secondly, it makes it impossible for retailers and wholesalers to protect their stocks by raising prices, while their full replenishment is prevented by direct controls. Thus in the early stages of price control the increased demands of consumers can be satisfied for a time out of depletion of stocks. During this period, part of the money paid by consumers remains immobilised in the hands of retailers and wholesalers, to be held idle or lent to the Government instead of being spent on the creation of new goods and of personal incomes:



In this illustration, the Government in period I borrows two units of money from the banks and pays them over to manufacturers, who pay them out in wages, thus creating two additional units of incomes in period II. In period II, both these extra units are spent on consumption goods, but the retailers are prevented from spending them on replenishing their stocks. One of the units is held idle, thus enabling the Government to borrow

from the banks and spend an additional unit without raising incomes further; the other is invested in newly-issued government securities. Thus in period II the Government retains control of the additional resources it attracted in period I without raising incomes above the level of three units.

This stage of the repression of an inflation by price controls is of limited duration. Once stocks are fully depleted, consumers begin to be unable to find means of spending the whole of their incomes, at least on things which they prefer to the possibility of spending savings at some future date on things they want more. When this stage is reached, the excess incomes begin to accumulate in the hands of persons rather than of businesses. If these lend them to the Government, the diversion of the control over resources is achieved directly. If they hold them idle or pass them round in the capital circulation, the Government can cause the banks to create more money to take their place without raising incomes :



Of these four units of personal income, three are diverted to Government use. One is lent to the Government by persons, one is diverted to the personal capital circulation, no doubt raising prices and reducing interest rates there, and one is held idle. The two last units are replaced by new money borrowed from the banks. Personal incomes remain unchanged.

The supplementation of price control by a system of rationing

makes no fundamental difference to this process, for though it distributes consumption goods differently between consumers, it does not change the aggregate amount that can be spent on them. It does, however, make the system of controls more politically acceptable, greatly reduces the scope for favouritism in the distribution of scarce supplies and probably also reduces the incentive to break the law. Adjusted by rationing to appear at least superficially equitable, and supplemented by controls over capital construction and the distribution of producers' goods, these methods of price control appear to operate as reasonably successful repressors of inflation so long as a war actually continues.

One possible method of checking demand, which seems to have considerable merit in principle, but which never seems to have been tried in practice, is rationing *without* price control. If, for instance, every consumer were given coupons to the face value of, say £1 per week which, together with money to the same value, would have to be surrendered in payment for certain classes of goods, the maximum total weekly demand for these classes of goods would be limited to as many pounds as there were consumers. If demand for one of the classes of goods rose, that for the others would necessarily fall; or if demand for all classes rose in one part of the country, it would necessarily fall elsewhere. If prices of these goods were then allowed to rise and fall freely in accordance with changes in demand, the variations in prices between products or between areas would greatly facilitate adjustments in the distribution both of resources between different products and of products between different areas.

Whatever the precise method of its implementation, and however successful it is in restraining inflation during the war, a policy of limiting expenditure by means of direct controls leaves a very difficult situation when the war comes to an end. Since both consumers and businesses have been prevented from spending as large a part of their monetary receipts as they would have wished, they have been obliged to accumulate either idle balances or Government securities in excess of their desires. At the same time, much of the expenditure prevented in war-time, especially on the replacement or repair of assets, is merely postponed. The difficulty of the situation is still further increased if, as in Britain, many of the Government securities issued and obligations incurred during the war are repayable on demand or short notice, so that their owners have the power at any time to force the Government to create additional money in order to meet its obligations to repay. Thus, even though the Government itself rapidly

ceases to rely on the creation of new money for the finance of a deficit, there are present all the potentialities of a renewed and accelerated inflation through the activation of excess idle balances or the enforced creation of new money to make repayments of Government debt.

In face of this potential inflation, the Government has the choice of a number of possible policies, alone or in combination. One of these is to continue the methods of direct control of demand that have been in force during the war. Unfortunately, such controls seem to operate much less satisfactorily in peace-time than in time of war. As soon as the stimulus of the common danger and the single objective is removed, income earners and businesses become progressively less willing to produce and trade in order to obtain money which they cannot spend on what they want to buy; thus production is checked, and more of what is produced tends either to be consumed by its producers or bartered directly for other goods. At the last, if rigid controls are enforced indefinitely, the use of legal-tender money may be abandoned entirely over large sectors of the economy in favour of barter or the use of some kind of commodity money; and the final stage of a repressed inflation may thus be not dissimilar to that of an open inflation.

Even if the policy of control is not carried to the point of this ultimate breakdown, the effect of partial controls are in their own way almost equally unsatisfactory. If, for instance, as is often the case, controls are more effectively enforced over demand for essentials than for non-essentials, the resources released by the fall in defence expenditure tend to be absorbed in supplying less essential, rather than more essential needs, whether at home or for exports. Further, with the loss of war-time incentives and the release of much enterprise and initiative from the armed forces, the control laws become increasingly difficult to enforce and breaches of them increasingly frequent. Unless the Government is prepared to use more resources for enforcement than it can well afford and more drastic methods of enforcement than public opinion is likely to tolerate, the continuation of war-time physical controls over expenditure cannot be relied upon by themselves to do more than create a breathing-space during which methods can be devised for eliminating rather than merely continuing to frustrate the potential excesses of demand.

One drastic method for eliminating excess demand, which has been widely used on the Continent, is the compulsory writing-down of the values of money and money-claims. This forcible

decrease in money and money-claims can be applied, if so desired, in different proportions to different types of holdings or even of holders. If the decreases are sufficiently drastic, and if the Government itself can subsequently so order its finances as to avoid the necessity of re-creating an excessive quantity of money, such a policy can solve at a blow the problem of potential excess demand, though probably only at the cost of much hardship, injustice and perhaps unrest.

If the Government is not prepared to contemplate so drastic a solution of the problem of excessive liquidity in the private sector, it must rely on other methods. One way in which it could destroy some of the money and money assets created during the war would be to develop a very large budget surplus and use it for paying off debt, including debt to the banks. A similar effect could be achieved by means of a very large special tax on capital. It is true that any very large budget surplus, whether or not achieved by means of a formal capital levy, would in fact be paid largely out of idle balances and the assets circulation. If, however, the greater part of the money withdrawn from the assets circulation were simultaneously returned to it by Government repayments or purchases of Government securities held by the public, and only a small part, together with the payments out of idle balances, were used to destroy money by paying off debt to the banks, the reduction in the public's surplus of money and money assets could be achieved without directly affecting the rate of interest; for any reduction in the quantity of money in the assets circulation would be offset by the reduction in the quantity of assets to buy with it. Indeed, if the whole of the money withdrawn from the assets circulation were returned to it, rates of interest would tend to fall.

In such a situation, it would probably be better to obtain the surplus with which to pay off debt by a once-for-all capital levy than by very heavy taxes imposed on income, as being less likely to deter effort or divert it to forms less liable to tax. The fact that the payments were made out of idle balances or the assets circulation would not matter, for the purpose of the operation would be to remove the excess of liquidity and so to prevent an unwanted further rise in money incomes rather than to reduce money incomes below the existing level. The position is thus very different from that in which a Government uses taxes paid out of capital for making income-creating payments; in this case, the effects of the Government's financial operations are on balance inflationary, though less inflationary than if it made income-

creating payments out of newly created money borrowed from the banks. It is thus not high taxation as such which tends to be inflationary but the use of such taxation for making income-creating payments; and it is on Government expenditure rather than on taxation that the emphasis should be laid if it is feared that the payment of taxes out of capital is having inflationary effects.

Even if the Government cannot see its way to an actual reduction in the public's holdings of money and money assets, there are still two ways in which it can limit their inflationary effects while gradually removing direct controls. The first of these is to find alternative ways of limiting income-forming expenditure without raising interest rates. If, for instance, it were possible to persuade persons to spend considerably less than their incomes and so to transfer large amounts of money from the income circulation to the assets circulation or to idle balances, the effect of business transfers of money into the income circulation in the process of replacing physical assets depleted during the war would be counteracted. Unfortunately, the shortage of personal physical assets, the excess of money and money assets already owned by persons and the redistribution of incomes due to the heavy taxation necessitated by continued heavy Government expenditure combined to reduce personal saving in Britain after the war to a very low level; and the devoted workers of the National Savings Movement may be congratulated on their achievement in preventing a much larger consumption of war-time personal saving than has in fact occurred.

A more successful method of keeping down personal-consumption expenditure has been the restraining of wage increases in the face of rising prices. By this means, wages have been kept generally below the equilibrium level, business profits (before tax) at above the equilibrium level, and incidentally unemployment at a level lower than has probably been achieved ever before over so long a period. A very large part of these business savings has been drained off by high business taxes, and much of the rest retained for the replenishment of business assets, more for the reason of business needs than because of the Government's discouragement of increases in dividends. It would not be far wrong to say that, at least until extremely recently, all Governments in Britain since the war have used businesses as a kind of involuntary tax-collecting agent, rather as King John is said to have used the money-lenders of his time.

A third possibility is for the Government itself to impose

personal taxes of a type likely to be paid out of income, in excess of its own income-creating payments. While in the years from 1948 to 1951 the Government seems to have had total income-destroying receipts (including the proceeds of foreign aid) substantially in excess of its own income-creating payments, a very large part of these receipts were derived from the exceptional profits obtained by businesses. Indeed, the attempt to secure a much larger tax yield at the direct expense of personal incomes would probably have encountered serious economic and political difficulties.

Throughout the period since 1947, the Government has supplemented its efforts to divert money out of the income circulation with efforts to restrict the total quantity of money, or at any rate to keep its rate of increase below that of the real national income. With a constant quantity of money, the amount of money in the income circulation can be increased only by depleting idle balances and the assets circulation. Incomes can therefore continue to rise for a time, but the rise will sooner or later be checked when the rise in the income circulation and the fall in the assets circulation and in idle balances have restored their relationship to equilibrium. The increasing depletion of the assets circulation will bring with it a rise in interest rates, the extent of which will depend on the success of the Government's efforts, referred to above, to return money from the income to the assets circulation. The more successful the Government is in restraining the income-creating expenditure of persons, the greater the proportion of the national resources which can be made available for the increase of physical assets held by businesses or the Government, and the more rapid will probably be the rise in the real national income. But there is no doubt that, if the Government is willing to face the effects on asset accumulation of a sufficiently high rate of interest, an inflation can always be brought to an end simply by action to ensure that the quantity of money does not rise further.

There is one question which still remains to be answered: Do we really want the gradual inflation of recent years to be brought to an end? Hitherto it has been possible to maintain an abnormally high level of employment by ensuring that the rise in money wages lags sufficiently far behind the rise in selling prices to ensure that the demand for labour, in most occupations and in most places, is in excess of the supply. If the inflation ends and prices cease to rise, wages will tend to catch up, gross profits will return to normal, the excess demand for labour will

disappear and unemployment will rise. On the other hand, if even creeping inflation continues here after it has ceased in most of the rest of the world, we may expect more balance-of-payments crises and probably further depreciations of the currency.

There seem to be only two possible solutions to the problem of reconciling the present level of employment with the absence of inflation. One is the permanent pegging of wage-rates at below an equilibrium level, either by self-denying decisions of the trades unions (if they can get their members to follow them) or by Government regulation; and even if either of these courses should prove possible, they would involve further difficulties in securing and maintaining a desirable distribution of labour between places and occupations. The only other conceivable solution seems to be a continual increase in real output per person employed, so that money wages could continue to rise, without raising costs of production, though always just a little later than when most employers could afford to pay them. Even this, of course, would not prevent a high degree of unemployment in the event of a serious fall in world demand for our exports, or renewed inflation and balance-of-payments crises if our rising production was offset by a continual worsening of our terms of trade, so that the national real income failed to rise. Nevertheless it seems to offer a chance, perhaps the only real chance, of reconciling full employment with a continued absence of inflation. Let us hope that conditions at home and abroad will enable us to turn this theoretical possibility into an actual achievement.

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PROFESSOR ROBERTSON ON EFFECTIVE DEMAND AND THE TRADE CYCLE

1. WHEN the Editors invited me to attempt a survey of Professor Robertson's present views on effective demand and the trade cycle, they set me a task which is extremely difficult, and perhaps impossible, to carry out satisfactorily. Four books by Professor Robertson have appeared since the end of the war, but three of these are new editions of earlier works to which only a small amount of new writing has been added. It is true that this new writing—in the form of two additional chapters in *Money* (1948) and new introductions to *A Study of Industrial Fluctuation* (1948), and to *Banking Policy and the Price Level* (1949)¹—raises a host of intricate and important issues that deserve the closest attention; but there is no detailed positive statement of the position Professor Robertson would now adopt, and his additions consist in the main of a criticism of Keynesian economics and a vindication of earlier views on these matters. The post-war essays now brought together in the fourth volume, *Utility and All That* (1952), are also predominantly critical and do not include a systematic presentation of his own views on some of the topics with which we must deal.

This is unfortunate, although we must be careful not to imply in a question-begging way that his earlier theories, as set out in the original parts of these new editions and in some of the *Essays in Monetary Theory*, are so badly out of date as to be in need of drastic revision. "After so many years," writes Professor Fellner,² "a surprisingly small part of Robertson's early contribution is outmoded in the sense that a problem with which it is concerned seems to have lost its significance, or in the sense that a statement is clearly less adequate than later statements of other authors on the same subject." Large parts of these pioneering works seem modern even to-day, and some other parts that do not seem so modern are perhaps none the worse for that! For example, his treatment of investment deserves to be studied as a much-needed corrective to some modern tendencies. So much must be conceded, but we must also assume that in certain respects

¹ Augustus M. Kelly, Inc., New York. Unfortunately there has been no new English edition of this scarce and important work.

² "The Robertsonian Evolution," *American Economic Review*, June 1952.

he would now modify his theories, and it is here that we feel a certain lack of guidance.

Faced with this difficulty, we shall have to follow an indirect path in the hope that it will lead us, if not all the way to the destination prescribed by the editors, at least some distance in the right direction; it is a long path, and a somewhat rough one, for it runs through Professor Robertson's prolonged dispute with Keynes. Their famous controversy could not, it is true, be avoided, even if we had some more detailed account of Professor Robertson's present views, but without the latter it must be given a more central position than might otherwise seem appropriate; for we must try to extract from his critical survey of Keynesian ideas some inferences about the extent to which the earlier Robertsonian theories might now be revised if their author were to set himself that task.

In order to assess the outcome of such a battle of giants one would need not merely a detailed knowledge of the extensive literature but also a sense of perspective which is very difficult for a member of my generation to acquire. For we began our study of these matters in the exciting years of the Keynesian Revolution, and whether we supported it or opposed it—or merely tried to keep out of harm's way—our minds were so occupied with the events of the time that, although the dust of the fighting has now begun to clear a little, it is still far from easy either to understand the *ancien régime* or to form a balanced judgment about the Revolution which established the New Economics. I can only say that to my mind much of Professor Robertson's criticism seems unanswerable, provided each point is examined in detail and to some extent in isolation; but I am not so convinced that he does full justice to the more positive achievements of the *General Theory*, or that he is always fully successful in avoiding the temptation to vindicate what went before by reference to passages in the earlier literature which may be isolated and not altogether characteristic. Professor Hicks once said of Keynes that he was "the most Impressionist" of all great economists, and went on to observe that Professor Robertson's criticisms "sometimes remind me of a man examining a Seurat with a microscope and denouncing the ugly shapes of the individual dots."¹ There may be an element of truth in this remark about some of Professor Robertson's comments; but it would scarcely apply to all of them, and, in any case, I suppose it is always open to Professor Robertson to reply

¹ "The Monetary Theory of D. H. Robertson," *Economica*, February 1942.

that it was part of Keynes' job as a professional economist to deal faithfully with detail instead of—in Ruskin's phrase—"flinging a pot of paint in the public's face."

The second of the chapters now added to *Money* bears the title "Problem of Words, Thought and Action," and everyone who is familiar with the literature will be well aware of the trouble the Words have caused. It was Keynes who was largely responsible for starting the uproar, and it is, I think, undeniable that most of what Keynes said in the *General Theory* could have been put in terms which would have been more familiar and more acceptable to many of his colleagues. But that is not the whole of the story. The instinct that led him to adopt a different course may have been a sound one because a major change of emphasis can be achieved only with difficulty if the argument is couched in language which, by long usage and association, evokes responses now held to be undesirable; both author and reader will slip less readily into their old habits of thought if the jargon is new. Keynes appears to have sensed this. In discussing Keynes' attitude to the classical economists, Mr. Harrod observes: "He felt he would get nowhere if he did not raise the dust."¹ It is certainly doubtful whether he would otherwise have eradicated so completely what was left of the Treasury View and smothered so utterly the partially discredited but obstinately recurrent protest that thriftiness can never be excessive. To-day the unsatisfactory condition of the theory of the firm confronts us with a problem in the choice of terminology so analogous to that confronting Keynes that we can, perhaps, sympathise more readily with the course he adopted. It is at least arguable that on balance Keynes was right to change the language as well as the emphasis; but it is clear that the price he had to pay was heavy. His somewhat brusque rejection of so much of the earlier work on the subject appeared unreasonable and gave rise to protracted and somewhat unprofitable controversies. Worse still, he came near to confusing his own mind with some of his innovations. For this reason it is not surprising that Professor Robertson should have felt obliged to reply to the Keynesian onslaught in a long series of articles and reviews; to do so was a necessary and important task. But I am inclined to suspect that the polemical literature, both Keynesian and Robertsonian, leaves an exaggerated impression of the differences between their respective theories; at all events we must try to see how much real disagreement is left when the terminological difficulties are disposed

¹ *Life of John Maynard Keynes*, p. 451.

of. That there is real disagreement is undeniable, but its detection is only part of our task. We may note those innovations in Keynesian theory that Professor Robertson cannot fully accept, but we shall find it more difficult to indicate those he does accept. How far would he now revise his earlier theory in the light of the New Economics? Without more positive statements from Professor Robertson, I can only speculate—and hopefully trail my coat.

2. The defects of Keynes' theory of the rate of interest have engaged Professor Robertson's attention for many years—too much so, perhaps, because he has tended to neglect his own vastly important theory of the connection between economic progress and the trade cycle. As Professor Hicks has observed, the controversy has been, at least in part, a bogus one,¹ for it is not difficult to reconcile the proposition that the rate of interest is determined by the demand for loanable funds and their supply with the proposition that it depends upon liquidity preference and the amount of money. In my view, Keynes' new approach was in this case unfortunate. First, it is easier, I suspect, to go behind broad statements and examine in detail the working of the financial institutions if the analysis is conducted in terms of loanable funds. Secondly, it seems probable that, if Keynes had adopted the older approach, he would have escaped the temptation to suggest that changes in savings and investment could have no direct effect on the rate of interest; by conceding their *possible* influence while maintaining that the other constituents of loanable funds were *in fact* more important, he might have avoided much unnecessary controversy from the outset. It would then have been clear that Keynes was making an empirical generalisation, backed by his own intimate knowledge of the capital market, rather than performing some kind of analytical conjuring trick. His generalisation that "speculative" purchases and sales were a dominating determinant of security prices would have been contrasted at once with the older view that changes connected with idle balances were relatively unimportant, and although there would still, no doubt, have been controversy, it would have been directed to the real point at issue—the interpretation of the facts.² If the argument so far is accepted, are there any basic differences between Professor Robertson's views and the expurgated Keynesian theory I have tried to suggest?

¹ *Value and Capital*, pp. 153 *et seq.* Robertson himself has said as much. Cf. *Essays in Monetary Theory*, pp. 9–10; *Utility and All That*, p. 105.

² My views have been developed more fully in the *Fluctuations in Income and Employment*, 3rd ed., Ch. 11, and in "A Reconsideration of the Theory of Effective Demand," *Economica*, 1947.

It seems almost unnecessary to say that Professor Robertson has never implied that Savings and Investment are the only two constituents of loanable funds that matter.¹ He has observed, it is true, that in his opinion Productivity and Thrift are likely to be the more important factors in the long run,² but he has always recognised that, in the short run at least, changes in the total amount of money together with hoarding or dishoarding may exert a major influence. Indeed, if this were not so, the divergences between savings and investment that are basic to the Robertsonian theory could not occur. The differences between Robertson and Keynes were therefore much less fundamental than those which separated both of them from the defenders of Say's Law.

Paradoxically, the importance of hoarding and dishoarding received very much greater emphasis in the *General Theory* than it had done before. The paradox lies in Keynes' reluctant and dubious use of the term "hoarding."³ In a famous passage he says that "it is impossible for the actual amount of hoarding to change as a result of decisions on the part of the public, so long as we mean by 'hoarding' the actual holding of cash. For the amount of hoarding must be equal to the quantity of money."⁴ It may be, as Professor Villard suggests, that the difficulty arose because "the instantaneous approach of the *General Theory* avoids as far as possible specific reference to time periods, while 'hoarding' in its usual meaning must have a time dimension."⁵

¹ Cf. *e.g.*, the list of possible constituents on p. 3 of *Essays in Monetary Theory*.

² *Ibid.*, p. 24. But the transition from short run to long needs more extended treatment than it receives here. Nor do I feel that this matter has been completely cleared up even in his new essay, "Some Notes on the Theory of Interest," *Utility and All That*, Ch. 6.

³ In this connection it is interesting to recall Keynes' attempt to degrade the Quantity Equations "from the rank of truisms to the rank of untruths" (Robertson, *ECONOMIC JOURNAL*, 1931, p. 396). This is, to my mind, one of the most puzzling features of his work, and it is disconcerting to find that Mr. Harrod, in discussing Professor Robertson's review of the *Treatise*, seems to support the conclusion that "his reviewers had simply failed to grasp what it was he was denying." "While he fully recognized and discussed at length the causal relations, both simple and complex, between the divergence of investment from saving on the one hand, and changes in the quantity of money and velocity of its circulation on the other, he had emphatically denied that an inflationary or deflationary movement was normally caused or necessarily accompanied by the latter kind of changes" (*ibid.*, p. 435 (my italics)). In this Keynes was surely in error.

⁴ *General Theory*, p. 174.

⁵ *Monetary Theory*, Ch. 9, "A Survey of Contemporary Economics," edited by Howard S. Ellis. Cf. Robertson, *Essays in Monetary Theory*, p. 17: "There are inevitable difficulties in expressing in statically-framed terms the situation existing at a moment of time during a period of change. . . ."

This may be part of the explanation, but to my mind it seems natural, in working out the Keynesian theory, to regard as the principal form of hoarding (or dishoarding) those changes in M_2 balances on which his theory of the rate of interest partly depends. If, for example, business obtains additional funds for expansion because, liquidity preference being what it is, securities are bought out of M_2 balances with a corresponding increase in M_1 balances, "dishoarding" in the older sense of the term has occurred.¹ Professor Robertson, for his part, has little difficulty in showing that "the fallacy of hoarding" is not a fallacy after all. He defines "hoarding" as "a decrease in the income velocity of circulation of money";² and if this is taken to mean a fall in the ratio of Y to M_1 plus M_2 ,³ it is not easy to see why there should be any unbridgeable gap at this point between the Robertsonian and the Keynesian theories.

It may be that Keynes laid too much emphasis on the "speculative" purchase and sale of securities: apart from the possibility that productivity and thrift may have some direct influence, a good deal more needs to be said about the behaviour of the banks.⁴ But would Professor Robertson for his part not be prepared to concede that the factors on which the theory of

¹ It may be helpful at this point to look at two examples in both of which the total amount of money is assumed to be constant.

(i) Suppose liquidity preference grows stronger. More money is now demanded for L_2 purposes, but more is not available because M is constant and M_1 is assumed to be a function of Y . The rate must then rise till speculators are content to hold the existing stock of securities. There will, of course, be further repercussions that will affect Y , M_1 and M_2 , but the initial change in the rate of interest has come about without any change in M_2 .

(ii) Suppose there is a change in the demand for investable funds or a change in savings—the more relevant case if we are considering the proposition that "productivity and thrift" cannot affect the rate of interest. If, for example, new securities are floated, the rate of interest will tend to fall, but this tendency must be offset if the rate is to be determined, as Keynes holds it is, by liquidity preference and the amount of money. It is here that a change in M_2 balances is indispensable to the Keynesian theory. For the rate can only be prevented from rising if "speculators" buy more securities and run down their M_2 balances accordingly—that is say, if they dishoard. The change in balances is not associated with a change in the rate of interest; it is rather the factor that prevents such a change and thus allows total monetary expenditure to alter. (Cf. *General Theory*, p. 201 *et seq.*)

These two cases are sometimes confused, and the role of hoarding and dishoarding consequently misunderstood. (Both examples are, of course, highly simplified.)

² *Money*, p. 213.

³ Keynes held that the ratio between Y and $M_1 + M_2$ was "without significance." This seems an unduly harsh judgment. What then is to be said about the various definitions in the Keynesian theory? Is the *ex post* equality between S and T "without significance"? Cf. *General Theory*, p. 209 n.

⁴ Robertson, *Utility and All That*, p. 107.

liquidity preference lays a too exclusive emphasis had previously been, if not ignored, at all events too little stressed by most economists? Would he not agree that Keynes was justified in underlining the fact that liquidity preference may make it impossible in bad times to lower the long-term rate of interest below what is considered a "safe" level? After all Keynes was really taking up a point made by Professor Robertson himself before the Macmillan Committee in 1930, although, as Professor Robertson admits, he had failed to carry general conviction—partly because Keynes' own "sturdy Johnsonian classicism!"¹ Years later, it was Keynes, with his classicism now abandoned, who successfully performed the task of persuasion. Here, as so often in studying the controversy provoked by the *General Theory*, one feels that Professor Robertson is not so much denying the significance of the factors stressed by Keynes but rather protesting that these factors, to which he himself had previously tried to call attention, are not the only ones that have to be taken into account.

In this connection Keynes surely made a real contribution by stimulating the study of the considerations that may lead people to hoard or dishoard. "Where I suspect there is still work to be done," wrote Professor Robertson himself in his review of the *Treatise*, "is in clearing up the nature of the forces which let the spirit of hoarding loose." This is what Keynes sought to do when he emphasised that uncertainty about the future of security prices was a reason for holding cash. His treatment of the matter may not have been fully satisfactory, and there was some trouble with "boot straps"; but progress had been made and an impetus had been given to further study. There is still "work to be done," and it is difficult work because the facts are so elusive. We need not expect agreement to be reached for an indefinite period, but there is little sign of a divergence so fundamental to imply radically different views about the causes of monetary instability.

Before leaving the topic of hoarding it may be as well to make clear that, in attempting to reach a compromise in the use of terms, it has not been implied that the velocity of circulation varies only with changes in M_1 balances relatively to M_2 balances. The ratio between M_1 balances and the monetary value of out-

¹ *Essays in Monetary Theory*, pp. 24–5 n. The quotation from the Minutes of Evidence of the Committee is as follows: "... (Witness). What it comes to is this, that a large part of what appears to be the rate of interest on long-dated securities is now really a premium for risk, or believed risk, and the long rate of interest remains high compared with Bank rate because it contains a large element of what are really profits, the reward for real or imaginary risks."

put should not be regarded as altogether rigid, and the variations that take place can have a direct effect on demand, not an indirect effect transmitted through the rate of interest.¹ The speculative balances themselves may be held not only with an eye to future security prices; possible fluctuations in the prices of commodities may also afford a stimulus to become more or less liquid, and we must make some provision for balances built up out of forced savings during a period of suppressed inflation. The Keynesian division into M_1 and M_2 balances has been a very helpful one, but there may now be a need for some modifications and for a certain amount of tidying up.

3. A sufficient measure of agreement has now been reached about the definitions of saving and investment to allow us to dispose fairly quickly of the controversy to which the *General Theory* gave rise. There is a flat inconsistency in that work between the "straight-forward book-keeping usage,"² which implies necessary equality between savings and investment, and the proposition that the two are brought into equality by a fluctuation in income.³ This, as Professor Robertson reminds us, is about as sensible as to define an elephant's trunk and its proboscis in identical terms, and then "to go on to explain the profound biological forces which tend to adjust the size of the trunk to the size of the proboscis."⁴ It is sometimes held that Keynes can be defended against the charge of formal inconsistency on the ground that in his model lags were assumed to be zero; but this will not do. Keynes refers to output lags, and it is not neglect of them but an irrelevant reversion to the *ex post* definitions which makes him nevertheless maintain that "the logical theory of the multiplier . . . holds good continuously, without time-lag, at all moments of time" (*General Theory*, p. 122). Thus any such attempt to justify his use of definitions at the expense of his sense of realism is likely to encounter difficulties. The most recent attempt of this kind has been made by Mr. Harry Johnson. "The Keynesian theory," he writes, ". . . is a static theory; it is not concerned with the succession of changing equilibrium positions."⁵ Now in a situation of equilibrium *ex ante* saving and investment will be equal as well as *ex post* saving

¹ Cf. Robertson, *Essays in Monetary Theory*, p. 21.

² The expression is Mr. Harrod's. *Ibid.*, p. 456.

³ Cf. Keynes, *Economic Journal*, 1937, p. 249. "The novelty in my treatment of saving and investment consists, not in my maintaining their necessary equality, but in the proposition that it is not the rate of interest, but the level of income which (in conjunction with certain other factors) ensures their equality."

⁴ *Money*, p. 209. ⁵ *Review of Economic Studies*, 1951/52, No. 49, pp. 93-4.

and investment, and Mr. Johnson assures us that "no difficulty arises from the Keynesian definition if a strictly static form of argument is adhered to; for then only positions of simultaneous equilibrium of all the variables are involved." This is so, but as a defence of Keynes' exposition it is unconvincing. All the variables may be equal in positions of equilibrium, but that does not obliterate the distinction that Keynes failed to draw between the *ex post* and the *ex ante*. Admittedly, the confusion in Keynes' mind may have been less serious than Professor Robertson's criticism implies: Keynes seems in places on the very verge of drawing this distinction. The fact remains that he did not do so, and his work remains, therefore, open to valid criticism. Is it not, perhaps, unfortunate that some Keynesians have been reluctant to concede as much and have thus tended to prolong the controversy?

Professor Robertson relates to-day's consumption to yesterday's income, but it must not be inferred from this that he assumes any simple and constant relationship between the two. Although he has not denied that income is one of the determinants of consumption, he has been at some pains to emphasise the importance of other factors, such as changes in the distribution of income and variations in the liquid reserves held by consumers. The importance of these complicating factors is now being more generally recognised, and a good deal of the more recent work on fluctuations in consumption can be regarded—though this is rarely done—as a vindication of Professor Robertson's views. The fall in the propensity to consume during a cyclical upswing is clearly attributable to some other important factors as well as to the rise in real income, and it is therefore unwise to predict, on the strength of cyclical experience, that consumption will fall relatively to real income over a longer period as a community grows wealthier. To take one of these other factors: the shift to profits during an upswing tends to pull down the proportion of income consumed, but over the trend there may be no sustained tendency for the distribution of income to change in this way.¹ By allowing for such complications—including, of course, those discussed by Duesenberry²—the contrast between the cyclical

¹ Even in the short-period, such complications can be important: the proportion of income consumed fell during the cyclical recovery in the United States between 1921 and 1923, but the fall did not continue between 1923 and 1929, years of fairly steady progress when real income per head rose substantially. Cf. Wilson, *op. cit.*, Chapter XIII; Modigliani, "Fluctuations in the Saving-Income Ratio," *Studies in Income and Wealth*, vol. II.

² Duesenberry, *Income, Saving, and the Theory of Consumer Behaviour*.

and secular behaviour of the propensity to consume can be largely explained. The implications are not altogether favourable for the Keynesian theory of long-term stagnation, but the Robertsonian sequence analysis is not in any way invalidated. Its validity does not depend upon there being any simple functional relationship between yesterday's income and to-day's consumption; nor does it depend upon there being a lengthy interval of time between the receipt of income and its expenditure. His sequence analysis should rather be regarded as a way of indicating that saving is *attempted* saving, not simply the total sums that happen not to be spent. The latter may exceed or fall short of attempted savings if the economy is not in equilibrium, and a mere equality between not-spending and actual investment is no indication of stability. Although his analysis differs in some respects from that of the Swedes, there is an obvious family resemblance.

The lag between the receipt of income and its expenditure has come to be known as the "Robertson Lag," and this would be reasonable enough if it were not implied at the same time that Professor Robertson has neglected other lags. Professor Metzler, in an otherwise valuable and instructive essay, has gone so far as to say explicitly that: "Robertson . . . assumes that consumers' expenditure lags behind income, and that within a given expenditure period, output responds immediately to a change in sales."¹ This is surely an odd thing to say about the author of *A Study of Industrial Fluctuation* where Aftalion's *Gestation Period* is discussed at length in both analytical and statistical terms. It must be conceded that, in his later writings, rather less attention is given to the *Gestation Period*, but it is by no means ignored. One of the limitations of the usual models of the multiplier is that changes in consumers' expenditure and changes in the output of consumers' good are treated as though they were a single act, but Professor Robertson must not have this assumption attributed to him.²

Although the controversy about Saving and Investment has now been fairly well cleared up, Professor Robertson, for his part, seems inclined to the view that the echoes of the original confusion may remain, and may, conceivably, influence policy. Thus he quotes the following statement by Lord Beveridge: "capital expenditure itself brings into existence the very savings

¹ "Three Lags in the Circular Flow of Income," *Income, Employment and Public Policy, Essays in Honour of Alvin H. Hansen*, Ch. 1.

² It may be noted that Professor Hicks has used both Robertsonian lags to good effect in his exposition of the Multiplier in *A Contribution to the Theory of the Trade Cycle*.

necessary to finance it." "Now does not that sentence," asks Professor Robertson, "cry out for completion in some such words as these—'and can never therefore be carried out on an excessive scale'?"¹ Although this passage in Beveridge's work² is unfortunately expressed and contains some dubious remarks about the rate of interest, I do not think it could be shown that he, or indeed any competent Keynesian, has ever been so pre-occupied with the *ex post* identity as to apply the argument without reference to the amount of unused resources,³ but at a less sophisticated—though not unimportant—level of discussion, the error may well be encountered. Ideas tend to lose their subtlety in the process of becoming more generally accepted, and some of Keynes' remarks, half-understood and applied in a manner that would have shocked their author, may have tended in recent years to undermine the traditional maxims that used to impose some restraint on extravagance in public expenditure. As for Lord Beveridge, his real error lay not so much in giving universal application to the proposition quoted above as in assuming that conditions after the war would shortly be such as to make it relevant. In this he was not alone; most of us made the same mistake.

4. The Theory of the Multiplier, as presented in the *General Theory*, suffered from Keynes' failure to distinguish between *attempted* saving and investment and *actual* saving, and investment. (The effect of this faulty treatment can still be seen in the improper identification of the relationship between investment and income, as measured by the statisticians, with the Multiplier.) But the error can be corrected and the theory expounded, as Professor Robertson himself has shown,⁴ in a form which, whatever its limitations, is at least free from this internal inconsistency. That the theory has its limitations is undeniable, but is it really nothing more than "a little piece of algebra which serves in many expositions as a magic carpet to waft us from one platform to the next"? It is long past time that people began to speak irreverently about the multiplier, but apart from the need at the moment for a certain amount of debunking, is this a fair comment? And is the Propensity to Consume nothing more than "a potentially useful little brick"?⁵

¹ *Money*, p. 207.

² *Full Employment in a Free Society*, pp. 337–8.

³ After all, one of the leading Keynesians—Mr. R. F. Harrod—has argued more strongly than anyone else that investment has been excessive since the war.

⁴ "Effective Demand and the Multiplier," *Essays in Monetary Theory*, Ch. ix. ⁵ *Money*, p. 211–12.

The verdict on the Theory of the Multiplier will largely depend upon whether the expression is interpreted in a narrow sense to mean "the little piece of algebra," or more broadly to cover some general considerations of which "the little piece of algebra" is merely a special example. The simple algebraic model is based on a number of limiting assumptions—constancy in the marginal propensity to consume, complete elasticity in the supply of funds, complete elasticity in the supply of consumers' goods, zero elasticity of expectations, no induced investment, no secondary effects on public finance and no effect on foreign trade. In this form the theory is open to at least as much criticism as the more mechanistic versions of the Acceleration Principle, and it is a little odd that some of those who have poured scorn on the latter are still prepared to treat the former with apparently undiminished respect. Both theories, however, can be presented less rigidly and in more general terms, and both are then of major importance. That of the Multiplier has served to attract attention to considerations, which, if not entirely ignored, were inadequately appreciated before its appearance: that, at a time when large numbers are out of work, the beneficial effect on employment of a rise in investment will not be confined to the industries making capital goods; that, if there are idle resources, consumption and investment are likely to move in the same direction instead of being alternatives as the earlier theories, which usually started with the initial assumption of full employment, were wont to suggest; that the marginal propensity to consume, whether constant or not, will be *one* of the major determinants of the magnitude of the subsequent change in income. It is in some such general sense that Professor Robertson himself seems to be using the term when he refers, in the new Introduction to *Industrial Fluctuation*, to the "multiplier effects" in Marshall's account of a trade depression.¹ Moreover, it should be observed, in fairness, that in Professor Kahn's original exposition a great deal of attention was devoted to some limitations of "the little piece of algebra," and Keynes himself had some qualifying remarks to make. It is also true that account was quickly taken of the secondary changes in Investment that a multiplier expansion may induce. "Dogs wag tails, as well as tails dogs,"² "but the double wag" was one of the main features of Mr. Harrod's *Trade Cycle* which followed the *General Theory* after a very short interval.

¹ *Principles*, pp. 710–11.

² "Effective Demand and the Multiplier," *Essays in Monetary Theory*, p. 120.

Professor Robertson has shown how satisfactorily his own period analysis can be used to expound the Theory of the Multiplier, although his object in doing so was to criticise. In view of their protracted controversy, it is ironical to reflect that Keynes, for his part, might well have escaped the confusion into which he fell if he had adopted this technique and used it to express ideas which were probably more important *in the thirties* than those contained in most of Professor Robertson's own models. With the wisdom that comes after the event, one cannot help feeling that the most natural and obvious development of Professor Robertson's technique was to introduce various assumptions about the marginal propensity to consume; Keynes does not appear to have seen this, and Professor Robertson himself took this further step only after the publication of the *General Theory*—and without any obvious enthusiasm.¹ In his new Preface to *Banking Policy and the Price Level* he now observes that, "While Keynes must at the time have understood and acquiesced in my step-by-step method, it is evident that it never, so to speak, got under his skin." Admittedly the persuasiveness of Robertson's earlier work was greatly weakened by what he now calls his somewhat "outré technical terms"; but the idea of a period analysis could have been adopted without taking over all those terms.

5. We have referred above to Professor Robertson's preoccupation in most of his writings with inflationary expansions, and it is not surprising that he should now complain about the comparative neglect of price changes in much of the Keynesian literature. In particular, he condemns Mrs. Robinson's suggestion that there should be "two separate compartments of thought, one a theory of money proper and the other a theory of output or employment."² "But we cannot," he writes, "draw a hard-and-fast line, as some have sought to do, between what happens when there are unemployed resources and what happens when there is something more or less arbitrarily defined as full employment."³

¹ "Effective Demand and the Multiplier," *op. cit.*

² *Money*, p. 204. The reference is to Mrs. Robinson's article in the *Review of Economic Studies*, 1933–34, p. 26. Her remark is a little ambiguous. It may be objected that one of the principal features of Keynesian thought was its insistence on the link between monetary expenditure and output; the suggestion that the two be divorced may therefore seem a little strange. But this is not, I suspect, what she had in mind, and her meaning could probably be conveyed more clearly by deleting "a theory of money" in the quotation above and substituting "a theory of the value of money." This is clearly how Robertson has interpreted the passage.

³ *Money*, pp. 204–5. It may be recalled that Mrs. Robinson herself stressed this very point in Chapter I of *Essays in the Theory of Employment*.

While it would be difficult to disagree with the latter sentence, one is left, I think, with the impression that Professor Robertson shows some reluctance in his new commentaries to admit that most economists—including Keynes himself—who wrote about these matters before the publication of the *General Theory*, were guilty, at the opposite extreme, of neglecting the importance of changes in output. Of course, he is right to rebut the modern belief that the assumption of full employment was steadfastly maintained in the earlier works. It is only necessary to turn to the original text of *Money* to find some strongly worded passages about the evils of unemployment, and the policies he advocates for the cure of depression scarcely imply constant real output! Moreover, apart from the prolonged discussion of the secular determinants of output in much of the pre-Keynesian literature, a great deal was said about the effect of short-period fluctuations on the demand for capital goods; after all, the Acceleration Principle has an ancient lineage. But it is a rather different matter when we turn to savings. That the volume of real income is one of the determinants of the volume of savings was clearly recognised, but the significance of this fact was not adequately appreciated: if there are unemployed resources, an increase in output stimulated by an increase in expenditure will raise the volume of savings.

It is difficult to feel entirely convinced by the treatment of these matters in the new Introduction to *Banking Policy and the Price Level*, where Professor Robertson observes:

“It is bound to remain to me a source of some bewilderment that at some time in the period following 1930, the idea that monetary analysis is concerned with the behaviour of output as a whole should apparently have struck Keynes, or at any rate, the able little group who were then advising him, with the force of a new discovery.”

In the same paragraph he refers to a section in this book on the effect of hoarding, and explains that although the formal analysis was “carried out on the simplifying assumption that the production and sale of commodities remain unchanged, . . . the ultimate concern of this section, as of the rest of the book (see the Table of Contents), was with changes in *output*.” This is all very difficult, and perhaps we, in turn, may express some bewilderment.

The changes in output discussed by Professor Robertson in his original texts were often structural, such as relative changes in the production of investment goods and consumption goods, or changes reflecting altered preferences as between income and

leisure. The possibility of general deflation, or “over-production,” is considered in the *Study of Industrial Fluctuation*, but the treatment is somewhat equivocal. In his new Introduction to this book the author refers to his rough handling of Say’s Law, but by modern standards it seems gentle enough; this is not surprising, for the Law is discussed before he has allowed for the effect of modern wage and money systems. Elsewhere there are stronger hints, such as his firm rebuttal of what came to be known as the Treasury View. There was a similar recognition of the effect of deflation on output in *Banking Policy and the Price Level*, and when he came to prepare the 1928 edition of *Money*, he included a chapter on policy which, if it were now to be published anonymously as a separate pamphlet, would undoubtedly be described as “moderately Keynesian” by any reviewer who did not recognise it. Nevertheless, as he himself concedes, his main attention was devoted, even in 1928, to the problem of inflation, and he gives what is clearly the right explanation of an attitude which he shared with most other economists when he says:

“I had shaken down to what I was then justified in calling the ‘common opinion’ that, if this (i.e. inflation) could be avoided, there was good hope that the worst evils of trade depression could thereby be averted. In short, I shared the view that depression was a recurrent rather than an endemic malady”.¹

This view he now contrasts with “the stagnation thesis.”

The theory of stagnation has been described as “the essential content” of Keynes’ theory in an article² by Professor John H. Williams, of which Professor Robertson has said, “I know of no shrewder appraisal of the ‘new economics . . .’”³ What is meant by “the stagnation thesis”? Professor Williams answers this question by giving the following quotation from Keynes:

“The richer the community, the wider will tend to be the gap between its actual and its potential production; and therefore the more obvious and outrageous the defects of the economic system. . . . Not only is the marginal propensity to consume weaker in a wealthy community, but, owing to its accumulation of capital being already larger, the opportunities for further investment are less attractive.”

The prophecy that mature, wealthy economies would suffer from stagnation has now been subjected to a great deal of critic-

¹ *Money*, p. 214.

² “An Appraisal of Keynesian Economics,” *Proceedings of the American Economic Association*, May 1948. Reprinted in *Post-War Monetary Plans, and Other Essays*, Ch. 1.

³ “Some Notes on the Theory of Interest,” *loc. cit.*, p. 97.

ism, and even Professor Hansen is no longer so robust a defender of the faith. This was Keynes at his most donnish and least scientific, and if the prophecy is "the essential content" of his theory, then that theory may not, after all, be of major importance. But there is a more interesting line of thought running through these passages of the Keynesian literature, which we may call "the theory of the weak boom." It is a fact, not a prophecy, that some booms may be too weak to carry the economy to the point of "full employment," and Keynes' theory was largely concerned with the implications of this fact. There was no need to suggest, as he did, that booms would continue to be weak and would, indeed, get weaker; for to take this further step was to make a dubious prophecy about developments in that long-run in which we are all dead. It was enough that, whatever the distant trend might be, the inter-war booms had been sufficiently weak (after 1920) to have made much of the earlier literature seem out of balance. If booms were weak, the analysis of inflation would be less interesting than the analysis of cyclical fluctuations in real income. If booms were weak, it would scarcely be plausible to hold that by moderating them, "the worst evils of trade depression could thereby be averted."¹ I believe it is here rather than in the theory of secular stagnation that "the essential content" of Keynes' thought is to be found—or at all events part of that content.

Let us pose once again some of these questions about Professor Robertson's own ideas that are not clearly answered in his recent works. If he were now describing afresh the principle features of the trade cycle, would he not place a good deal more emphasis on changes in the volume of output than he did before 1936—although it is true that such changes were never ignored in his earlier work?² While continuing to stress the importance of changes in prices and in the distribution of income, topics which are somewhat neglected in the neo-Keynesian literature, would he not think it desirable to pay more attention than he formerly did to the effect on the volume of savings of variations in real national income—an effect which receives no more than a passing mention even in his remarkable essay of 1934?³ If the answer to these questions should prove to be in the affirmative, it would seem to follow that the Keynesian contribution deserves

¹ *Money*, p. 214.

² Cf. the new Introduction to *A Study of Industrial Fluctuation*, p. ix.

³ "Industrial Fluctuation and the Natural Rate of Interest," *Essays in Monetary Theory*, Ch. V, pp. 85–6.

a slightly more sympathetic treatment than it has received in his recent publications.

6. To borrow one of his own metaphors, Professor Robertson has always walked the tight-rope of policy with Blondinian skill. He could not, it is true, be called a Blondinian if there were substance in the belief that he is a firm opponent of "compensatory fiscal measures" and an unrepentant believer in that old-fashioned nostrum, the rate of interest. But so simple a classification of so subtle an adviser reflects only confusion and misunderstanding. From his earliest writings he has adopted a many-sided approach, and his former belief that the excesses of the boom were the real cause of the depression did not prevent him from advocating vigorous action in order to stimulate a recovery.

In his first book (published in 1915) he rejected with scorn Mr. Hawtrey's "Treasury View" and gave his "cordial" support to a policy of public investment as one of the remedies to be adopted in bad times. In the same book there is a plea for "a saner and more centralized investment policy" (p. 266) and a proposal—to be accepted in substance about thirty years later in a great state document, the White Paper on *Employment Policy*—that "a detailed report on new contracts for structural work or machinery should be compulsorily submitted to the Board of Trade." Information about stocks should also, he held, be collected. Banking policy, briefly dealt with in this book, was naturally given a much fuller treatment in *Money*. In the 1928 edition¹ he was warning his readers that the rate of interest, while it would be of assistance and should certainly be employed, might not prove to be as efficacious as was sometimes hoped. Monetary policy was likely to be more powerful in checking a boom than in curing a depression, but even in the upswing it should be *qualitative* as well as *quantitative*. In the depression borrowing might still be insufficient because it might not be possible to reduce the rate of interest enough to entice sufficient borrowers—a proposition of central importance in the *General Theory*, where it was, however, supported by different arguments. In such circumstances there would be need for "a more powerful ally—the Government of the country itself"—armed with a policy of counter-cyclical expenditure. Moreover, interest policy might sometimes conflict with communal needs which were imperfectly represented on the market.

"The present generation seems to have made up its mind about the provision of working class houses; and he must be

¹ In particular, Ch. VIII.

a bold man who, knowing and visualising all the relevant social facts, declares that it is wrong. Now once such a decision has been deliberately taken it seems merely vexatious to hamper its execution by forcing the enterprise in question to submit to the ordeal by rate of interest. In such circumstances it may fairly be urged that the banks, being, when all is said and done, the servants of the community, should be instructed or exhorted or entreated to give effect to its wishes by putting a generous ration of loans at the disposal of the neglected enterprise."¹

Professor Robertson would have earned applause in rather different quarters if, twenty years later, he had merely repeated passages such as these from his earlier writings instead of delivering a new lecture on "The Economic Outlook."²

Enough has been said, I hope, to indicate the wide range of Robertsonian policy and to give some impression of the modernity of what he said so many years ago. Yet it was, I suspect, the very enlightenment of his own views which made it difficult for Professor Robertson to appreciate the revolution in thought which followed the publication of the *General Theory*. Twenty years before Keynes published his *magnum opus*, Professor Robertson had attacked the fallacy behind the Treasury View, but the validity of his criticism had not been generally accepted. His arguments were further developed and set out at greater length in the twenties, and he was supported by some of his colleagues—notably Keynes himself. Progress was made, but the fact remains that remnants of the Treasury View persisted. A great change in outlook was required, and Keynes, heavily engaged as he always was in the thick of the fight, formed a clear notion of the strength of the opposition. In the end it was his rhetoric and his new mystique which carried the day, although Professor Robertson's earlier attacks contributed in no small measure to his success.

7. However easy it may be to show that Keynesian ideas were less original than some of their exponents have been wont to suggest, the effect of the "New Economics," viewed as a whole, was immensely impressive, and the change in emphasis which followed its acceptance was appropriate enough in the circumstances of the time. But circumstances alter with disconcerting speed, and since the outbreak of the War part of the "New Economics" has been irrelevant, although it is only fair

¹ *Money*, p. 173.

² The lecture was delivered to Section F of the British Association and printed in the *Economic Journal*, December 1947.

to add that the study of the national income, which derived so powerful a stimulus from Keynes' conceptual framework, is as valuable in times of inflation as in times of deflation. On the face of it, it might have been expected that the older theories of instability, which were so much concerned with inflation, would then have come back into favour, but these theories needed to be substantially modified in order to allow for the effect of controls and in order to relate the reasoning more closely to the national income concepts. For example, the assumption that real wages would fall while profits and, with them, corporate and personal savings, were inflated, does not seem to be altogether in harmony with recent experience. If the Keynesian "economics of depression" has not been applicable, neither has the economics of open inflation; a third category, the economics of suppressed inflation, has had to be evolved. No doubt Keynes himself, who was always so exhilarated by these swift changes in circumstances, would have continued to work on this new task which he had already begun in his pamphlet, *How to Pay for the War*; his followers, for their part, have not been the most backward in doing so.

It must, nevertheless, be conceded that some ideas, which had their origin in the *General Theory* or were greatly strengthened by it, have had an unfavourable effect on what we may call "middle-brow opinion." Of these, the first we need mention is the belief that the main threat to the level of employment is always too little monetary expenditure. Thus it is sometimes held that, if we cannot hope to hit exactly the right level of expenditure, it is wise to err a little on the side of inflation rather than risk some unemployment. To argue thus is to overlook the fact that too much monetary expenditure may create mass unemployment if it brings disaster to the balance of payments of a country which is heavily dependent upon imported raw materials; an inflationary full-employment policy may therefore defeat its own object. This is one of the lessons which Professor Robertson, for his part, has sought to teach.¹

A second consequence of the "New Economics" has been a too exclusive emphasis on budgetary policy as a means of controlling monetary expenditure. Enough has been said to show that Professor Robertson was one of the first to express scepticism about what could be done by means of the rate of interest and to advocate what is now called "functional finance"; but the

¹ "What Has Happened to the Rate of Interest?" *Utility and All That*, Ch. 5, p. 92.

reaction against banking policy, when it came, went too far, and Professor Robertson, preoccupied as usual with the disheartening task of trying to advance a balanced view, has given many unpopular warnings about the danger of placing "too big a burden on the broad shoulders of Police-(on)stable Public Finance." He has reminded us that "Sir Stafford Crippses . . . do not grow on every gooseberry bush," and even when there is a Crippsian determination, severe damage may be done if taxation is raised to a very high level. As usually happens, the events have run ahead of popular theory. Banking policy was—until recently—dethroned and exiled, and budgetary policy exalted in its stead; but while this was going on, the burden of state expenditure was sapping the victor's strength. If the budget is to be the principal method of checking inflation, the sums needed to meet public expenditure must not stretch the somewhat inelastic limits of taxable capacity too tightly; otherwise it becomes necessary to choose between an inadequate surplus on the one hand and, on the other, a level of taxation that cannot be reconciled with the needs of healthy industrial development. Functional finance had not been rendered impotent, but it has been sufficiently weakened by heavy public spending to justify the restoration, as an additional and reinforcing measure, of the old-fashioned policy of credit control. Professor Robertson's advice was taken at last in 1951 and 1952—and if it is held that this was rather late in the day to do so because the inflationary gap had become less menacing, it may be replied, first, that the gap had by no means disappeared, and, secondly, that, as Professor Robertson has pointed out, there is a close connection between credit policy and wage inflation.¹

It takes a great deal of optimism to suppose that no harm will be done, even in a period of strong inflationary pressure, by providing an elastic supply of credit on easy terms. I find it difficult to believe that Keynes would have held so sanguine a view over the past few years, and the following observation by Professor John H. Williams is of no small interest: "Keynes changed his mind, and almost the last time I saw him was complaining that the easy money policy had been greatly overdone, and interest rates were too low both in England and here."² The fact remains that the creed of cheap money—the faith that

¹ "What Has Happened to the Rate of Interest?" *loc. cit.*, p. 90-2.

² "An Economist's Confessions," *American Economic Review*, March 1952, p. 14. But some of Keynes' followers do not appear to have accepted this view. Cf. Harrod's defence of cheap money even in 1947: *Are These Hardships Necessary?* pp. 124 *et seq.*

defies economic vicissitude—grew out of Keynes' "economics of depression."

The last feature of the neo-Keynesian recommendations with which we shall deal is the proposal that investment should be stabilised. Doubts have been expressed about the extent to which such a policy can be implemented so long as large sectors of industry remain in private hands, and the controversy has, I think, mainly centred around this question of enforcement. But is it really true that a stable volume of investment is a wise objective? Or rather, since it is bound to be a question of degree, how much stability do we want and what price are we prepared to pay for it? Over a period of many years, Professor Robertson has been asking these questions, and I suspect that the sooner we face the fundamental issues he has raised, the less likely are we to be disillusioned by the outcome of full-employment policies. Professor Robertson, it need scarcely be said, has always recognised that there are secondary, or induced, declines in investment during a downswing, and the case for preventing "a purposeless and obscene orgy of destruction"¹ is not in doubt. But periodic variations in the utility of investment goods must be expected, and these variations can be ignored only at the expense of sacrifices in other directions which may become excessive. "To a large extent, in the writer's view, fluctuations in the desirability of acquiring instruments are the inevitable penalty of industrial progress."² Since the War, investment, though restricted, has probably been at a higher level than a policy of cyclical stabilisation would have warranted, but it is not surprising that we should have allowed more immediate needs to govern our decisions about the number of houses, factories, ships and machines we should try to construct. Some fluctuations in investment are desirable and some are not. Professor Robertson's work on the trade cycle has been largely concerned with distinguishing between the two in the hope that means can be found "to limit the turbulence, without destroying the vitality" of industrial change.

8. We have now worked backwards from the study of policy to Professor Robertson's views on the trade cycle. No attempt can be made here to assess his immense contribution, but it may at least be possible to indicate his method of approach. Professor Robertson, whose views are similar in some ways to Schumpeter's, has laid great, though not exclusive, emphasis on innovations as a cause of the cycle. He has tended to regard the cycle as an

¹ "The Snake and the Worm," *Essays in Monetary Theory*, p. 105.

² *Banking Policy and the Price Level*, p. 94.

aspect of industrial progress, and to infer that the nature of the fluctuations cannot be understood if the study of them is isolated from the study of industry. By contrast, most of what has been written on the trade cycle over the past couple of decades, in this country at least, has been concerned with the construction of models which will display a self-persistent cycle. Instead of trying to discover and to analyse the main "strategic factors" that may govern the course of the cycle,¹ the authors of these models have reduced the number of factors to the minimum consistent with perpetual motion. There has been, of course, a partial justification for this method, and much has been learned from the "endogenous" models so constructed. But there has been some tendency to forget—what no one would explicitly deny—that these models are only preliminary exercises from which many factors have been excluded either because they are "unnecessary" or because they cannot easily be given a mathematical form. Thus the cyclical changes in the distribution of income, to which Professor Robertson has given so much attention, now tend to be ignored; and, to an even greater degree, the complex process of industrial change has suffered from more or less chronic neglect. Without questioning the usefulness of the work done by the model-makers, I would suggest that their methods have received too exclusive attention, and to this I would add that there has been a parallel tendency to place a too exclusive reliance upon the methods of those "latter-day wizards, the econometricians." But I cannot do better than quote Professor Robertson's own remarks about the various ways in which the trade cycle has been studied:

"As to stylised models of the cycle, of the kind now so fashionable, they doubtless have their uses, provided their limitations are clearly understood. We must wait with respectful patience while the econometricians decide whether their elaborate methods are really capable of covering such models with flesh and blood. But I confess that to me at least the forces at work seem so complex, the question whether even the few selected parameters can be relied on to stay put through the cycle or between cycles so doubtful, that I wonder whether more truth will not in the end be wrung from interpretative studies of the crude data of the general type contained in this volume, but more intensive, more scrupulously worded and more expert."²

9. We have already noted the main points of conflict between Robertson and Keynes, some of them attributable to verbal

¹ Cf. "An Economist's Confessions," by J. H. Williams, *loc. cit.*

² *A Study of Industrial Fluctuation*, pp. xvi–xvii.

difficulties, others real enough; in conclusion it may be illuminating to attempt the regrettably unfamiliar exercise of recording how much they have in common. We are not sure how much Professor Robertson would now modify his earlier analysis; this difficulty will continue to perplex us, but I believe it is possible to argue that the points on which he and Keynes are in agreement are more important than those on which they differ. In attempting to support this claim, I shall confine most of my attention to Keynes' own works and neglect in the main those of his followers—a vaguely defined group, in which many conflicting views are represented. I shall use terms derived from various sources, not, I hope, inconsistently, but with little tenderness for that strange academic prudery which seems to afflict some of Keynes' supporters.

The controversy about savings and investment need not detain us. The terms are used in two different senses in the *General Theory*; Keynes failed to distinguish between these senses, and the stubbornness with which he and some of his followers defended his position was responsible for much needless dispute; but the error can be corrected without upsetting Keynes' argument, and it is probably true that outside Cambridge this particular controversy is now dead. We may therefore say that both Keynes and Robertson are in agreement on the central proposition that the amount people try to save may diverge from the amount people try to invest, with consequent changes in total monetary outlay. If this proposition, taken by itself and without reference to their controversy, now sounds almost too obvious to be worth advancing, it is well to remember that its general acceptance, at least in this country, was largely achieved by the combined efforts of Robertson and Keynes. Savings and investment may diverge because the rate of interest does not act as the equilibrating factor it was once supposed to be.¹ To say this is not to deny that savings and investment can have some direct effect on the rate of interest. Here Keynes tended to advocate a view that was unnecessary for his main thesis. It would have been enough to say that there are other forces at work of sufficient importance to promote a major fluctuation in monetary outlay, and Professor Robertson, for his part, has long since emphasised that this is in fact what happens. In this connection the con-

¹ One has to be careful at this point. Many of the earlier economists recognised that the rate of interest might not be allowed to do its job during an expansion, but they were reluctant to admit as much about a contraction. I have already referred to this asymmetry in classical thought in the first chapter of *Fluctuations in Income and Employment*.

tribution of the *General Theory* was twofold: it emphasised the importance of changes in the desire to hold idle balances, and it drew attention to the need for further study of the motives that lead people to want such balances. There is still a good deal of uncertainty about the manner in which hoarders behave, and the links between different parts of the capital market, different rates of interest and different security prices are by no means clear. To pretend that there is now a settled body of opinion about these matters would be absurd, but that is not the immediate point at issue. What we are concerned with is to say that although there has been a mountain of misunderstanding, for which Keynes must bear much of the blame, there appears to be no irreconcilable conflict between his basic ideas and those of Professor Robertson.

One of the principal changes brought about by the Keynesian Revolution was to lay greater stress on the effect of changes in real income. Here we can only ask whether Professor Robertson would not agree that this was desirable in the circumstances of the time, even if, as so often happens, the change of emphasis went too far. Would he himself not now be inclined to pay rather more attention than he did in some of his earlier works to the occurrence of weak booms?¹ Here too, Keynes went too far, momentarily intrigued as he was by his prophecy of stagnation; but it is not hard to trace a path of compromise, provided some realistic allowance is made for the differences between cycles. The propensity to consume was over-simplified by Keynes, and the theory of the multiplier unduly exalted. But would Professor Robertson, for his part, be prepared to concede that the size of the marginal propensity to consume, whether steady or not, is a critical factor—not merely “a potentially useful little brick”—and one which his own earlier models neglected?

In reviewing Professor Robertson's recommendations for the control of the trade cycle, I have already commented on their Keynesian flavour. Perhaps I should have said that Keynes' recommendations have a Robertsonian flavour, but my concern is not with historical precedence, an almost insoluble issue in any case, but with the marked degree of similarity between their views. This similarity appears more striking when it is recalled that Keynes' own views, as expounded, for example, in *The Times* in 1936, were a good deal more modest than some of those now

¹ Weak booms are in fact discussed in his two famous essays, “The Snake and the Worm” and “The Trade Cycle—An Academic View,” both reprinted in *Essays in Monetary Theory*.

entertained about “full employment.” In matters of policy I suspect that the main difference was one of general outlook. Keynes always tended to be optimistic about what could be done; his recommendations were advanced with confidence, and he seems to have felt that great improvements could be made if people with the right ideas were in charge of affairs. By contrast the author of “On Sticking to One's Last”¹ has always appeared cautious, more impressed by the uncertainty of the future and more dubious about the infallibility of even the best of advisers. Keynes' belief in what could be done with clever men in control, and his impatience with those who obstructed their path formed a certain bond of sympathy between him and the supporters of rigorous economic planning, but his temperamental bias did not lead him to abandon his belief in a liberal economy before the war. We need not embark upon much dubious speculation about the extent to which Keynes would have favoured the use of controls in post-war Britain; some may suspect that before his death he had begun to believe in such planning to a much greater extent than Professor Robertson, but the evidence is conflicting; at all events his work on international trade scarcely implied that he had lost faith in the price mechanism. Moreover, his famous letter to Professor Hayek, though it revealed a divergence of views, showed that he was not prepared to dismiss as absurd the fear that we might drift unwittingly down the Road to Serfdom.²

The trade cycle receives only scanty treatment in the *General Theory* and in Keynes' subsequent writings, but there is sufficient evidence to suggest that his general approach was not altogether dissimilar to Professor Robertson's. Admittedly the theory of the multiplier seems to imply a belief in at least one key parameter, but to my mind the general tone of the book, with its heavy emphasis on volatile expectations, is hostile to the view that elaborate mechanical models can provide a sufficiently realistic explanation of the trade cycle. Moreover, the classical attack on econometrics was delivered by Keynes himself in his review of Professor Tinbergen's work, and his criticism was strong

¹ ECONOMIC JOURNAL, December 1949.

² Harrod, loc. cit., p. 436–7. The letter also reveals his optimism about what can be done with the right people in control. “Moderate planning will be safe if those carrying it out are rightly orientated in their own minds and hearts to the moral issue. This is in fact already true of some of them. But the curse is that there is also an important section who could almost be said to want planning not in order to enjoy its fruits but because morally they hold ideas exactly the opposite of yours, and wish to serve not God but the devil.” He appears confident that this evil could be exorcised, though the grounds for his confidence remain obscure.

and forthright as compared with the misgivings gently expressed from time to time by Professor Robertson. It was unfortunate that Keynes was unable to develop his ideas on the cycle, and it is still more unfortunate that Professor Robertson, for his part, has not taken the opportunity to revise those theories which originally made such an impressive contribution to the subject. The *Study of Industrial Fluctuation*, great book though it is, is out of date, as its author would be the first to admit; in particular, the subtle analysis of industrial change that it contains needs to be related to a more modern theory of effective demand. In the books and articles that appeared between the *Study* and the appearance of the *General Theory*, Professor Robertson did in fact go a long way towards making this relationship plain; but a good deal has happened since then, and it has surely not all been in vain. Presumably there are some points in the Keynesian theory which should now be incorporated in the Robertsonian account of the cycle. The neo-Keynesians, for their part, have been primarily interested in mechanistic constructions in which great aggregates move along predestined courses; the complexity of industrial growth, the structural changes that accompany the cycle, the connection between economic progress and the instability of investment—these and many related topics have tended to go out of fashion. Admittedly we have learned a great deal from the study of mechanical models, and it would, I think, be a great mistake to imply that we must choose between the two methods of approach; both are needed. We have also learned a great deal from the controversies about savings, investment and liquidity preference that have occupied so much of Professor Robertson's attention in recent years. But one cannot altogether suppress the suspicion that the most important task has been largely neglected—that of combining some of Keynes' innovations with Professor Robertson's own theory of industrial instability. Such a combination would surely provide us with a more impressive and realistic account of cyclical fluctuations than has yet been evolved.

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IMPERFECT COMPETITION REVISITED

The Economics of Imperfect Competition was a scholastic book. It was directed to analysing the slogans of the text-books of twenty years ago: "price tends to equal marginal cost" and "wages equal the marginal product of labour"; and it treated of text-book questions, such as a comparison of the price and output of a commodity under conditions of monopoly and of competition, demand and costs being given. The assumptions which were adequate (or which I hoped were adequate) for dealing with such questions are by no means a suitable basis for an analysis of the problems of prices, production and distribution which present themselves in reality.¹

1. INDUSTRIES AND MARKETS

The assumption that each firm produces a single commodity conceals the distinction between the output of an *industry*—that is, a group of firms engaged in production of commodities alike in their methods of manufacture, and the supply to a *market*—that is, the demand for a group of commodities which are close substitutes for each other. In ordinary language when we speak of the cotton industry, the iron-founding industry, the boot-and-shoe industry (leather) we are thinking of a group of firms engaged in a certain type of production, governed by the kinds of object produced and the materials of which they are made. Sometimes a single firm produces very diverse objects which are complements to each other, and therefore sold together (pens and blotting-paper, low-power electric motors and artificial teeth) and sometimes quite unrelated objects are bound together in production because they are bound together in selling by conventional shopping habits (hair-brushes and medicines). Many of the products of a single industry are extremely remote substitutes for each other. There is no overlap, for instance, between the markets for men's and

¹ I should like to take this opportunity of saying that I have never been able to grasp the nature of the distinction between *imperfect* and *monopolistic* competition to which Professor Chamberlin attaches so much importance. (Cf. "Monopolistic Competition Revisited," *Economica*, November 1951.) It appears to me that where we dealt with the same question, in our respective books, and made the same assumptions we reached the same results (errors and omissions excepted). When we dealt with different questions we naturally made different assumptions. In many respects Professor Chamberlin's assumptions were more interesting than mine, in particular in connection with oligopoly and with product differentiation as a dynamic process.

children's shoes or for drain-pipes and stoves. On the other hand, products of totally different industries may be quite close substitutes—rubber and leather shoes; asbestos and cast-iron drain-pipes.

The concept of an industry, though amorphous and impossible to demarcate sharply at the edges, is of importance for the theory of competition. It represents the area within which a firm finds it relatively easy to expand as it grows. There are often certain basic processes required for the production of the most diverse commodities (tennis balls, motor tyres and mattresses) and economies in the utilisation of by-products under one roof. The know-how and trade connections established for one range of products make it easier to add different commodities of the same technical nature to a firm's output than it is to add mutually substitutable commodities made of different materials, or made or marketed by radically different methods. Moreover, the members of an industry have common interests and a common language, and feel a kind of patriotism which links them together, even when they are in competition with each other. It is much easier to organise control over one industry serving many markets than over one market served by the products of several industries.

The degree of concentration in an industry, measured by the proportion of its output produced by, say, the three largest firms, or the degree of monopoly in the sense of the closeness of the organisation binding the firms, may have little relation to the degree of monopoly in the markets which it serves, in the sense of power to control prices. An unconcentrated and unorganised industry may contain a number of very strong small monopolies over particular commodities, while another, highly concentrated or tightly organised, may be meeting competition in some or all of its markets from the products of rival industries which are substitutes for its own.

Generally speaking, the supply of a commodity (using that term in a broad sense to cover a group of fairly close substitutes) to a market can be expanded much more readily than can the productive capacity of an industry, for to increase capacity usually requires investment in plant and recruitment of labour, while to increase the output of a commodity often means merely switching over from one line of production to another within a plant.

Dropping the fiction of one-commodity firms destroys the simplicity of the analysis of imperfect competition, but enlarges its scope. Cases where the imperfection of markets combined with ease of entry lead to an excessive number of businesses with low

turnover occur mainly in special fields (service and bespoke trades, small shops, petrol filling stations), whereas every efficiency expert who comments on British manufacturing industry points out the almost universal prevalence of uneconomically short runs and small batches in the output of individual lines of production.

To provide an analysis of this situation within the framework of the *Economics of Imperfect Competition* it is necessary to combine (with certain modifications) the treatment of polypoly in an imperfect market with the treatment of price discrimination, which shows how prices are fixed by a firm selling in a number of separate markets.¹

There may be good reasons for the production under one roof of what, from a technical point of view, is an excessive number of separate commodities; there may be genuine economies (in transport, correspondence, etc.) in offering a "full line" to buyers, as well as commercial advantage to the individual seller, and the principle of gaining on the roundabouts when the swings are slack reduces risk, unemployment and wastage of capacity. Moreover, non-commercial motives, such as pride in covering the whole field, may enter into the matter; but there can be little doubt that the main cause is the imperfection of competition, in the sense that if either buying were rationalised so as to make markets more perfect or monopoly was more complete, productive efficiency would be improved.

The general moral of the *Economics of Imperfect Competition* which points to the rationalising monopsonist as the best pilot to find a channel between the Scylla of competitive inefficiency and the Charybdis of monopolistic exploitation seems to remain valid when the assumption of one-commodity firms is dropped, though this is not the kind of proposition that can be established by geometry alone.

2. WHO MAXIMISES WHAT?

The treatment of the entrepreneur and his profits in the *Economics of Imperfect Competition* is extremely primitive. Clearly in modern times there is no single universal type of entrepreneur. At the one extreme there is the individual who founds, owns and

¹ See Eli W. Clemens, "Price Discrimination and the Multiple-Product Firm," *Review of Economic Studies*, Vol. XIX (1), 48, 1951-52. "Price discrimination and multiple-product production are not exceptions to general practice, but are rather the essence of customary action. . . . The theory of price discrimination must be viewed as the heart of price-cost theory rather than as a peripheral case."

manages a business, in the Marshallian style; at the other, the great company of the "managerial revolution," nominally owned by a large and shifting population of shareholders totally ignorant of its workings, and controlled by a self-perpetuating cadre of managers and directors; in between, the type of concern which is legally a public company but in effect a family business, and the type of concern which is controlled by a group of large, permanent shareholders, though it may be more than half-owned at any moment by casual shareholders whose brokers happen to have advised them to put their money into it for a time; there are quasi-independent subsidiaries of other concerns; concerns owned by holding companies, nominally independent concerns linked by overlapping directorates and so on, in bewildering variety. But all have some characteristics in common. A manufacturing business in modern technical conditions requires a high degree of co-operation and continuity. Industry, as opposed to commerce, could not have developed in an economy where the capitalists were all ruthlessly individualistic childless orphans. A successful business has a kind of personality, like a college, with which many, and successive, individuals identify themselves, and the subordination of the interest of casual shareholders, who want immediate profit, to the interest of management, which flourishes with the life of the concern, means that a public company is more like a family business in effect than it is in legal form. I therefore feel that for a first shot at a simple stylised analysis the most useful starting point is still "the entrepreneur," regarded as the personification of a "firm" rather than as a particular individual in a pair of trousers.¹

What is the aim of the entrepreneur, in this sense? If we neglect the promoter, who starts a business in order to sell it to the public, and the short-lived "mushroom," who springs up to make a quick profit in a seller's market, it seems to me that the most valid simple generalisation is that the aim of the entrepreneur is for the firm first to survive, and secondly to grow. To this end he must pursue profit, but he must avoid action which, though profitable in the present, will damage his future position, and, since this is partly bound up with reputation, his course of conduct will be much influenced by the climate of opinion in which he operates. All this is sadly vague, and the subject needs much more field study of business behaviour. Meanwhile I am inclined to retort to those who grouse about the

assumption that the entrepreneur's aim is to maximise profits in the immortal words of Old Bill: If you know a better 'ole, go to it.

A more obvious defect is the uncritical acceptance of the idea of a "normal level of profit" at which the size of a firm is in equilibrium. To discuss the size of firms it is necessary to break up the notion of an industry, and consider its separate stages or branches. In many industries alongside of mass production there is a considerable amount of jobbing or bespoke work (building repairs, electric shop signs, hand-sewn shoes), where the "little man" has positive advantages compared to the large firm. Since such types of production can be started with a small investment of capital, they are easy to enter for an individual with the requisite know-how, and the rate of profit in them is kept low. An individual who makes a success in such business is more likely to grow out of it than to expand laterally. Here there may be no very definite equilibrium size, but the argument in terms of an equilibrium rate of profit seems to be a useful starting point for analysis. In other types of manufacture, where the variegated nature of the material (wool, leather) is inimical to mass production, or where highly imperfect markets impose a very variegated output (fashion trades, publishing), the flexibility of one-man management may give advantages to a moderate-sized firm over a great departmentalised concern, and, in general, there are risks and difficulties and loss of amenities in going through the stage of growth involved by changing from the one type of organisation to the other. Once that threshold is passed, there seems no reason to expect diseconomies of scale to be important—certainly not important enough to outweigh the strategic advantages of size.¹

The rate of growth of a firm is limited by the imperfection of the capital market (here Mr. Kalecki's principle of increasing risk² is the best starting point for analysis, though his formulation, in turn, is oversimplified³) and by the need to consolidate and fortify each new position after it has been captured. But, given time to accumulate capital out of profits and to acquire know-how and trade connections, there seem to be no limit to the ultimate size of a firm, until a condition of oligopoly is reached in each of the markets for the commodities supplied by the industry, so that the last stages of the competitive struggle are too costly to be fought out. Even then, firms may continue to grow by crossing the

¹ Cf. N. S. Ross, "Management and the Size of the Firm," *Review of Economic Studies*, Vol. XIX (3), 50, 1952-53.

² *Essays in the Theory of Economic Fluctuations*.

³ L. Wellisz, "Entrepreneur's Risk, Lender's Risk, and Investment," *Review of Economic Studies*, Vol. XX (2), 52, 1952-53.

¹ Cf. B. S. Keirstead, *The Theory of Profits and Income Distribution*, p. 40.

boundary which divides industries and seeking quite fresh fields in which it is possible to expand without challenging too powerful opposition. (Nowadays it is quite common for new industries to be started by large firms already established in a monopoly or oligopoly position in an older industry, rather than by new small-scale firms.)

The profitability of a market is not the same thing as the profitability of an industry. We should expect the profit obtainable in a particular market to be strongly influenced by the difficulty of entering it. Commonly a firm enjoys different profit rates on different parts of its output—less on its “bread-and-butter lines,” which are standardised commodities where the market is nearly perfect and easy to enter, and higher on specialities in which it has individual advantages. But as between industries, and still more as between firms, it is hard to make any kind of simple generalisation about profit rates, and the notion of a “normal level of profits” and an “equilibrium size of firm” seems to have very little application to reality.¹

3. OLIGOPOLY

The reason oligopoly is neglected in the *Economics of Imperfect Competition* is not that I thought it unimportant, but that I could not solve it. I tried to fence it off by means of what unfortunately was a fudge in the definition of the individual demand curve.²

4. FORMS OF COMPETITION

The assumption that price is the main vehicle for competition is a great over-simplification of reality. The very fact that markets are not perfect means that competition may take many forms. The main vehicles of competition may be summarised as: (1) imitation of products; (2) differentiation of products—and these may be in respect of qualities which affect practical usefulness or pleasure to the consumer, qualities which appeal to snobbishness or to pseudo-scientific notions, or simply methods of packing and labelling articles; (3) services of all kinds, prompt delivery, long credit; (4) advertisement; (5) pure salesmanship, in the sense of the persuasiveness of travellers, etc.; (6) higher price—giving the impression of better quality; (7) lower price.

The multi-dimensional nature of competition is illustrated by

¹ Technical economies of scale may, of course, establish a minimum size of plant, and so a minimum size of firm, but they do not establish a maximum size of firm, since, at worst, plants can be duplicated.

² *Op. cit.*, p. 21.

the fact that rings formed to limit competition, which begin by agreeing only on a price list for their products, often go on to limit terms of sale, permissible types of advertising appeal and the specification of products, so that sometimes competition in pure salesmanship is all that is left unregulated, and rival travellers are found making offers to potential customers which are identical in all respects except the names on the labels of the goods.

In principle, it is possible to set out a system of simultaneous equations showing what combination of price, outlay on production costs and outlay on selling costs would yield the best profit for a particular commodity in a particular market, taking into account the reaction upon costs and sales of other commodities produced by the same firm. Even if he had the data, the business executive would need an electric, not a human, brain to work out from the equations the correct policy in time to put it into effect. And the data are necessarily extremely vague, since the consequences of a given policy cannot be isolated in ever-changing markets. The recent development of advertising of advertisement is a witness to the difficulty which manufacturers have in knowing the consequences of advertisement, for if they knew its effects there would be no scope for persuading them that it is greater than they think. In reality, evidently, an individual demand curve (for a particular product produced by a particular firm) is a mere smudge, to which it is vain to attribute elegant geometrical properties.

It is important to observe that even when competition takes the orthodox form of a lower price charged by a manufacturer there is not necessarily competition in price to the consumer. A common method by which new-comers try to make head against established firms in a particular market is to offer larger margins to dealers to induce them to stock and push the goods concerned. This kind of competition is most definitely seen where the established firms practise resale-price maintenance, or where there are conventional “price tickets” which settle the retail price of an article of a certain range of (apparent) quality; but it may exist also wherever price competition between dealers is not very sharp.

Product differentiation and advertising, which appeal to the consumer over the head of the retailer, appear to be as much an element in the struggle for strategic advantage between manufacturers and dealers as a vehicle of competition between manufacturers.¹

¹ N. Kaldor, “The Economic Effects of Advertising,” *Review of Economic Studies*, Vol. XVIII (1), 45, 1949–50.

Once more the moral of the argument is strengthened rather than weakened by the complications which it is necessary to introduce into the analysis. The wastes of imperfect competition take many more forms besides sub-optimum scales of production and the benefit of price competition, imposed by perfect markets (provided that it is not at the expense of wage-rates), is in putting a premium on technical efficiency, as opposed to cunning salesmanship and strategic power, even more than in defending the consumer from exploitation.

5. PRICE POLICY

The picture of an entrepreneur finding the most profitable price for a commodity by trial and error, while market and cost conditions remain constant for long enough for the experiment to be carried out, is exceedingly unlikeliest. It must be very unusual for an entrepreneur to alter a price in cold blood, just to see what will happen, and even when a change clearly seems advantageous—say a rise in price following a rise in demand—he usually waits for some colourable excuse, say a rise in material costs, before putting it into effect. In many types of market (especially where the firm publishes a price list) overt price changes are avoided as much as possible. It is more common to alter the quality of a commodity at a given “price ticket,” or to offer special rebates to particular classes of buyer, than to make a change in listed prices.

There are a number of situations, however, in which an entrepreneur has to take a decision about price. How far is the kind of analysis suggested by the *Economics of Imperfect Competition* useful in discussing how he behaves?

(a) When an entrepreneur has to decide whether to add a new line of production to his output he must consider what gross receipts it can be expected to bring in over a certain period, and compare this estimate with an estimate of costs, including, where it is relevant, the opportunity-cost of displacing some other part of his output. In some cases (a new model motor car, a title in a publisher's list) the idea of elasticity of demand is present to his mind at least in a vague way—he thinks of what quantities are likely to sell at various prices. In some cases he has an idea of “the right price,” given by the prices of similar commodities already in the market; in other cases it is rather a matter of a shot in the dark. Comparing expected receipts with costs, he has to decide whether it is worth while to embark on the new line. In a small firm which cannot carry the overhead

of a “scientific” costing system he may proceed by adding to the prime cost, or the labour cost only, or the material cost only, the percentage margin which his other lines of production carry and then considering if the resulting price “looks about right.” If the resulting price seems too high, he decides that the line in question is not for him. If anyone asks him what he does, he naturally replies that he fixes prices according to costs,¹ but clearly it would be absurd to work out cost, according to some formula, and then cast goods on the market at the corresponding price without consideration of the conditions of demand.² Nor does the entrepreneur's idea of “the right price” mean that he thinks that at a certain price there is an indefinite demand. It means rather that he thinks that a higher price would limit sales very much, and that at “the right price” a sufficient quantity can be sold to make the venture profitable. It seems to be an over-formalisation, rather than a totally misleading approach, to think of his decision as being taken on the basis of some sort of conception of an individual demand curve.

Both demand and costs have to be thought of in three dimensions—a certain rate of sales for a certain length of future time (or rather an uncertain length). The period over which any special investment, or cost of tooling-up, has to be recovered, and the length of time that the commodity will be saleable, are of the greatest importance. This aspect of the matter cannot be adequately dealt with by the concept of the “long-period elasticity of demand” though the distinction between long and short-run elasticities is a step in the right direction.³

(b) Most firms produce a number of products some of which are sold in more perfect markets than others—there are the “bread-and-butter lines” where the firm has to meet close competition and the specialities which are sufficiently different from their nearest substitutes to make demand for them relatively inelastic. In such cases it is often seen that the specialities carry higher gross margins than the more competitive lines. This may be represented as “recovering overheads” where they can be

¹ See R. L. Hall and C. J. Hitch, “Price Theory and Business Behaviour,” *Oxford Economic Papers*, May 1939.

² The “full-cost theory” seems to imply that this is how entrepreneurs behave, but whenever “full cost” is formulated in a precise form it turns out to mean something else.

³ Cf. E. A. G. Robinson, “The Pricing of Manufactured Products,” *Economic Journal*, December 1950, p. 779, and “The Pricing of Manufactured Products and the Case Against Imperfect Competition,” *Economic Journal*, June 1951, p. 432.

got, but it comes to the same thing as working on the principle of "charging what the traffic will bear."¹

(c) The entrepreneur has to reconsider prices when costs alter. How do industries react to changes in prime cost, due to changes in wage-rates or material costs that affect the whole group of firms? On this question the kind of analysis set out in the *Economics of Imperfect Competition* throws very little light, for here the effect of oligopoly is dominant. The reaction of any one entrepreneur must depend very much upon how he expects others to behave. From one point of view it is dangerous to be the first to raise prices when costs have risen, or the last to cut when they have fallen. On the other hand, to be the last, or the first, means an unnecessary loss of profit. It is in this sort of situation that price leadership develops. The rank and file of firms "wait and see" until a recognised leader reacts to the new situation. Perhaps price leadership should be regarded as a kind of convenient institution, like the monarchy in a feudal society. For when each firm knows that all will follow the leader's signal they are saved from a perplexing choice between raising prices (when cost has risen), debasing quality or submitting to a loss of profit, so that all have an interest in preserving a tradition of "loyalty" to the price leader. Price leadership may be expected often to operate (from the consumer's point of view) on the system: heads I win and tails you lose. A price leader who is confident of the "good discipline" of his followers will be inclined to raise prices when costs go up and hold them up when costs go down. But this cannot be an invariable rule. For instance, if the price leader is a strong firm anxious to expand, it may refrain from raising prices when costs go up, in the hope of bankrupting weaker rivals and taking over their share in the markets concerned. Buyers who are aware of a fall in costs may press successfully for a reduction in price. "Discipline" may break down if the margins maintained by the leader are so high as to tempt some followers to try to increase their share in the market. Or when there is a "disputed succession" between several strong firms, a fall in costs may set off a bout of violent competition that brings prices down even by more than costs have fallen.

(d) How does a firm react when it has succeeded in reducing costs by technical improvements? We can obtain some light on this question by observing what happens when there is a new invention of a low-cost substitute for an old commodity. In such a case it is open to the entrepreneur to price it at prime cost plus

¹ Cf. Clemens, *loc. cit.*

his usual gross margin, or to set its price in line with that of the old variety so that it carries an abnormally high margin. There have recently been one or two striking examples of the latter price policy, which have been exposed to public view by subsequent competition bringing the new commodity down to a small fraction of the original price. Presumably there are other cases which do not come to light because the low-cost commodity is sheltered from competition by a patent, secret technical knowledge or by heavy investment or economies of scale in a preparatory process which it shares with a number of other products of the same firm.¹

(e) How do entrepreneurs react to fluctuations in demand? In a seller's market, where demand, even at highly profitable prices, exceeds capacity output, it is often found that powerful firms prefer not to raise prices but rather to delay delivery, thus making an investment in goodwill for the future; whereas in highly competitive conditions, where markets are easy to enter and the number of sellers large, no one can expect to gain in the future by moderation in the present. Thus we find the apparently paradoxical phenomenon of the imperfection of competition keeping prices below the competitive level.

When a fall in demand has occurred and conditions of a buyer's market set in, prices are likely to be maintained by an oligopoly, for an entrepreneur who supplies a large proportion of a market is strongly influenced by the knowledge that if he cuts price others will follow and he will be no farther forward. In highly imperfect markets prices will tend to be sustained by the low elasticity of the shrunken demands for specialities. In fairly competitive markets margins may be held up by a feeling that it is wrong to be the first to cut. Here the famous "full-cost principle" may play an important part, not as an instrument of analysis for the economist, but as part of the data to be analysed. For if entrepreneurs have taught themselves to believe that prices are determined by costs, they will not cut prices when average total costs have been raised by a fall in output, though they excuse themselves from actually raising prices by saying that although it would be *right* to do so, it is unfortunately impossible in the circumstances. In a prolonged slump, margins are cut sooner or later, unless there is a price agreement, and it is usually said to be the high-cost producers who cut first, because

¹ This argument supports Mr. Harrod's view that the main determinant of an entrepreneur's pricing policy is not his own costs but what he believes to be the costs of actual or potential competitors. "The Theory of Imperfect Competition Revised," *Economic Essays*.

they are threatened with bankruptcy unless they can increase sales somehow or other.

It was in connection with slump conditions that the imperfect-market analysis was evolved (and Marshall himself introduced dislike of "spoiling the market," to account for the maintenance of profit margins after a fall in demand¹). It now appears much too simple, and oligopoly, price leadership and a feeling for "playing the rules of the game" have to be brought in to supplement it.

A study of questions such as these, framed in terms of the kind of decisions that entrepreneur's actually have to make, may throw light on the problem of price policy, but it seems clearly impossible to replace the old text-book slogans with any simple generalisations. A debate which consists in defending or attacking "principles," such as the "full-cost principle," "the marginal principle" or the "normal-cost principle,"² and trying to fit all types of situation into one system is obviously foredoomed to futility.

6. EQUILIBRIUM

In my opinion, the greatest weakness of the *Economics of Imperfect Competition* is one which it shares with the class of economic theory to which it belongs—the failure to deal with time. It is only in a metaphorical sense that price, rate of output, wage-rate or what not can move in the plane depicted in a price-quantity diagram. Any movement must take place through time, and the position at any moment of time depends upon what it has been in the past. The point is not merely that any adjustment takes a certain time to complete and that (as has always been admitted) events may occur meanwhile which alter the position, so that the equilibrium towards which the system is said to be *tending* itself moves before it can be reached. The point is that the very process of moving has an effect upon the destination of the movement, so that there is no such thing as a position of long-run equilibrium which exists independently of the course which the economy is following at a particular date.

The most obvious example is the manner in which an industry

¹ *Principles*, p. 375.

² Mr. Andrews' *Manufacturing Business* is full of dark sayings, but Miss Brunner ("Competition and the Theory of the Firm," *Economia Internazionale*, November 1952) makes the "normal-cost theory" intelligible. Though couched in the form of an attack on imperfect-competition analysis, it seems to come to pretty much the same thing, as far as the hampering assumption of one-product firms permits. The difference is rather in tone and emphasis than in analysis. My generation, brought up on the view that everything in the garden was lovely, concentrated attention on the weeds. A generation to whom our weed manuals were the orthodox text-books naturally react by pointing out that there are after all many splendid blooms to be seen.

reacts to large changes in demand for its output. When demand for the range of commodities concerned has risen in the recent past, so that it strains the capacity of plant in existence, or of a supply of skilled workers whom it takes a long time to train, current prices and the prospect of future profits are high, and new capacity is built up. In a text-book argument it is possible to imagine investment being made in continuous small steps, so that prospective profits fall gradually (demand remaining constant at the new level) and come to rest at the original level. But in reality, in an industry supplying markets which are competitive in the broad sense, investment plans are made by a large number of entrepreneurs at the same time, and are carried through while the high profits last, so that capacity is expanded in a long jump, and the rate of profit falls sharply when the new capacity comes into operation. Investment in plant once made persists for a long time (even if it bankrupts its first owners) and firms which have set up in one industry fight to survive where they are, even if the level of profit in other regions is now more attractive. At a date say five (or perhaps twenty) years later, whatever the conditions of demand may then be, the level of profit in that industry will be lower than it would have been if this expansion of demand had not occurred.

Similarly, the level of wages and the age composition of a labour force are very different when the present level of employment in an industry is appreciably less than it was five, or twenty, years ago than they would be, with the same present level, if employment in the past had been appreciably less. The irreversibility of the supply curve, which Marshall introduced in connection with economies of scale,¹ has to be extended to all kinds of long-run supply curves, and when it is, the very notion of a long-run supply curve, in its usual simple two-dimensional form, ceases to be admissible.

This kind of difficulty underlies all problems connected with prices, profits and wages, and there seems to be little point in adding more and more subtleties to the superstructure of a theory which is based upon such shaky foundations.

7. THE CAUSES OF MONOPOLY

An interesting and important question which has received very little analytical treatment (though there is a good deal of historical information about it) is the causes of monopoly.²

¹ *Principles*, Appendix H.

² An extremely interesting attempt on this problem has been made by L. J. Zimmerman, *The Propensity to Monopolize*, North Holland Publishing Co., Amsterdam.

The chief cause of monopoly (in a broad sense) is obviously competition. Firms are constantly striving to expand, and some must be more successful than others. It is easier to defend a position once gained than to conquer it, so that the most successful firms grow the most rapidly. There is no doubt much truth in Marshall's theory of the tendency (under a regime of nepotism) for old firms to fall into weak hands. But this does not check the process of concentration in industry. On the contrary, it means that at any moment a firm in the prime of its vigour finds itself surrounded by a number of easy victims to swallow up. If in its turn it grows weak with age, it is a large mouthful for someone else. Why did not Marshall think of fish in a pond instead of trees in a forest? An industry which is strongly competitive must be in the course of tending towards a condition of oligopoly; competition can be permanent only when it is hampered by highly imperfect markets or softened by a spirit of live and let live among the entrepreneurs concerned.

At the same time it is true that monopoly (or powerful oligopolists) at one stage in an industrial structure fosters competition at other stages. Thus where wholesalers or retail chains dominate a market they foster polypoly among producers by making entry easy to the manufacturing stage of the industry.¹ An exceptional but instructive case is polypoly in the boot-and-shoe trade promoted by monopoly in the supply of machinery. Similarly, an oligopoly in manufacture fosters polypoly in retailing (tobacco is a familiar example).

The second main cause of monopoly is the occurrence of a severe decline in demand, or the failure of demand to continue to expand when an overshoot in investment has occurred in the manner referred to above. So long as a seller's market prevails, the limitation of capacity maintains profit margins, and polypoly is compatible with satisfactory profits even in a fairly perfect market. In a buyer's market when the imperfection of competition, the discipline of price followers or loyalty to the code of the full-cost principle are insufficient to maintain profit margins, firms are driven by the fear of extinction to reinforce them by price agreements, and though some agreements break down again or are eroded by outside competition when prosperity returns, many, once formed, persist permanently.

Such monopolies are produced, in the first place, by the fear of losses; others are due to exceptional hope of profit. Monopolies are relatively easy to form where the boundaries of an industry

¹ Kaldor, *loc. cit.*

coincide with the boundaries of markets, as in the case of minerals with particular properties, specialised machinery or commodities such as matches or sewing-cotton which allow a relatively restricted scope for product differentiation. The lure of such victims is all the greater when the demand for the commodities concerned is inelastic.¹ Where there is a natural limitation on supply (as with mineral deposits) or very great economies of scale, or highly specialised know-how (as in many machine-making trades) a monopoly once formed is in a very strong position to maintain itself. Where there is no such "natural" defence against outside competition, it may defend itself by establishing a hold over retailers, threatening patent actions, using "fighting brands" to break competitors by localised price competition, and other devices, though it often tolerates the existence of a fringe of competitors, who are useful as a screen provided that they do not threaten to grow too much (small firms in such a situation sometimes make the highest profit rates to be found anywhere).

It is much easier to think of causes for monopoly and examples of monopolies being formed, than it is to think of causes or examples of monopolies breaking down. There seems to be a general presumption, therefore, that every succeeding generation will contain more monopolies than the last.

This is the kind of question which comes into view with the breakdown of traditional theory, but I have the impression that in the twenty years since the Chamberlin-Robinson duopoly first set up in imperfectly monopolistic competition, a great deal of mental energy has been devoted to a theological discussion whether an existing state of imperfect (or impure) competition is (a) beneficial, (b) harmless, (c) a necessary evil or (d) an unnecessary evil, while an analysis (as opposed to historical studies) of the causes and consequences of the process of survival or decline of competition has hardly begun.

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¹ Cf. Zimmerman, *op. cit.*, p. 30.

FLUCTUATION IN INCOMES OF PRIMARY PRODUCERS: A COMMENT

I

THE problem of fluctuations in primary product markets is more complex than Professor Paish and Mr. Bauer imply in their recent review of commodity stabilisation schemes in British colonies.¹ They deal only with two types of scheme: the restriction schemes so common in the inter-war period and the statutory market schemes of post-war British colonial policy. Of the former they give the now generally accepted criticisms, but what is new is their review of colonial marketing schemes and their claim that these are also restrictive in character. If this were true, these Boards would be as bad, from the consumers' point of view, as were the producers' cartels of the 1930s. Professor Paish and Mr. Bauer unfortunately give no sufficient evidence in support of this contention, and it seems, on examination, to be a mis-interpretation of events. The present note gives a brief review of the evidence upon this and a number of their other debatable generalisations (in particular their views on stabilisation).

The pre-war and the post-war schemes for British colonial producers are really quite different from each other. The pre-war schemes attempted to alter *world* prices by joint monopolistic action among producing countries aimed at restricting supplies, while the post-war Marketing Boards are only local export monopolies, which take world prices as they come but buy for export at *domestic* prices, whose level is fixed by statute. At first sight it seems strange to link the two types of scheme, since the post-war Boards make no attempt to restrict supplies. It is argued, however, that their price policy has led to restriction. The statutory domestic prices which the Boards have paid in purchasing for export from their home producers have, in fact, been well below world levels in recent years, and in consequence the Boards have accumulated large money surpluses. It is this conservative producer price policy that Professor Paish and Mr. Bauer attack. They say:

"Thus government intervention tends to restrict output of primary products in periods both of low and of high

¹ "Fluctuations in Incomes of Primary Producers," P. Bauer and F. W. Paish, *ECONOMIC JOURNAL*, December 1952, p. 750.

prices, in the former *in order* to raise prices received by producers, and in the latter *as a result* of keeping them down" (*loc. cit.*, p. 751).

The term "restriction" is, of course, ambiguous, and may mean either that output has been reduced, or that it has not been as high as it could have been. Yet, if we examine the evidence upon output, neither claim seems capable of substantiation.

Table I gives the quantities purchased for each of the main West African exports during the years since 1936. The corresponding producers' prices are given in Table IV.

TABLE I
Export Purchases of Major Economic Crops
(1,000 tons)

	Gold Coast.	Nigeria.			
	Cocoa.	Cocoa.	Decorticated groundnuts.	Palm oil.	Palm kernels.
1936	311	80	218	168	386
1937	236	103	326	145	337
1938	261	97	180	110	312
1939/40	242	114	169	132	300
1940/41	237	101	247	127 ¹	236 ¹
1941/42	251	99	194	151 ¹	378 ¹
1942/43	207	111	143	135	342
1943/44	196	71	194	125	340
1944/45	229	86	228	105	304
1945/46	209	103	300	103	342
1946/47	192	109	323	112	327
1947/48	206	74	330	136	356
1948/49	275	109	324	160	374
1949/50	253	99	188	159	381
1950/51	255	110	143	143	330
1951/52	211	107	418	175	400

¹ Because of shipping difficulties in 1941 the Nigerian Government prohibited the purchase of oilseeds for export. When purchasing was permitted again in 1942 there was a consequent increase in the volume handled.

It is far from obvious that a notable fall in output has occurred in recent years. Can it be that Professor Paish and his collaborator have been deceived by focusing attention only on one crop: Gold Coast cocoa? Output has indeed fallen in this case, but prices cannot have been the only cause: for in Nigeria cocoa output has remained stable, harvest variation apart. As the price policy of the Nigerian Cocoa Board in recent years has been similar to that of the Gold Coast one, comparison is enlightening.

It is, in any case, difficult to say very much about the factors affecting output by comparing one year with the next, without considering the possibility that special circumstances may have

operated. Professor Paish and Mr. Bauer, for example, appear to have neglected the heavy incidence of swollen-shoot disease in the Gold Coast cocoa belt. Climatic factors have an important influence, too, even in tree crops such as cocoa and palm products, and they are even more important in the case of annual crops, such as groundnuts and cotton. In the case of groundnuts rainfall is the critical factor, as the First Annual Report of the Nigerian Groundnut Marketing Board emphasises:

"The size of the groundnut crop is largely determined by the incidence, spread and timing of the rains in the growing areas. This is not surprising when it is realised that these areas are semi-arid in character."¹

This difficulty of making year-to-year comparisons can be partially overcome by comparing for different periods the averages of a number of years taken together. Such a comparison has been made in Tables II and III, in which the length of time

TABLE II
*Export Purchases of Cocoa * : Gold Coast and Nigeria*
(1,000 tons)

	1934-38.	1940/41-1944/45.	1947/48-1951/52.
Gold Coast . . .	266	224	240
Nigeria . . .	89	94	100

* Calendar years before the war. Crop years since 1939.

TABLE III
*Export Purchases of Oil and Oilseeds * : Nigeria*
(1,000 tons)

	1935-38.	1943-46.†	1949-52.
Palm oil . . .	141	117	159
Palm kernels . .	335	332	371
Groundnuts . . .	287	216	268

* Calendar years throughout except for groundnuts for which the figures relate to crop years after 1939.

† The years 1943-46 have been selected for reference rather than earlier periods because war-time factors affected sales irrelevantly in 1941 and 1942 (see footnote to Table I).

covered by the average has been chosen according to the number of years available since the date of inception² of an independent Marketing Board proper, as distinct from a war-time control board.

¹ Report of the Nigerian Groundnut Marketing Board, 1949/50, p. 18.

² The Cocoa Marketing Boards were first set up in 1947, the others listed in 1949.

We see that output has risen since the war years and that post-war output is higher than that before the war, except in the case of Gold Coast cocoa and Nigerian groundnuts. This is also true of the other Marketing Board crops not included here. This evidence contradicts the view that the effect of the low producer prices paid by the Boards has been "to reduce both output and consumption and thereby to reduce the world's standard of living."¹

On the other hand, if Professor Paish and Mr. Bauer wish us to accept the view that output in all these cases could have been higher still, if prices had been higher, it is surprising that they offer no evidence, nor even argument, in support of their thesis. For it is by no means self-evident. So many factors influence the size of these crops that it would need an extended examination of each case to assess the influence of price alone.²

II

Let us next consider the Paish-Bauer views on stabilisation. They say:

"It might have been thought that by generally keeping prices to producers far below sales proceeds and below prices ruling in world markets the Boards would have been able at least to increase their stability and to reduce the violence of their fluctuations. Unfortunately, it is not possible even to substantiate this claim" (*loc. cit.*, p. 760).

Table IV shows the prices paid to producers by the statutory marketing boards, first as Control Boards and then as Marketing Boards proper. It is true that the price paid for cocoa, both in the Gold Coast and Nigeria, was sharply reduced in the panic year of 1949/50, and then raised again in the year following. But this is the sole exception to an otherwise smooth upward movement of cocoa prices.

It seems that once again the writers have been misled by too great a concentration upon cocoa. For, cocoa prices since 1949 apart, it is hardly correct to describe these series as showing more violent fluctuations than the corresponding world price level.

When they came to fix the price for the 1949/50 season³ the

¹ *loc. cit.*, p. 765.

² In the case of Gold Coast cocoa, output since 1948 has been far higher than expected. Cf. Ady, "Trends in Cocoa Production," *Bulletin of the Oxford Institute of Statistics*, December 1949.

³ The price is decided in July of each year and announced on September 1 when buying begins. It operates for twelve months.

Cocoa Boards were not alone in expecting a world slump¹ nor in failing to foresee the outbreak of the Korean war and the consequent stockpiling boom in commodity prices. The Boards, which fix the producers' prices, consist chiefly of representatives of

TABLE IV
Producer Prices Paid by the Statutory Boards
(£ per ton)

	Gold Coast.	Nigeria.			
	Cocoa.*	Cocoa.*	Decorticated ground-nuts.*	Palm oil.†	Palm kernels.‡
1939/40	15.8	17.0	6.6	6.7	5.25
1940/41	13.0	14.0	5.4	5.9	4.6
1941/42	14.9	15.0	5.4	6.9	6.125
1942/43	13.0	13.0	6.5	9.4	8.125
1943/44	13.0	13.0	9.0	11.5	9.125
1944/45	22.4	23.0	12.0	11.5	9.125
1945/46	27.0	27.5	12.0	17.0	11.125
1946/47	51.3	50.0	16.0	25.5	16.75
1947/48	74.7	62.5	16.0	32.25	21.0
1948/49	121.3	120.0	19.2	42.75	21.0
1949/50	80.0	100.0	21.2	42.75	26.0
1950/51	130.0	120.0	(20.0) ‡	55.0	32.0
1951/52	150.0	170.0	36.0	61.0	36.0

indicates inception of Marketing Board proper.

* Crop year.

† Calendar year.

‡ £20 was the price announced by the Nigerian Groundnut Board at the beginning of the planting season. Just before the harvest was lifted the price was raised to £21 4s.

farmers and of the Government. The farmers' representatives naturally press for the highest possible producer's price consistent with world trends, while the Government, with the promise of price stabilisation to honour, have in this period of soaring world prices, wished to keep producer prices from rising too fast. In view of this pull of opposed interests, and of the difficulties of price-fixing in recent years, the see-saw of cocoa prices is not surprising. To anyone familiar with the West African scene the somewhat complicated motivations, suggested by the writers as an explanation of price policy, seem unnecessary.

The Cocoa Control Boards became independently constituted producers' Marketing Boards in 1947, and it is only since that date

¹ This, and not colonial exploitation as Professor Paish and Mr. Bauer imply, was the reason for the unfavourable bulk contract for groundnuts agreed in 1949 with the Ministry of Food. This first bulk contract was agreed at a fixed price, which proved much below world levels in 1950 and 1951, but after pressure by the Board an upward revision of price was secured in 1951. The bulk contract signed in 1952 has no price clause, payments being made at world levels.

that the farmers' pressure groups have exercised much influence. Constitutional changes in the Governments of the Gold Coast and Nigeria have also made the producer price an important political consideration since 1949. The proposal to establish a formula upon which to fix the producer price has naturally, therefore, been canvassed for some time as a means of removing price decisions from day-to-day politics. A formula such as a moving average of prices in previous years would offer that advantage; at the same time it would reduce fluctuations in the price received by producers and yet ensure contact with underlying price trends in world markets.

Professor Paish and Mr. Bauer regard their formula as superior to the simple moving average of prices that is so often proposed, because they attach importance to income- as opposed to mere price-stabilisation. This is a debatable emphasis, and raises issues which we shall consider in Section III. Let us first examine the Paish-Bauer formula from the viewpoint of the aim its authors themselves set.

The actual formula proposed can be written in the following way:

$$S_t = \frac{\bar{P}_t}{x} + \frac{\frac{1}{n} \sum_{r=t-n}^{t-1} Q_r \left(P_r - \frac{\bar{P}_r}{x} \right)}{\bar{Q}_t}$$

where S_t is the producer price to be derived, while P_t and $\bar{P}_t$ are the actual and expected world prices for any year t . Q_t and $\bar{Q}_t$ are the actual and expected tonnages purchased. x and n are weights.

We can see from this formula that it consists of two quite separate elements: the first is $\frac{\bar{P}_t}{x}$ or a fraction $\left(\frac{1}{x}\right)$ of the average world price *forecast* for the forthcoming year; the second is a correction factor. The latter is quite simply that fraction $\left(\frac{1}{n}\right)$ of the sum of the differences between actual proceeds (PQ) from the sale of the crop and the sum already paid out under the *expected* proceeds element $\left(\frac{\bar{P}}{x} \cdot Q\right)$ of the formula in the n preceding years. To get the required addition to the price per unit this sum is divided by $\bar{Q}_t$, the tonnage *expected* in the year to come.

Thus we can write the formula more simply as

$$S_t = f \left(\bar{P}_t, \frac{C}{\bar{Q}_t} \right)$$

where S_t , $\bar{P}_t$ and $\bar{Q}_t$ as before are the producer price, the *expected* world price and the *expected* tonnage for the coming year. C is the correction factor. It is difficult to accept the view that this proposal gives a "moving average of net proceeds as calculated by a clearly defined formula." The formula itself is clearly defined, but it contains two unknowns. For both the numerator of the first element of the formula, $\bar{P}_t$, and the denominator of the second element, $\bar{Q}_t$, are predictions for the making of which the formula itself gives no guide.

Faced with such a formula, the Boards might well ask what is to be gained, since even this method of deriving the producer price still depends so much on guesswork. The Gold Coast Cocoa Board might quote from its own First Annual Report¹ the following illustration of the difficulties of making any prediction of the average world price to come:

"Main crop sales opened in October at £234 a ton and in June had dropped to £167 f.o.b. . . . Light crop sales opened at £148 a ton and ultimately rose to £217 f.o.b."

For estimates of quantity it might appear that the ground is somewhat firmer. As a "best estimate" the Boards might use the quantity purchased in the previous year, yet this may be considerably off the mark on occasion; for example, in Gold Coast cocoa for the year 1948/49 the tonnage actually purchased would have been nearly 40% more than the "best estimate." The difficulties of estimating the probable volume of the annual crops is even greater, since this estimate must be made before planting begins. Even after planting, crop forecasts can go seriously wrong owing to a change in weather. This happened in 1949/50 in the case of Nigerian groundnuts, as Miss Hill has pointed out.²

Despite these difficulties, the proposers of the formula still recommended its use on the grounds that it has a "built-in" correction factor to compensate for such errors. They claim that "any temporary divergence from the trend will be corrected by a smooth change over the next year or two and not by means of large and discontinuous changes as under the so-called stabilisation measures" (*loc. cit.* p. 777). Thus, for example, if the price prediction proves to have been an over-estimate, the deficit which the Board incurs in that year will be wiped out in succeeding years by the correction factor. Or, if the quantity to be cropped has been over-estimated, this will mean that the price in that year will be lower than it would otherwise have been, owing to the effect of the second

¹ Report of Gold Coast Cocoa Board 1947/48, p. 4.

² ECONOMIC JOURNAL, June 1953, p. 468.

part of the formula. But this mistake, too, will be corrected by the redistribution of accruals in successive years. The formula is in fact most useful in ensuring that the Boards do not accumulate surpluses through a repeated conservatism with regard to producer prices.

Yet the authors themselves admit that "with sufficiently erroneous (price) estimates, it would of course be possible to arrive at prices which increase the instability of producers incomes instead of reducing it." Moreover, they draw attention to the fact that the formula is not fully self-adjusting with respect to errors in quantity. They think that this source of error "is likely to be of little importance," but it is not easy to feel convinced by this reassurance, if the criterion of success is to be the smoothing of producers' incomes.

For this uncertainty Professor Paish and Mr. Bauer have partly themselves to blame. For they do not discuss, neither do they illustrate in their examples, cases where both prices and output forecasts must be made simultaneously. Nor do they consider the outcome of their formula if the price and output forecasts for the coming year turn out to be wrong. In the numerical example they give it is relevant to remember that they have "assumed that the estimates of prices and output used in applying the formula turn out to be correct."¹ Had the formula been tried *ex ante facto* instead, would its results have compared so favourably with the more rule-of-thumb methods actually used? If we put ourselves in the position of the Gold Coast Cocoa Board, meeting to consider what price to fix on September 1, this price to operate for the year following its publication, what assumptions might we make in selecting the forecasts necessary for the application of the Paish-Bauer formula? Suppose, for example, we begin by assuming that the average world price and the output of Gold Coast cocoa for the year to come would be the same as those for the current year. The results obtained by using this not unreasonable starting point² for our calculations are given in

¹ See footnote to their Table IV, p. 774, *loc. cit.*

² Professor Paish and Mr. Bauer themselves have tried this basis for the calculation of producer prices on their formula (see footnote to their Table IV, p. 774, *loc. cit.*) but have dismissed it as being most unfavourable. Yet it is difficult to see what other starting point might be used in practice, when price and quantity changes are so far from systematic. For example, in making estimates of the average world price level for the year ahead, the weekly series of more recent months are little help. As Professor Kendall points out "the random changes from one term to the next are so large as to swamp any systematic effect that may be present" (M. G. Kendall, *J.R.S.S.*, 1953, Part I, Vol. cxvi).

Table V (Cols. 5 and 8), together with those obtained by the earlier Paish-Bauer calculations (Cols. 4 and 7) and with the Board's own payments (Cols. 3 and 6) for reference.

TABLE V
Gold Coast Cocoa

Year.	Output (1,000 tons).	Producer prices per ton. (£)			Producer aggregate incomes. £ (m.)		
		Paid.	Payable on the formula.		Paid.	Payable on the formula.	
			I.	II.		I.	II.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1946/47	192	51.3	65.6	32.4	9.8	12.6	6.2
1947/48	206	74.7	122.2	92.0	15.4	25.2	18.9
1948/49	275	121.3	100.1	175.5	33.3	27.5	48.3
1949/50	253	84.0	138.1	123.7	21.2	34.9	31.3
1950/51	247 ¹	130.0	190.9	156.3	32.0	47.1	38.6

Basis of Prices Payable on the Formula

Column I. Paish-Bauer assumption that the price and output forecast turn out to be correct.

Column II. The assumption stated above, that price and output forecast be the same as in the current year.

¹ Purchases in 1950/51 actually were 255 thousand tons, but 247 thousand was the estimate used by Paish and Bauer in their calculation, so I have used the same figure in mine.

In this second calculation with the Paish-Bauer formula the results look very different. Indeed, despite the operation of the correction factor, the formula gives even greater income fluctuations than the Board's own efforts, so severely criticised in the earlier article. It gives also considerable price fluctuations.

It might be thought that, if the Boards were to use the Paish-Bauer formula, they would be able to predict the forthcoming price and output more accurately than by simply taking the value of the year just closed, as we have done above by way of illustration. If they are able even to predict correctly the *direction* of change in price and in output, the formula should work a little better than in our calculations. Yet the experience of recent years shows that the Boards can guess wrong both about prices and the size of the harvest. They have even been wrong about the direction of changes. In such circumstances the Paish-Bauer formula can do nothing to ensure income stability, despite the working of the correction factor. For, a smoothing of incomes as successful as that demonstrated in the Paish-Bauer example, does depend on getting not only the *direction* of change

right in the forecasts but also its *magnitude*. If, on the other hand, predictions tend to be wrong not only in magnitude, which is highly probable, but also in direction, the use of the formula in any mechanical way may well lead to instability of incomes rather than the reverse.¹

III

More fundamentally one may question whether the proper aim of stabilisation measures can be described solely as that of stabilising income rather than price. This is the Paish-Bauer view and they impute it to others when they say

“Although this is rarely stated explicitly the aim of advocates of stabilisation measures is clearly the removal of random fluctuations about the trend of incomes” (*loc. cit.*, p. 766).

Up to a point this is, of course, a false antithesis, since incomes would fluctuate less if prices were stabilised. The crucial distinction between different kinds of stabilisation measures is not this so much as the issue of internal or domestic as compared with external or foreign income and price stabilisation. Whereas stability of incomes may be the desideratum in foreign transactions, in the domestic economy the case for a stable *price* is far the stronger. International agreements like that for wheat affect the world price and foreign income and expenditure of producing and consuming countries, but this is not true of the colonial commodity schemes. The latter schemes are designed only to provide *internally* “a reasonably stable price basis not necessarily fixed for a number of years but so arranged as to avoid short-term fluctuations.”²

The drawback of pre-war primary product markets was that world prices fluctuated widely not only from year to year but also from day to day.³ The effects of this instability were felt particularly severely in peasant economies, since these fluctuations were fully reflected in the prices received by producers. It appears to have been the main cause of peasant indebtedness and consequent alienation of his land. The marketing of crops by the

¹ Where the direction of change is wrong both for $\bar{P}$ and $\bar{Q}$, the results will certainly be bad. Where either $\bar{P}$ or $\bar{Q}$ are incorrectly estimated the degree of instability imparted to income will depend on the magnitudes of the errors and the weights (x and n) that have been selected.

² Cmd. 6950 of 1946.

³ For a fuller account of conditions in cocoa marketing before the war see the Nowell Report, i.e., Report of the Commissioners on the Marketing of West African Cocoa, Cmd. 5845, 1939.

peasant was full of risk and uncertainty, and his attention was in consequence as much given to speculation as to farming. It is this feature of pre-war markets that statutory boards have eradicated.

The producer price of Marketing Board crops is now fixed f.o.b. for a year at a time and its level widely published. Its value at the main buying stations, with a flat-rate deduction for transport costs, is also published. Finally, shippers' and brokers' margins are fixed by law. Consequently the farmer now knows precisely how much he should get for each load (60 lb.) of his crop, and he knows that this domestic price will be operative for the year whatever the level of the world price. This state of knowledge is a great contrast with that obtaining before the war, when the farmer never knew the level of the price from one day to the next and, worse still, his sole source of information about its level was the broker. The short-period speculative element in crop marketing has been completely eradicated, and the farmer now has a reasoned basis for his farming and cropping policy.

A recent review¹ of the problems suggests that violent price fluctuations have in the past "inhibited production" so that the case for domestic price-stabilisation can be made with the consumer's interests in view no less than those of the peasant farmer. From the consumers' point of view again, measures intended above all else to guarantee stable incomes to peasant producers might have disastrous consequences if they lead to a decline in output consequent upon the assurance of a corresponding rise in price.² Such backward-rising supply reactions are often regarded as characteristic of peasants. If there is any truth in this view the guarantee of income stabilisation may well induce a restriction of output in response.

IV

It remains to consider some of the other Paish-Bauer criticisms of colonial Marketing Boards, especially the lack of purpose allegedly demonstrated by the steady accumulation of surpluses. Accumulation has been unavoidable for some years past. With a strongly rising upward trend such as we have seen since 1946, the most optimistic formula for producer prices, even the Paish-

Bauer formula itself, for example, inevitably lags behind actual world prices and leads to surpluses, until the trend of prices turns downwards. Given that surpluses have been inevitable, are they perhaps too large? This depends upon one's assessment of the price stabilisation commitment. If this period is followed by a slump, the Boards' reserves will be needed not so much in order to maintain the internal price (for this is a domestic transaction and could be financed by borrowing or taxation) but in order to pay in sterling for imports for which the demand will be constant or even rising while receipts from exports fall. The Boards' reserves are also being used for the long-run improvement of the respective industries in other ways: the financing of the swollen-shoot campaign for cocoa, for example. Part of the surplus of each Board is being used for research into methods of cultivation of the crop concerned. Surely such policies, of building up financial reserves and the ploughing back of profits, are more to be commended than an immediate distribution of dividends? This is a choice not often made in farming enterprises and least of all in peasant communities, where, as Professor Paish and Mr. Bauer themselves agree, "small producers are unlikely to have the 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" (*loc. cit.*, p. 766).

To stigmatise the Boards' surpluses as taxation smacks a little of an attempt "to give a dog a bad name," though it may arise from a misapprehension about the effect of the Boards' price policies upon producers' real incomes. There is no official index of the terms of trade for these territories, but fortunately this question has been investigated elsewhere. Table VI gives the terms of trade, calculated separately for the main export crops from the Gold Coast and Nigeria since November 1947.

This series gives the producer terms of trade, that is the producer price of the various exports deflated by a wholesale price or landed-cost index of the chief imported consumer goods. It does not, of course, measure the retail prices which the producer had to pay for the same bundle of goods. These prices were clearly much higher in the years in question. The gap was particularly wide in 1948 and 1949, when the huge jump in the producer price of cocoa came as a surprise to the importing agencies, whose stocks were therefore quite insufficient to meet the enormous increase in demand. It was, no doubt, the internal rise in retail prices to which Professor Paish and his collaborator referred when

¹ *Economic Bulletin for Europe* (1st Quarter 1951), Vol. III, No. 1.

² Although backward-rising supply curves are thought to be the typical reaction of peasants to a rise in price, it is questionable whether this response has ever yet in fact occurred. The guarantee of a fixed income may, however, soon produce it.

they said that "the terms of trade of primary producers have therefore been depressed, not only relatively . . . but often absolutely" (*loc. cit.*, p. 759). However, as we have seen, even the Paish-Bauer formula, had it been calculated before the event

TABLE VI
*Index of Producers Terms of Trade for Chief West African
Export Crops*¹
(August 1948 = 100)

Year.	Gold Coast.	Nigeria.			
	Cocoa.	Cocoa.	Ground-nuts.	Palm oil.	Palm kernels.
1947	92	99	102	75	79
1948	113	121	104	96	94
1949	143	179	118	126	121
1950	115	163	126	122	120
1951	138	161	112	130	116
1951 (first 3 quarters only)	155	210	172	139	132

¹ Source: U.A.C. *Statistical Economic Review* No. 10, September 1952. For details of the construction of this index see also No. 8, September 1951.

instead of after it, might easily have led to an exactly similar outcome. It, too, might have given a vast increase in incomes in that year, owing to the quite unexpected increase in the tonnage of the crop. No automatic formula can be devised to overcome this kind of difficulty, and it must be recognised that the decision about the producer price is partly dependent upon fiscal policy.

However the producer price is determined, whether it is fixed by fiat or by formula, or whether it is left to world economic forces to determine, the relationship of this price to the others in the same community will affect the distribution of economic resources. In the cocoa boom of 1948/49 everyone became a "cocoa farmer," combing the High Forest belt for cocoa-stands, indeed for every cocoa-tree. Whether this Gold Rush atmosphere produced a desirable distribution of labour resources is an open question, but it cannot have done much harm at the level of economic activity prevailing at that time. In later years, if Development expenditure and specific development projects, like the Volta River scheme, grow to full scale, the domestic price policy of the Marketing Boards will become more crucial to general economic stability. It will not then be possible to leave the decision about the producer price to an automatic formula.

Nevertheless, in fixing the producer price each year the Boards would find a useful guide in moving average formulæ of various kinds, the Paish-Bauer formula amongst them. They can be no more than a guide, however, because their results may often require modification in relation to the general economic situation and the particular character of the crop. It does not seem possible to devise a simple prescription for price fixing, even for each crop separately, and still less a general formula for them all.

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INCOME GROWTH IN SECULAR STAGNATION AND INFLATION¹

IN connection with his analysis establishing the requirements for steady (real) income growth, Mr. Harrod has very briefly touched upon the behaviour of the aggregate economy during periods of chronic underemployment and those of secular inflation.² At one point in his discussion he has suggested, or rather hinted, without developing the idea, that the parameters of his model might be affected by changes in the (long-run) level of income.³ Indeed, it would seem most reasonable and fruitful to assume that the saving and investment coefficients, which form the core of Mr. Harrod's analysis, are functions of the long-run level of employment and income. Thus "warranted" growth may be shown to vary not only cyclically, a point emphasized by Mr. Harrod, but also to vary with the secular employment of resources. Moreover, there are strong grounds for believing that, contrary to the assumption implicitly made by Harrod, as well as many other economists, the full-employment growth ceiling is not invariable with respect to the employment of labor and capital.

The present paper is designed to show that inherent in the secular conditions of both stagnation and inflation are forces which alter the values of the determinants of these two growth rates, and in such a way as to tend to make these conditions self-limiting.⁴

¹ This paper has benefited from the criticism of Professor Dudley Dillard of the University of Maryland and, at an earlier stage, from that of Professor Sidney Weintraub of the University of Pennsylvania.

² Cf. R. F. Harrod, "An Essay in Dynamic Theory," *Economic Journal* (March 1939), 30-2, and *idem*, *Towards a Dynamic Economics* (London, 1949), pp. 87-8.

³ Cf. "An Essay in Dynamic Theory," p. 30. The ensuing discussion is to be construed as an effort to extend one phase of Mr. Harrod's path-breaking work by following up the suggestion in the cited passages.

⁴ More recently, Professor R. Eisner, following the lead of Professor Domar, has also endeavored to explore the behavior of income growth in the course of periods of chronic underemployment. Cf. Eisner, "Underemployment Equilibrium Rates of Growth," *American Economic Review* (March 1952), and E. D. Domar, "Capital Expansion, Rate of Growth and Employment," *Econometrica* (April 1946), particularly pp. 142-3. Eisner's paper and the relevant portions of Domar's explicitly assume that the full-capacity values of the saving and investment coefficients in their models will remain unchanged during periods of chronic unemployment. Hence the remarks in the present paper dealing with the latter condition are meant to apply to their analyses, also. In addition, see the writer's comments on Professor Eisner's paper in the *American Economic Review* (June 1953).

I. FRAMEWORK OF ANALYSIS

To provide a convenient framework for the ensuing analysis, it is well to introduce a *coefficient of required growth*.¹ Thus $\eta = E/U$, where E stands for the rate of income growth required for the full employment of a growing supply of labor. In effect, E is the full-employment growth ceiling, that is, the maximum rate of income growth allowed by growth in the labor force and by technological improvement.²

U is the income growth required for the full-capacity utilisation of a growing capital stock. This growth rate is itself a ratio, basically the same as the Harrod warranted growth rate, G_w . As such, it is equal to the ratio, α/λ ; α denotes the (long-run) average propensity to save, S/Y , while λ represents the accelerator, written without lags as $\Delta K/\Delta Y$, ΔK being the change in capital stock or (algebraic) net investment. Without elaborating, U (or G_w minus the expectational qualities endowed it by Harrod) might be described as the rate of growth of income and investment required to absorb into production the saving and capital formation indicated by αY . Hence the appellation for U of full-capacity growth rate.³

Mr. Harrod has noted that the case of a country prone to stagnation is represented by a value of the coefficient $\eta < 1$.⁴ Growth in real income will be kept by the growth ceiling from being sufficient to absorb into production the additions to the economy's capital stock. As the growth ceiling is approached, labor shortages and other bottlenecks will make an appearance. New plants will have difficulty in getting sufficient labor; those that do will, in large measure, have to draw this and other factors from older ones. In either event excess capacity will develop; stocks will accumulate involuntarily. Losses will ensue, dis-

¹ See my article, "Full Capacity vs. Full Employment Growth," *Quarterly Journal of Economics* (August 1952), where the implications of this coefficient are amplified.

² Readers will recognise that E is essentially the same as Harrod's "natural" growth rate, G_n . The term "natural" appears to be an unfortunate choice of terms, however, for it appears to imply, unintentionally, that this growth rate will automatically be realised through the play of forces in a free economy. Calling it the full-employment growth rate (or ceiling) has the advantage of emphasising that this is the rate of income growth needed to ensure the employment of a growing labor supply, as opposed to a growing capital stock.

³ For further details, see Harrod, "Essay in Dynamic Theory," pp. 16-18 and *Towards a Dynamic Economics*, pp. 77-85. Once more, we have selected the term "full-capacity" growth in preference to Harrod's "warranted" growth because the former seems to be more descriptive.

⁴ See also Domar, "Expansion and Employment," *American Economic Review* (March 1947), pp. 44-5.

appointments abound. There is more or less a steady damping influence on the rate (of growth) of investment and income.

Cyclical fluctuations would continue, but of necessity they would predominantly be downward in direction. Depressions would be deep and prolonged, while upswings would be brief and severely lacking in vigor. Over the years an economy in such circumstances would find itself in a state of chronic underemployment.

Conversely, when $\eta > 1$, the economy will find itself in a state of secular exhilaration. In this case the actual growth in real income will tend to lie above the full-capacity rate of growth most of the time. Although business cycles will occur, they will have a predominantly upward bias; upswings will be vigorous, downswings brief and well-contained. Over the long haul, total capacity will be used intensively. The utilisation of new capital will not be obstructed nor have to take place at the expense of old capital because of labor shortages. This is guaranteed by the fact that the growth in the labor force and technology exceed the rate of capital accumulation.¹ This situation, of course, has been largely characteristic of countries in the initial stages of industrialisation.

In discussing the situations of chronic underemployment and secular inflation, it is necessary to avoid assuming, as some writers have, that the full-capacity growth rate, U , will have the same secular values when $\eta \neq 1$ that it would in the case of $\eta = 1$. At best this is a dubious assumption. Yet it is very important to know, for example, what the behaviour of U is in inflationary circumstances, for it is clear that the degree of inflation (as well as the extent of the secular growth in unemployment mentioned in the footnote on this page) is influenced by the magnitude of the excess of E over U . Similarly, it is important to have some idea of the behavior of U in periods of stagnation, for the degree of resource under-utilisation is considerably influenced by the extent to which η is less than unity. Since full-capacity growth depends upon the values of the saving and investment coefficients, it is evident that a major part of the solution to the problem under discussion devolves upon an analysis of the behavior of these coefficients under conditions of $\eta \neq 1$. A discussion of the nature and direction of change in these variables under such con-

¹ At the same time that there is inflation, however, there will tend to develop a body of secularly unemployed labor, a point overlooked by Mr. Harrod and many others. When $\eta > 1$, the situation is also signified that the growth of capital will be insufficient to absorb into production the growing labor supply. See the reference in footnote 2 on p. 609 for an extended discussion of this point.

ditions, in contrast with the case of $\eta = 1$, comprises the content of the next two sections.

FULL-CAPACITY GROWTH AND SECULAR STAGNATION

It seems clear that the "desired" acceleration coefficient will tend, in a period of prolonged stagnation, to fall below its full-employment values, as a result of the almost certain presence of idle plant and equipment. In general, the more idle capacity, the less investment will be induced by any given increase in income. The analysis of the damping effects on the accelerator of stagnation need not be limited to technological relationships indicated by marginal capital coefficients either. In so far as the marginal efficiency of capital is below its full-employment values, and in so far as profits, a principal source of investment capital, are also below their full-employment levels, increments in capital corresponding to (absolute) income growth will decline. The consequence of this fall in the investment coefficient is a tendency for the full-capacity growth rate to rise, because *ceteris paribus*, the more saving (and investment) remains to be absorbed by acceleration-induced investment inspired by the growth in income.

In addition, autonomous investment may also be expected to be carried on at a reduced rate. As a matter of fact, we may identify secular stagnation with a comparatively low rate of autonomous investment.¹ But this will tend to raise the volume

¹ Autonomous investment, as is well known by now, ordinarily refers to that category of total investment which is unrelated to income growth. Despite recent objections to this concept, an important amount of investment may legitimately be separated from income growth, and not merely government monuments. Such investment includes cost-reducing innovations and investment in new products which in the initial stages of growth are designed to compete away the *existing* markets of one or more substitutes. The introduction of revolutionary production techniques (in the broadest, or Schumpeterian, meaning of this term) or products designed for use in existing markets may be conceived as independent of income growth, past, present, or future as well, in the sense that their profitability is perfectly consistent with a *given* level of income. In a negative way, perhaps the distinguishing feature of autonomous investment is that it is not made simply to accommodate a larger output. This does not mean that such investment is autonomous of economic influences and not in need of detailed analysis. One of the principal criticisms of the current literature on income growth is the tendency to subsume autonomous investment in some sort of random term, without undertaking an analysis of its component parts and their determinants. Yet the distinction between autonomous and induced investment is an important and useful one. The presence or absence of autonomous investment provides, in the opinion of the present writer, the sole basis for distinguishing between and explaining the differences in major and minor business cycles. But this is not all.

Recently, it has been appropriately suggested that the *timing* of so-called

of savings left over to be absorbed by induced investment. Additional upward pressure on the full-capacity growth rate will result. Thus the behavior of total investment during stagnation appears to accentuate the tendencies toward chronic under-employment.

Our analysis of the effects of stagnation on full-capacity growth, however, would be incomplete were we to stop at the effects on investment. For there is even less reason to assume that the saving coefficient will remain unchanged during such periods.

α , too, may be expected to fall when $\eta < 1$. With the emergence of steady unemployment and excess capacity, with depressions abortive, profits on the average should be very low; certainly, they will tend to be much lower as a percentage of national income during such periods than they would be when $\eta = 1$. Corporations in general having a higher propensity to save than individuals, this redistribution of income away from profits will tend to lower the propensity to save from national income. In the face of a low marginal efficiency of capital, the volume of retained business earnings should also decline sharply, indicating a fall in corporate saving functions, with the same effects. Dividends and speculative incomes, too, will fall. The structure of interest rates will undoubtedly fall below its full-employment values, reducing not only incomes from this source, but also as Mr. Harrod has demonstrated, acting *directly* to reduce the propensity to save (from disposable income).¹ In general,

autonomous investment may often be affected by the phase of the business cycle. Even though such investment may meet the basic requirement of not being made merely to permit larger outputs, we would be guilty of overstating the case were we to deny all influence on expectations, long and short run, of prosperity and depression. As has been pointed out, to the extent that this is true, such investment is related to the income level, rather than the latter's growth. However, from the point of view of the problem of long-run income growth, the origins of stagnation may be ascribed to laggard autonomous investment behavior, *whether or not* the latter's timing is related to the income level. For the persistent failure of upswings in national income to reach full employment is due to the inadequacy of even "timing-induced" innovational investment. Given realistic values of the acceleration coefficient, the effect of this may be described as raising the full-capacity growth rate to values frequently improbable even without the limitations imposed by growth ceilings.

¹ The chief element of doubt about the behavior of saving with respect to changes in the rate of interest has arisen from the consideration of saving for specific objectives (pensions, education, etc.). Mr. Harrod has pointed out that, for example, the belief that a rise in interest will result in lower saving "arises from neglect of compound interest, the fact that with a high interest yield there is more accrued interest available to be resaved." (*Towards a Dynamic Economics*, pp. 51-2.) As a result, even though the necessary reduction in consumption is less,

entrepreneurial and *rentier* incomes may be expected to decline as a fraction of income. These tendencies, combined with probable government doles or work-relief projects, all point to a redistribution of income in favor of high (marginal) spending groups.

Furthermore, in so far as stagnation implies a low rate of growth of real income, lower at any rate than is the case under full-employment conditions, the saving coefficient may be expected to decline *ipso facto*. Different reasons may be adduced for relating the propensity to save in a positive way to the rate of income growth. It has been noted, for instance, that given a growing national income, the mere placement of savings in fixed-income assets acts to raise the saving function by reducing the amounts available for liquidation, expressed as a proportion of the growing income. However, it is also clear that given the amount of savings embodied in such assets, the slower income grows, the larger will be the proportion of income available for dissaving. The smaller will thus be the percentage of net income taking the form of positive saving.

Moreover, there is good reason to expect households and corporations as a whole to save a smaller fraction of income the slower is the growth in income. As indicated earlier, the propensity to save of corporations will tend to fall. A large portion of undistributed earnings is retained for the express purpose of financing capital expansion. With less need for expansion, *i.e.*, capital widening, following the slowdown in

the effects of compounding at a higher interest rate still cause total savings to be larger than they would otherwise be.

There is yet a more useful way of demonstrating that personal saving is a positive function of the rate of interest. Saving is essentially a demand for future income, and interest may best be considered as the price of future income in terms of present income. The conditions of a rising demand curve for future income are identical with those of any good: the good must be inferior, and individuals must devote a large part of their incomes to it. While future income may well be inferior to present income, it seems clear that the large body of individual savers saves a sufficiently small part of its incomes as to experience very little increase in the latter in consequence of the lower price it must pay (*i.e.*, higher interest it receives) for future income.

Harrod seems also to have injected the possibility that a fall in interest rates might bring about capital deepening, and hence a rise in corporate saving (*ibid.*, p. 48). However, elsewhere (*ibid.*, pp. 133-4) he seems to have accepted what is probably the general view at present, namely, that investment demand is inelastic with respect to changes in interest. It might be noted that the main emphasis of the argument adduced in the text of the present discussion is meant to be on the significance of interest as a factor in the *distribution* of national income.

income growth, there is a presumption in favor of less undistributed profits.¹

Similarly, there is good reason to expect the proportion of saving out of disposable income to fall when income rises more slowly in the course of stagnation. The "demonstration effects" of Professor Duesenberry, explaining the efforts of consumers to achieve higher living standards, have come to the fore as one of the chief explanations of the *apparent* constancy in the long-run ratio of savings to income.² But need this proportion be the same under all conditions? May not this quest for higher standards lead households to compensate for a fall in the growth of real incomes by saving a smaller proportion of higher incomes? Put differently, may not the slower growth of real income accentuate the inherent inferiority of that "commodity," future income (cf. footnote on p. 612) and lead to a fall in the saving ratio?

The statistical evidence on this matter, meager as it is, tends to bear out the contention that the saving coefficient tends to be smaller in the long run, the lower the percentage growth in real income, even when lower growth rates do not result in stagnation. The Kuznets data on long-run saving (corporate as well as individual) exhibit a secular decline as a fraction of income (a point overlooked by many writers), while at the same time, the decennial income figures also display a falling tendency in the relative rate of growth.³

Under the weight of the economic pressures associated with stagnation, it is not unreasonable to expect, too, that the rate of population growth may be reduced.⁴ *Ceteris paribus*, primarily, the rate of income growth, saving will tend to be a smaller fraction of income the lower is the rate of population growth. The reason

¹ Since we have, in effect, identified stagnation with a lack of autonomous investment, we have thus ruled out any compensatory absorption of savings in this type of investment.

² Cf. J. S. Duesenberry, *Income, Saving and the Theory of Consumer Behavior* (Cambridge, Mass., 1949), Chapter III.

³ Cf. S. Kuznets, *National Product since 1869* (New York, 1946), p. 119. Because these data are *ex post*, they cannot be taken as conclusive evidence of the hypothesis suggested in the text, the latter dealing obviously, with saving functions.

These data also cast some doubt on Mr. Harrod's fears that a rising *per capita* income will tend to raise the value of the saving coefficient through increased "hump" or goal saving as well as increased inheritance saving, both as a result of the greater ease in saving consequent upon the rise in *per capita* income. See *Towards a Dynamic Economics*, pp. 53-5.

⁴ We are aware, of course, that many writers on stagnation have traced its origin partly to the declining rate of population growth in the Western World. However, this hypothesis is not inconsistent with one which posits reciprocal effects between stagnation and population growth.

is, briefly, that the slower is population growth, the smaller is the proportion of young people with positive saving to offset the dis-saving of old, retired people.¹

For reasons well known by now, it may be averred that decreased population growth will also act to reduce investment outlets. This thesis, however, while containing an important element of truth, tends to overlook certain mitigating factors. One, a variation of a point made above, is that corporation saving designed to meet the needs of a growing population will also tend to fall as investment outlets originating in this factor decline. Secondly, a good deal of personal saving is done with the purpose of acquiring a specific asset. Included in this type of saving should be what is sometimes called "contractual" saving, or saving which takes the form of insurance payments and, particularly, instalment payments on consumer durables. Thus if investment falls in industries a large part of whose markets stems from population growth, some of this decline in investment opportunities may be offset by a decline in saving having the acquisition of these goods as its objective.² Further, in connection with the all-important demand for housing, there is some statistical evidence that at any given income level outlays on housing vary inversely with the size of the family (smaller families can afford more).

Thus far we have been content to survey the possibilities of change in the saving and investment coefficients originating in developments immanent in a condition of chronic underemployment. Moreover, our analysis indicates that both coefficients tend to fall in value. But the sagging accelerator serves to reinforce the stagnation conditions, while the declining tendencies of the saving coefficient are an alleviating element. What would be the net result of these diverse influences on fall-capacity growth (and therefore η and stagnation)? In the absence of accurate data we can do little but make some reasonable and very tentative guesses, with which the reader may or may not agree.

There is an inclination to believe that full-capacity required

¹ This effect may be offset somewhat by the reduced need of young parents to dissave as a result of fewer children.

² This statement is predicated on the supposition that "there is an absolute limit or an ideal level for accumulating assets." Cf. G. Katona, *Psychological Analysis of Economic Behavior* (New York, 1951), p. 106. Katona argues that this position (held probably by the bulk of economists, especially those who in one form or another have espoused the so-called "Pigou effect" of wage and price changes) is substantiated neither by psychological theory nor empirical investigation, acknowledging, at the same time, that "the reverse statement cannot be proved either."

a higher accelerator full-capacity growth is, of course, reduced, since more (real) saving will be absorbed in the investment induced by any given increase in income.

Just as we have identified stagnation largely with an insufficiency of autonomous investment, so we may associate secular inflation with an abundance of this type of investment.¹ In addition, as long as expectations are involved in investment decisions, it is difficult to dissociate completely current economic events from much of even autonomous investment. Though meant to invade existing markets, or intended simply to reduce costs of given outputs, autonomous investment outlays may be expected to be influenced by the high current rates of return that will mark secular exhilaration. This effect is important if its influence is felt only in the matter of timing of such investment outlays. In the same manner that we recognise the pace of replacement demand to vary directly with current and expected rates of return, even where such replacement embodies some technological advance, we may expect the pace of autonomous investment to speed up under the swell and impetus of high profits stemming from the intensive use of capital during periods of secular inflation.

To the extent that autonomous investment is higher during such periods than it is in either of the cases $\eta < 1$, full-capacity growth is reduced, because less saving (and investment) remains to be absorbed by acceleration-induced investment.

A rapid rate of income growth will also tend to raise the value of the saving coefficient, however. The very fact of inflationary rises in the price level makes a persuasive case for expecting a strongly skewed distribution of national income in favor of profits and of retained earnings to finance both autonomous and induced investment projects. Even in the presence of strong trade unions, wages tend to lag behind prices, making for expanded profit margins. This "redistribution effect" is nothing more than the familiar phenomenon of forced saving, which we associate with periods of inflationary trends.

The distribution of personal income should also reflect the inflationary trends as dividends and speculative incomes rise

¹ In a future paper, the writer hopes to be able to show that the values of the accelerator required to yield steady growth based primarily on induced investment far exceed all plausible figures. It appears necessary to posit certain (large) amounts of autonomous investment in order to obtain full-capacity growth. Hence we are inclined to the proposition that stagnation is due basically to the lack of autonomous investment, and not to too low an accelerator, and, similarly, that inflation may be attributed to high rates of autonomous investment rather than too high an acceleration coefficient.

under the same pressures. In the absence of a strong cheap money policy, the structure of interest rates should also reflect the pressures of high investment demand; this will add to the skewness in personal income distribution and, if our earlier arguments are correct, also increase directly the propensity to save from disposable income.

Turning around the earlier arguments relating the propensity to save to the rate of income growth, the saving coefficient may also be expected to be higher the higher is the latter variable. This effect exists apart from the redistribution effect. It arises from the aforementioned embodiment of savings in fixed-income assets as well as from the possible stimulating effects on population growth that high rates of income growth may exert. Further, with any given value of the accelerator, there will be more corporate saving, merely to finance the greater volume of induced investment resulting from the higher rate of income growth.

To some extent, the long-run household saving coefficient, too, may tend to be higher in the face of a higher rate of income growth, although it is admittedly debatable how far we may go in stating the converse of the earlier proposition that lower income growth may see a lower personal saving coefficient, because of "Veblen"—induced efforts to compensate for a fall in the growth of real income. Additional difficulties are created along these lines by the potential development of elastic consumer price expectations during a period of underlying inflationary trend. Any actions based on such expectations would, of course, tend to reduce the propensity to save.

At any rate, there are sufficient influences at work to leave little doubt that the propensity to save out of national income should tend to be higher when $\eta > 1$ than when $\eta = 1$. The Kuznets data referred to earlier lend some support to this conclusion. The result is upward pressure on the full-capacity growth rate, U .

As before, we have similar movements in the saving and investment coefficients, and therefore opposing influences at work on full-capacity growth. This time, however, we may speculate with considerably more confidence. There seems to be a rather clear-cut case for expecting the "saving effects" to dominate the "investment effects." This statement is founded on the belief that the outstanding feature of strong inflationary pressures is forced saving and high rates of capital formation, brought about primarily through a redistribution of income in favor of profits.

If true, this effect indicates that the case of secular inflation,

of $\eta > 1$, tends to be self-correcting,¹ for it contains within it the forces, viz., high rates of saving and capital formation, which will gradually reduce the disparity between full employment and full-capacity growth.² There is nothing startling in this conclusion. In simplified form this evolution of η toward unity from a figure greater than this depicts one of the central aspects of the economic development of a backward country toward an industrialised state. It is probably not an exaggeration to say that the evolution of η from a value greater to one of *less* than unity, primarily, though not exclusively, through the effects of capital formation on full-capacity growth, constitutes a description of the change from nineteenth-century to twentieth-century economics, at least in the West.³

THE FULL-EMPLOYMENT GROWTH CEILING

It may be objected, with some propriety, that we appear to have concentrated on full-capacity growth to the exclusion of the full-employment growth ceiling, and that it does not follow, either, that the latter is free of influence from the secular behavior of income growth. There is real merit in this objection. In so far as the growth ceiling is partly determined by growth in the labor force, it does not appear wholly legitimate to assume that the latter will be the same in periods of secular inflation as in full employment free of this element, or that labor-force growth will be the same during stagnation as during full-employment growth.⁴ In the case of stagnation, for instance, there is the strong possibility that population, and therefore labor force, growth will be slowed by conditions of chronic unemployment. But there is also the question of determining to what extent this effect on labor force growth will be offset by the appearance of auxiliary income earners trying to supplement the income of the head of the family. And what of the behavior of these two factors

¹ So long, obviously, as the situation does not degenerate into a state of galloping or hyper-inflation.

² Equally important, the raising of full-capacity growth under these circumstances will act to reduce the growth of secular unemployment. See footnote 1 on p. 609.

³ It is not clear that an evolution of η to a value less than unity is to be attributed solely to a rise in full-capacity growth alone. Declining rates of population and labor force growth and possibly slower rates of technological progress might act to reduce the full-employment growth ceiling also.

⁴ See, e.g., D. Kirk, "The Relation of Employment Levels to Births in Germany," *Millbank Memorial Fund Quarterly* (April 1942). The prolonged upswing in post-war births also has demographers doubting that merely another temporary post-war surge is occurring.

during periods of secular exhilaration? In both cases our answers must be uncertain, of course, because we are dealing with variables which are important functions of non-economic factors, and the demographers have yet to provide us with sufficient information to answer the questions posed satisfactorily.¹

Nor must we forget the other of the fundamental determinants of the growth ceiling, the rate of technological progress. Here, too, the earlier discussion has been guilty of assuming that the pace of technological advance is more or less a fixed datum, uninfluenced by secular conditions of employment. It seems highly likely that the pace will be different (less?) during stagnation from its value during full employment. We have noted, to be sure, the likelihood of some variation in the timing of innovational investment. But more important, we have cited the inadequacy of autonomous investment as, in some sense, the fundamental cause of stagnation. Since autonomous investment is an important function of the rate of change of technique, it behooves us to determine to what extent the lack of the former stems from a dearth of the latter. And to what extent may a reciprocal effect develop between stagnation and the rate of change of technique? One will surely develop, and adversely. The lower profits that are identifiable with stagnation will deprive some firms of a preferred source of investment funds, others (small and/or new firms) of their only source. If we have been correct in suggesting that the propensity to save out of disposable income will fall during stagnation periods, then the other major source of equity capital may be reduced. If the dangers are more from deflation than its opposite during such periods, the desired levels of precautionary liquidity will also tend to be greater. Such factors will certainly act to damp the rate of innovation.

Answers to these questions must not be confined to the rate of innovation alone. There is no logical basis for accepting the rate of *invention* as given if we are fully to understand the nature of long-run growth. Thus, as before, if stagnation results in the deterioration of the profit position of a large majority of firms, there is a strong likelihood that money to finance research will be cut sharply. When the so-called efficiency experts are called in, nothing seems so expendable as the unnecessary overhead costs consigned to research. With so much of the latter being financed from business funds in the modern industrial economies, this

¹ There is a literature bearing on the influence of the trade cycle on population movements. Cf. J. J. Spengler, "Population Theory," in *A Survey of Contemporary Economics*, Vol. II (Homewood, Ill., 1952), p. 105n and *passim* for references.

sequence of events could lead to a serious diminution in the rate of invention.

What of the *character* of invention and innovation during stagnation? Should the latter be the result of persistent collisions with the growth ceiling, and should this condition be revealed in the form of persistent labor shortages, may not technological progress be given a twist in the direction of labor-saving innovations? If so, this might yield a twist in the direction of capital-using techniques. The ensuing rise in the capital coefficient will affect at once E (by speeding the growth in the labor supply) and U of the coefficient η . The result will be a double-barrelled tendency to raise the value of η and reduce the stagnation tendencies.

Neither is there an *a priori* basis for believing that the pace and form of technological advance will be the same under the inflationary conditions of $\eta > 1$ as they are in the circumstances of $\eta = 1$. We have already posited the possibility that the rate of innovation will be spurred by the relatively higher profits typical of the former situation.¹ But what of the rate of invention, and the character of the latter? The high profits of secular inflation may encourage free business spending on research.² And if producers in the circumstances of $\eta > 1$ are confronted with persistent capital shortages, there is good reason to expect invention and innovation to have a capital-saving emphasis, with the result, again, that the elements of the required growth coefficient, η , will be affected, this time in a manner calculated to reduce the value of η and hence the inflationary pressures.

These remarks on the behavior of technological progress under varying conditions of secular employment are designed to be primarily suggestive in nature. In the present state of knowledge, or lack of it, there are no clear-cut answers, but in this case there are no excuses for economists. Despite their recent preoccupation with full-employment growth ceilings and/or autonomous investment, economists have, for the most part, remained steadfast in their refusal to enlighten themselves on the

¹ Although it may also be asserted that the easy profit situation may encourage laxity and reduce the pressure to introduce promptly the latest in production techniques or products.

² Beside the point raised in the preceding footnote, there is some doubt on this score arising from the difficulty of ascertaining the extent of the positive correlation between profits and business-financed research. Thus the situation of $\eta = 1$ implicitly assumes profits sufficient, at any rate, to assure steady growth of aggregate investment. It is a question whether the still more buoyant situation of $\eta > 1$ will necessarily encourage more expenditures on research than may be presumed to exist in the case of $\eta = 1$.

nature of the determinants of these *variables*. The former they have been content to take as a parameter in their discussions; the latter they have been content to consign to some random shock term as a problem in the theory of probability. This blind spot might be partly excused in the case of labor-force growth, because of the apparent decisive importance of factors which do not fall strictly within the economist's purview. But there is no excuse for the failure to investigate the determinants of the rate and form of technological invention and innovation.¹ No more than we accept a given rate of private investment as inevitably fixing the cyclical character of the aggregate economy, should we accept a given rate of technological progress as unalterable. Just as it has been incorrect to assume that the full-capacity growth rate is some God-given constant, so it is wrong to go on treating technological progress largely as some mysterious unknowable. If it, together with the full-employment growth ceiling, is important, there is no reason why sufficient investigation will not ultimately disclose how it behaves during periods of stagnation or inflation, and equally important, how and to what extent it is amenable to public policy.²

ADDENDUM

It is of particular interest to consider briefly some implications for the Middle and Far East and South America of the historical decline of n to values of unity or less in the West. It would be a mistake to take the position that the relatively high rates of capital formation of the past were due solely to domestic saving, that nations lifted themselves up by their bootstraps. There was much resort to foreign "saving." And it is clear that the backward areas to-day must resort to an important extent to foreign capital.

Yet there is the temptation to point to Britain of the In-

¹ There are, of course, some notable exceptions to these remarks, among them Ferdinand Zweig, Yale Brozen and Gordon Bloom, to name but a few. For most economists, the statement of Professor Frank Knight that "economics does not deal with technology or techniques, which are . . . taken as given" (*American Economic Review* (May 1952), p. 46) probably summarises their position on this matter.

² Concern with the determinants of the full-employment growth ceiling is perhaps the central theme of W. W. Rostow's *The Process of Economic Growth* (New York, 1952). While still leaving much to be desired in the way of providing empirical information on the behavior of labor-force growth and technological progress, this volume is a notable contribution to the field of growth for asking the right questions and for directing economists' attention to the problems most in need of being tackled. To some perhaps, the questions may not seem altogether new. If so, there is even less excuse for the persistent refusal to deal with them.

dustrial Revolution Period and present-day Russia as examples of communities which were able to pull themselves upward largely through "bootstrap" saving. Though the formal mechanism was different, in each case an overwhelmingly skewed distribution of national and disposable income in favor of high-saving groups permitted the necessary saving and investment. (Onceivably, through resort to taxes and/or saving "forced" by similarly skewed income distributions, backward areas to-day might as a last resort accomplish the same thing.

Certain important differences in these cases, however, must be recognised. For one thing, Britain and Russia both had a base which is missing in large measure among many of the present backward areas. This base consists in what has been called "social overhead capital,"¹ that is, networks of roads and other means of transportation and communication, many of the public utilities that are associated with urban communities, etc. Thus Russia at the outset of the first Five Year Plan found herself blessed with a good deal of social overhead investment in the form of railroads and other basic industries, thanks to the efforts of the famous Count Witte. Britain could trace the origin of much of her social overhead capital to her period of commercial greatness. In the bulk of the backward areas to-day, however, it is necessary virtually to start from scratch, to invest in these basic things as a prerequisite to the development of those "directly productive" industries whose effects on living standards, at least, make saving easier. The saving burden in these areas is thus appreciably heavier.²

Moreover, in the case of both Britain and Russia, but especially Britain, (*per capita*) national incomes were, for different reasons, relatively high, higher than those of many of the backward areas to-day, and high enough to make saving compatible at least with subsistence; the required rate of domestic saving in to-day's underdeveloped countries would force large numbers of their populations over the brink into starvation.

¹ This term is due to Dr. P. M. Rosenstein-Rodan, who used it in the course of a lecture delivered at the University of Maryland. For a brilliant discussion of the investment problems of underdeveloped areas, see his paper, "Problems of Industrialisation of Eastern and Southeastern Europe," *ECONOMIC JOURNAL*, June-September 1943, pp. 202-11.

² This particular factor serves to emphasise the need not only for international lending to these underdeveloped areas, but also indicates the need for much of this lending to come, at least in the beginning, from such agencies as the World Bank and the United Nations as well as national governments. Private investment has, with some major exceptions (*e.g.*, railroads), traditionally avoided involvement in much of social overhead capital, the bulk of which has fallen within the government domain.

But there is still another feature which sharply differentiates the current aspects of the problem of $\eta > 1$ from its past character. With modern means of communication (primarily the radio and the movies), we have "demonstration effects" not only among income groups in one country, but also among whole populations in different countries.¹ These effects are not confined to living standards either. Perhaps of equal importance has been the international demonstration of the power of trade unions in the matter of wages. These factors plus the predominance in the current social milieu of egalitarian philosophies make it well-nigh impossible to resort to the older and more obvious methods of "forcing" saving in countries not surrounded by iron curtains. Instead the more subtle, or at least indirect, method of inflation, which even trade unions have not been able to "beat," must effect a situation of forced saving. Because of the factors just mentioned, however, the required degree of inflation is likely to be extreme and its effectiveness severely limited.² Foreign saving seems to be an indispensable adjunct to bootstrap saving in the efforts of underdeveloped countries to close the secular (inflationary) gap between full employment and full-capacity growth.

In all likelihood when technological improvement in these underdeveloped areas begins to take on an indigenous character, the emphasis may be expected to be on capital-saving inventions and innovations, since capital is clearly the scarce factor, labor being relatively plentiful.³ This could provide, indeed already has done so, a potential source of friction between the industrially advanced and backward countries in efforts to transplant technology from the former to the latter, because of the differences in relative scarcity of labor and capital that mark these diverse areas. Only recently have authorities realised the necessity of

¹ Compare R. Nurkse, "Some International Aspects of the Problem of Economic Development," *American Economic Review* (May 1952), pp. 577-9.

² The inflation method of forcing saving is not, of course, without special dangers of its own. One of these is the balance-of-payments disequilibria which hound those countries where inflationary biases are the rule. Another pitfall stems from the necessity of utilising inflation only to keep consumption from rising proportionately with income. Given the subsistence living standards that already prevail in most backward areas, forced saving in all likelihood cannot be used to reduce living standards without fomenting political unrest and possibly revolt. Because of the necessity of investing first in social overhead capital and other basic industries, which do not immediately result in more consumer goods, this could be a difficult problem.

³ Sanitation and other kinds of health improvements provide an important area of exception to this statement. Although such a classification is necessarily arbitrary, these improvements should be classified as labor-saving, for one of their immediate effects is to add greatly to the labor supply.

adapting techniques to the relative abundance of labor that prevails in so many of the underdeveloped areas. From a longer-run point of view, the development and use of atomic energy to meet industrial power needs may provide a potential source of trouble for underdeveloped countries whose capital and energy problems are particularly acute *vis-à-vis*, especially, the United States. Atomic energy may be characterised as being, in the long run, capital saving. The United States being endowed with plentiful capital (as well as power resources, another type of capital, if you will), can afford to be greatly concerned about rigorous safeguards in the international control of atomic energy production, safeguards which of necessity would hamper the industrial development of atomic energy. Countries for whom power shortage looms large as an obstacle in the path of their development may chafe at such restrictions.

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ECONOMIC PROGRESS, OCCUPATIONAL REDISTRIBUTION AND INTERNATIONAL TERMS OF TRADE¹

IN an article entitled "Economic Progress and Occupational Distribution"² Messrs. P. T. Bauer and B. S. Yamey have questioned the validity of the widely held view that economic progress tends to be accompanied by a rise in the percentage of the country's labour force engaged in tertiary activities. They have also suggested that, if economic progress is concentrated mainly in underdeveloped countries, the terms of trade of advanced nations may turn unfavourably. An attempt is made in Section I to show that, in the past, this generally held view concerning the occupational redistribution of labour has been valid.³ Some speculations concerning future developments in to-day's underdeveloped countries are made in Section II. The change in the terms of trade is discussed in Section III.

I

Both time series of occupational distribution in advanced countries, and comparison of statistics of occupational distribution in advanced with those in less developed countries, suggest that

¹ The author wishes to thank Professor G. A. Elliott and Messrs. H. G. Johnson and R. W. Thompson for helpful comments.

² *ECONOMIC JOURNAL*, Vol. LXI, 1951, pp. 741-55.

³ The definitions of primary, secondary and tertiary production used in this article are those of Mr. Colin Clark. Primary production includes agricultural and pastoral production, fishing, forestry and hunting; secondary production covers manufacturing, mining, building construction and public works, gas and electricity supply; and "tertiary production is defined by difference as consisting of all other economic activities, the principal of which are distribution, transport, public administration, domestic service and all other activities producing a non-material output." (*The Conditions of Economic Progress*, 2nd Edition, London, Macmillan, 1951, p. 401.)

In distinguishing tertiary from other production Mr. A. G. B. Fisher places the main emphasis on the structure of consumption: the production of luxuries or quasi-superfluities is an essential characteristic of much tertiary production ("Capital and the Growth of Knowledge," *ECONOMIC JOURNAL*, Vol. XLIII, 1933, pp. 380, 384; "Tertiary Production as a Postwar International Economic Problem," *The Review of Economic Statistics*, Vol. 28, 1946, pp. 148-9; and "A Note on Tertiary Production," *ECONOMIC JOURNAL*, Vol. LXII, 1952, pp. 822-3, 825-8). Consequently, the discussion by Messrs. Bauer and Yamey concerning the income elasticity of demand for tertiary products appears to relate mainly to Mr. Clark's concept of tertiary production.

For other criteria on which the distinction between primary, secondary and tertiary production might be based see A. Sauvy, "Progrès technique et répartition professionnelle de la population," *Population* (Paris), Vol. 4, 1949, pp. 59-67.

economic development has usually been accompanied by large increases in the percentage of the labour force employed in tertiary activities.¹ However, since the use of occupational statistics is subject to several imperfections and qualifications,² we may neglect such statistics and undertake a roundabout examination of the validity of the widely held view about occupational redistribution.

The percentage of a country's labour force employed in tertiary industry may change as a result of: (a) a change in the share of tertiary activity in the volume of national output, and/or (b) a relative change in the amount of labour used for a unit of real output in tertiary as compared with non-tertiary industry.

A. Change in the Share of Tertiary Activity in the Volume of National Output

Tertiary activities may be divided into three broad classes: (a) those which produce services bought directly by the consumer, for instance, various professional, personal and domestic services, education, recreation and amusements; (b) those which facilitate the movement of goods through time and space and the transfer of factors of production, for instance, trade, transport, brokerage, finance and handling of real property; and (c) public services, for instance, administration, social welfare, public health, control or promotion of private business, police and law enforcement, and postal service.

(a) Studies of consumer expenditure strongly suggest that economic development tends to be accompanied by an increase in the share of the first class of tertiary activities in the volume of national output.³

Tertiary products predominate heavily in the last of the following classes into which family expenditure may be divided: food, rent, furniture and equipment, fuel and light, clothing and miscellaneous. Comparison of family budgets at different income levels in the same country, whether advanced or underdeveloped,

¹ See, for example, D. Weintraub and H. Magdoff, "The Service Industries in Relation to Employment Trends," *Econometrica*, Vol. 8, 1940, pp. 291, 296-7, and C. Clark, *op. cit.*, Chapter IX.

² See, for example, P. T. Bauer and B. S. Yamey, *loc. cit.*, and A. G. B. Fisher, *Economic Journal*, Vol. LXII, 1952, pp. 823-4.

³ It will be noted that in the discussion of the relation of occupational distribution to economic progress complications due to foreign trade are usually neglected. For instance, a country may consume foreign tertiary products and pay for them by exporting primary or secondary goods. To that extent the domestic consumption pattern does not affect directly the domestic employment pattern.

shows that the larger the income the greater is the share of "miscellaneous" expenditure. The growth is particularly pronounced in the following "miscellaneous" items, in which tertiary activity is far more important than non-tertiary: education and research, travel and transport, recreation and amusements, trade-union dues and other contributions, and insurance of all kinds (except life insurance, old-age pensions, etc.).¹ For each income group the marginal propensity to consume these products is greater than the average propensity,² while the latter may be higher or lower than the nation's average propensity. An increase in national income will raise the nation's average propensity to consume these products if the *marginal propensity to consume these goods of the groups receiving the increment in national income* is higher than the *average propensity of the nation*.

The marginal propensity to consume these products may be the same for all income levels, or higher for larger incomes. In the former case the marginal propensity of every income group is higher than the average propensity of the nation. Accordingly, it is immaterial who receives the increment in national income; the nation's average propensity to consume these products will rise. In the latter case the larger the individual income, or the greater the increase in individual income, the higher is the marginal propensity to consume these goods. Since economic development has usually been accompanied, at least up to a certain point, by an increase in income inequality, and since economic progress has involved large increases in income, it is

¹ See, for example, International Labour Office, *Year Book of Labour Statistics*, 1949-50, Geneva, 1951, pp. 302, 304-9; "Recent Family Budget Enquiries," *International Labour Review*, Vol. 28, 1933, p. 654; "An International Survey of Recent Family Living Studies: I," *International Labour Review*, Vol. 39, 1939, pp. 700, 702-3; U.S. National Resources Committee, *Consumer Expenditure in the United States; Estimates for 1935-36*, Washington, U.S. Government Printing Office, 1939, pp. 23, 77-9; and *idem*, *Family Expenditures in the United States, Statistical Tables and Appendixes*, Washington, U.S. Government Printing Office, 1941, pp. 37-8. See also R. G. D. Allen and A. L. Bowley, *Family Expenditure, a Study of its Variation*, London, Staples Press, Ltd., 1935, pp. 32-3; U.S. National Resources Committee, *The Structure of the American Economy. Part I. Basic Characteristics*, Washington, U.S. Government Printing Office, 1939, pp. 11-16; and C. Clark, *op. cit.*, pp. 382-6.

² Messrs. Bauer and Yamey suggest that "there is no *a priori* reason to believe that as wealth increases a greater proportion of the luxuries consumed must be products of tertiary activities"; they point out that there are numerous examples of heavy expenditure on the products of secondary activities with growing wealth (*loc. cit.*, p. 749). However, the question is not whether tertiary products constitute "a greater proportion" of the increase in consumption of luxuries due to the rise in income, i.e., whether the marginal propensity to consume tertiary luxuries is greater than that for non-tertiary luxuries, but whether the *marginal propensity to consume tertiary products* is greater than the *average*.

very probable that the groups receiving the increments in income have had a marginal propensity to consume these products higher than the average propensity of the nation.

(b) If family budget data showed separately the "indirect" expenditure on trade, transport, finance, brokerage, property handling and other related services, the foregoing argument could be applied also to the second class of tertiary activities. However, 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,¹ and, therefore, more than in proportion to primary and secondary industry. A greater part of the goods produced is carried through longer time and greater space in advanced than in underdeveloped economies, and centralisation of production increases further the relative importance of distribution and advertising; in addition, a larger part of the income is saved and has to be invested and a greater part of the available capital and real property is transferred in a given period.

(c) Economic development has usually been accompanied by an increase in the relative importance of government activity in which services bulk large, for instance, administration, public health, social welfare, regulation and promotion of private business, police and law enforcement, postal and fire services, scientific and other research, public non-profit-making institutions, parks and other public amenities.²

The fact that economic progress has usually been accompanied by an increase in the share of tertiary activity in the volume of national output is reflected also in time series of national output of advanced countries.³

B. Relative Change in the Amount of Labour Used for a Unit of Real Output in Tertiary as Compared with Non-tertiary Industry

Technical, economic, institutional, administrative and other changes, including the substitution of capital for labour which

¹ See S. H. Frankel, "World Economic Solidarity," *The South African Journal of Economics*, Vol. 10, 1942, pp. 173-5.

² See S. Fabricant, *The Rising Trend of Government Employment*, New York, National Bureau of Economic Research, Occasional Paper 29, 1949, pp. 25-9. Naturally, part of the relative expansion of governmental services may have occurred irrespectively of any economic progress and increase in *per capita* incomes, or it may represent only a transfer of functions from the private to the public sphere.

³ See, for example, S. Kuznets, *National Income. A Summary of Findings*, New York, National Bureau of Economic Research, 1946, pp. 43-5.

accompanies economic development, tend to raise the productivity of labour in various industries. In the past the productivity of labour increased much more rapidly in secondary industry and in the production of commodities in general, than in tertiary industry.¹

Assuming for the moment that the proportion of all resources employed in tertiary industry rises with economic progress, Messrs. Bauer and Yamey suggest that "it would not follow that the proportion of occupied labour engaged in tertiary production must rise. . . . This proposition would be valid only if . . . substitution were not possible in the whole range of tertiary production. . . . These assumptions are inadmissible. Technical possibilities of substitution between productive resources are obviously possible in tertiary production; . . ." ² Nobody would deny these possibilities. Yet the percentage of the labour force employed in tertiary activity will rise unless the various changes in production, including the substitution of other resources for labour, raise the productivity of labour in tertiary production more than in non-tertiary production—indeed, so much more as is necessary to offset the effects of the increase in the share of tertiary industry in the volume of national output.

In discussions about the importance of tertiary industry in

¹ In the United States, in some tertiary industries, for instance, air transport, pipelines and water transport, and even the transport industry taken as a whole, the product per worker has risen more quickly than in non-tertiary industry (H. Barger, *The Transportation Industries 1889-1946*, New York, National Bureau of Economic Research, 1951, pp. 4, 52 ff., 150). Labour productivity in communication has also tended to rise noticeably. However, in the United States or Great Britain, these activities account for only about 15-20% of the labour engaged in tertiary occupations (D. Weintraub and H. Magdoff, *loc. cit.*, p. 291, and C. Clark, *The Conditions of Economic Progress*, 1st Edition, London, Macmillan, 1940, p. 187). In the remainder of tertiary production, which includes such activities as public administration, the distributive trades, various professional and personal services, stevedoring, education and sports, improvements in productivity have probably been slow (S. Fabricant, *op. cit.*, pp. 23-4; *idem*, *Labor Savings in American Industry 1899-1939*, New York, National Bureau of Economic Research, Occasional Paper 23, 1945, p. 38; D. Weintraub and H. Magdoff, *loc. cit.*, pp. 296-7; G. J. Stigler, *Employment and Compensation in Education*, New York, National Bureau of Economic Research, Occasional Paper 33, 1950, pp. 9-11; and H. Jerome, *Mechanization in Industry*, New York, National Bureau of Economic Research, 1934, pp. 157, 203-4, 274-80, 337). As a consequence, the productivity of labour has risen much more rapidly in non-tertiary than in tertiary industry (S. Fabricant, *Labor Savings in American Industry 1899-1939*, pp. iii, 37-8; C. Clark, *The Conditions of Economic Progress*, 2nd Edition, pp. 314-19; and United Nations, Statistical Office, *National Income and its Distribution in Under-developed Countries*, New York, Statistical Papers, Series E, No. 3, 1951, p. 7).

² P. T. Bauer and B. S. Yamey, *loc. cit.*, pp. 749-50.

underdeveloped countries considerable emphasis is usually placed on trade and domestic service.¹ 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.

Messrs. Bauer and Yamey describe the conditions of trade in West Africa, but not those of primary production, and they suggest that the general increase in productivity due to economic progress "is likely to reduce the superfluity of very cheap labour formerly available for employment in certain types of tertiary activity, notably domestic service, petty trade and menial tasks generally, . . ." ² Yet in many underdeveloped countries the disguised unemployment of unskilled labour (including women and children) is found concentrated mainly in agriculture, handicrafts and cottage industries, and only to a much smaller extent in the distributive trades.³ Moreover, comparison with the situation in advanced countries reveals some striking similarities between trade in underdeveloped and in advanced countries—low capital requirements, easy entry, low rewards and a certain amount of disguised unemployment; ⁴ while, on the other hand, in primary industry (which is relatively more important in underdeveloped than in advanced countries) there is an enormously greater proportion of disguised unemployment in underdeveloped countries.

The percentage of the labour force employed in domestic service depends on such factors as consumption patterns, the extent to which some "domestic" services are commercialised, the volume of spendable income and, chiefly, the distribution of income. The inequality of income distribution is probably the main explanation of the relatively high percentage (7–11%) of the labour force employed as domestic servants in the period before the Second World War in such countries as Great Britain

¹ See, for example, P. T. Bauer and B. S. Yamey, *loc. cit.*

² *Ibid.*, p. 751.

³ Messrs. Bauer and Yamey note that in Africa "women and children are also available for trade," partly because "there is little for women to do in the home . . ." (*ibid.*, pp. 744–5). However, in many other underdeveloped countries work outside the home is taboo for women of the middle and higher classes, and in Bulgaria, for instance, it has been estimated that thirteen and a half hours a day are required in order to perform the housework in a rural home, which includes making clothes, kneading and baking bread, etc. (League of Nations, European Conference on Rural Life, *Bulgaria*, Geneva, 1940, p. 24).

⁴ The reader might be interested in comparing the description of conditions of trade in Africa by P. T. Bauer and B. S. Yamey (*loc. cit.*, pp. 744–5) with the description for the United States by D. Weintraub and H. Magdoff (*loc. cit.*, p. 297).

and the Netherlands.¹ In many underdeveloped countries, in which, as suggested below, the distribution of income is more equal, this percentage tends to be smaller. Probably, Egypt and India are famed more than many other countries of Asia and the Middle East for the large number of domestic servants. Yet in Egypt of a total active population of 7,422 thousands in 1937, only 256 thousands or about 3·4% were domestic servants.² In India of 168·8 millions occupied in 1931 only 12·6 millions were in "domestic service," and of these only 2·7 millions had "domestic service" as their "principal" occupation and 1·7 as their "subsidiary" occupation. The remaining 8·2 millions, of which 7·9 millions were females, showed "domestic service" as their "dependent" occupation. To a very large extent they were "female dependents who have returned domestic service as their occupation," female workers who were "mainly if not entirely agricultural" and females of whom "a large proportion also helps in the fields."³

II

While no forecast is attempted regarding occupational changes that may accompany economic progress in to-day's underdeveloped countries, some notes may be in order.

As indicated, family budget data available for some underdeveloped countries suggest that the income elasticity of demand for the first class of tertiary products exceeds unity. However, our knowledge of the social, religious, institutional, economic and other factors on which demand elasticities in the less-developed countries depend is incomplete. Concerning the second and third classes of tertiary products, it seems safe to anticipate that economic progress will be accompanied by a relative increase in the demand for such services.

It has been argued by Messrs. Bauer and Yamey that, even though the income elasticity of demand of each individual for tertiary products may exceed unity, if the bulk of an increase in the national income of underdeveloped countries accrues to the low-income groups whose average propensity to consume tertiary

¹ C. Clark, *op. cit.*, pp. 408, 412; see also pp. 355, 380–2, and G. J. Stigler, *Domestic Servants in the United States, 1900–1940*, New York, National Bureau of Economic Research, 1946, pp. 4–6, 30–2.

² Institut National de la Statistique et des Études Économiques, Direction de la Conjoncture et des Études Économiques, *L'Égypte*, Paris, Presses Universitaires de France, 1950, p. 45.

³ *Census of India, 1931*, Delhi, Manager of Publications, 1933, Vol. I, *Part I. Report*, p. 279, 281–2, and *Part II. Imperial Tables*, pp. 206, 216.

products is lower than the nation's average propensity, the latter may well fall. The authors consider this to be a "very likely contingency" in countries such as India and China.¹ This argument calls for closer examination, for the conclusion really requires that the marginal propensity to consume tertiary products of the groups receiving the increment in national income be lower than the average propensity of the nation.

There is no evidence as to whether the marginal propensity to consume tertiary products in underdeveloped countries is the same for all income levels, or whether it is higher for larger incomes and for greater increments in income. As indicated in Section I, in the former case the nation's average propensity to consume tertiary products will always rise with an increase in income. Even in the latter case there are strong reasons for believing that economic progress will be accompanied by a rise in the nation's average propensity to consume tertiary products.

The distribution of income may first be considered. In many predominantly agricultural countries of Asia and the Middle East the number of large incomes consisting of industrial, mining, commercial and speculative profits is very small; in addition, there is a small number of landed aristocracy. Taken together, these high-income earners are a very small percentage of all income earners, while the great bulk of the population is all very close to the bottom of the income ladder. It seems that, compared to Western industrial nations, the income distribution in these countries is very equal, and the income level of this great bulk of the population is very close to the national average.²

¹ P. T. Bauer and B. S. Yamoy, *loc. cit.*, p. 751.

² In "The Pareto Law and the Distribution of Income" (*Economic Journal*, Vol. XLV, 1935, pp. 663-81), G. F. Shirras gives incidentally some estimates of the inequality of income distribution in India. In the late twenties it is shown to be about the same as that in Britain in 1937-38, estimated by F. A. Cockfield in "The Distribution of Incomes" (*Economica*, N. S., Vol. 14, 1947, p. 258).

Shirras's estimates are based only on incomes subject to income tax—over Rs. 1,000 up to 1918 and 2,000 after 1923. But 314,918 incomes over 2,000 in 1929-30 is too small a percentage (not more than 0.35%) of the total income-earners on which to fit a Pareto curve, particularly since, as Shirras himself found, for India "the points of the income-tax data do not lie even roughly on a straight line, *i.e.*, the Pareto line" (p. 679). Since such a great part of the incomes were lower than Rs. 2,000 (in 1917-18 only 381,089 incomes were higher even than Rs. 1,000) and since they probably accounted for about 92-94% of the total national income, one might well have expected the slope of Pareto's curve (which increases with the equality of distribution) to grow substantially if a larger number of incomes were considered. This supposition is strengthened by the fact that on the basis of incomes subject to income tax Shirras found a slope of 1.48 for 1929-30, while on the basis only of incomes subject to super tax (higher than Rs. 50,000) he found a slope of only 1.15 (p. 676). Pareto's curve for India might be quite convex to the origin.

In the countries considered the low-income earners "live near starvation levels." As their income rises they will start spending part of it on such kinds of tertiary product as education, health, banking, and various professional and other services practically unknown to them at present; indirectly, they will increase considerably their expenditure on trade, transport, communication, finance and other related services. Even if these new expenditures are not very important in absolute terms, they will represent very large increases over the original situation—the marginal propensity of the low-income groups to consume such products is much higher than their average propensity. In view of the present distribution of income their average propensity is probably close to the nation's average propensity. Accordingly, it is very likely that their marginal propensity will well exceed the nation's average propensity. Moreover, part of the increase in national income will accrue to higher-income groups, whose marginal propensity to consume tertiary products is higher still.¹ The likelihood that the marginal propensity of the various income groups will exceed the nation's average propensity is very strong indeed, since economic progress implies large increases in income and it has been assumed above that the larger the increment in income the higher is the marginal propensity to consume tertiary products.

There is no basic reason why in the underdeveloped countries productivity of labour should rise faster or more slowly in non-tertiary as compared with tertiary industry. However, the rate of increase in productivity in the various industries of these countries will depend both on the rate at which improvements already known in advanced countries may be adopted and on new improvements. While guesses on the latter would be idle, one might hazard the view that, since in the past productivity has risen much more quickly in non-tertiary industries, more im-

¹ Since many groups whose income is lower than the national average income probably have a marginal propensity to consume tertiary products higher than the nation's average propensity, the latter may rise even if the income inequality decreases with economic development. However, in the past, economic development has usually been accompanied, at least up to a certain point, by an increase in income inequality, and one might expect a similar phenomenon in to-day's underdeveloped countries. New wealthy classes, such as industrialists, large-scale merchants, business executives and speculators, are likely to emerge with economic development. Where the income inequality is as small as has been suggested, even government policies favouring redistribution of income may only succeed so far as to slow down the increase in income inequality after taxes. Moreover, such governments tend to increase considerably the nation's relative expenditure on tertiary products (administration, social work, health services, etc.).

provements are likely to be available for adoption in non-tertiary than in tertiary industry in newly developing countries.¹

III

Some comments have been made on the suggestion of Messrs. Bauer and Yamey that if the bulk of an increase in income accrues to the low-income groups whose average propensity to consume tertiary products is lower than the nation's average propensity, the latter may fall. According to the same authors, "an important practical conclusion follows . . . if this proposition is extended internationally. If a large proportion of an increase in world income accrues to countries or to individuals who spend a smaller proportion than the world average on products of a luxury type it follows that the demand for luxuries would suffer a relative decline. This would tend to turn the terms of trade in favour of the producers of relative necessities and against the producers of relative luxuries. On an international scale the luxuries would be mainly the products of industrialised countries. There is implicit in this possibility a threat to the standard of living of some of these countries. It reinforces the more familiar argument based on population increase, especially in the primary producing countries. The relative demand for the essentials of life can clearly increase either because there are more mouths to feed or because an increase in income accrues largely to the relatively poor."² This argument requires closer examination.

The terms of trade will turn in favour of the producers of relative luxuries if the demand for such goods in terms of relative necessities expands more (decreases less) than the supply. An increase in the national income of poor countries will tend to raise the demand for foreign luxuries, while an increase in their population will tend to decrease their *per capita* income and average propensity to consume such goods and to lower the demand for them. On the assumption that poor nations increase their income by expanding their production of relative necessities

¹ It may be noted also that much tertiary production in which substitution of capital for labour and other improvements are technically possible, is free from foreign competition—at least at the present time; dish-washing, laundry, cleaners' services and internal transport may be instanced. Since business-men do not really operate according to the principle of profit maximisation, the pressure to reduce costs by effecting such improvements and substituting capital for labour (when the relative cost of the latter rises following economic development) is probably smaller than it is in large sectors of primary and secondary industry open to foreign competition. Textile and shoe machinery come with economic progress before dish-washing equipment in restaurants.

² P. T. Bauer and B. S. Yamey, *loc. cit.*, pp. 751–2.

the following possibilities may be distinguished. If there is no increase in the population of poor countries, or if their national income expands faster than their population, the terms of trade will tend to turn in favour of, rather than against, the more advanced, luxury-producing, countries: the demand for foreign luxuries will increase while the supply is the same. If the population increases faster than the national income, the change in the terms of trade will depend on the extent of the fall in *per capita* income and average propensity to consume foreign luxuries on the one hand, and the extent of the increase in total income on the other. If the increase in total income is substantial and the fall in *per capita* income slight, the terms of trade will tend to change in favour of the more advanced countries. In the unlikely case "where there is a mere increase in numbers" and no change in total income, the terms of trade will tend to turn against the more advanced countries.

The danger for the terms of trade of the more advanced countries would seem to lie less in the possibility that an excessive increase in the population of underdeveloped countries may decrease the demand for relative luxuries, and more in the possibility that these countries may expand their own supply of relative luxuries by more than their demand for them.

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GENESIS OF THE MARGINAL UTILITY THEORY

FROM ARISTOTLE TO THE END OF THE EIGHTEENTH CENTURY

SEVERAL times the history of the marginal utility theory had to be rewritten. The triumvirate Jevons, Menger, Walras knew only Gossen as their forerunner. To-day we recognise that the analysis of subjective elements in economic valuation starts with Aristotle. He begins a trend of thought whose traces abound in the writings of the Middle Ages, the Renaissance and the enlightenment. French, Italian and Swiss authors of the enlightenment have so perfected this analysis, that it might have been possible during the time of Adam Smith to base a system of political economy entirely on marginal utility calculation. To prove this claim a short history of the utility theory from Aristotle to Galiani and Bernoulli is presented on the following pages.¹

It is generally accepted that Aristotle was the first who created the concept of the value in use. That he had a far-reaching knowledge of this field is generally unknown. Only Oskar Kraus of Prague, who was a student of Aristotle and of the Austrian school of economics, presented a complete picture of the Aristotelian thoughts, which show similarities with the Austrian theories of much later date.² Economic goods, as Aristotle

¹ Main publications about the prehistory in chronological sequence :

Achille Loria, *La Teoria del Valore negli economisti Italiani*, Bologna, Garagnani, 1882. (Reprint from *Archivio Giuridico*.) This short paper has an outspoken Marxian bias.

Augusto Graziani, *Storia critica della teoria del valore in Italia*, Milano, U. Hoepli, 1889. The best collection of material concerning the Italian period. (Quoted *Storia critica*.)

Idem, "Le idee economiche degli scrittori Emiliani o Romagnoli sino al 1848," *Memorie della Regia Accademia di Scienze, Lettere ed Arti in Modena*, Serie II^{ma}, Volume X, pp. 431 et seq. Modena, 1893. (Quoted *Le idee economiche*. . .)

Hannah Robie Sewall, "The Theory of Value before Adam Smith," *Publications of the American Economic Association*, Third Series, Vol. II, No. 3, August 1901.

Rudolf Kaulla, *Die geschichtliche Entwicklung der modernen Werttheorien*. Tübingen, Lauppische Buchhandlung, 1906.

Otto Weinberger, *Die Grenznutzenschule*, Halberstadt, Meyer's Buchdruckerei, 1926.

² See Dr. Oskar Kraus, "Die Aristotelische Werttheorie in ihren Beziehungen zu den Lehren der modernen Psychologenschule," *Zeitschrift für die gesamte Staatswissenschaft*, Tübingen, Lauppische Buchhandlung, Volume 61, 1905, pp. 573 et seq. As late as 1940 Kraus' investigations were neglected by Edmund Whittaker, *A History of Economic Ideas*, New York, Longmans, Green

pointed out, derive their value from individual utility, scarcity and costs. If the amount of goods is increasing the value decreases and can even become negative.¹ Aristotle had at least some knowledge of the law of diminishing utility.² Even Menger's theory of imputation based on loss calculation (*Verlustgedanke*) can be found in Aristotle, as Oskar Kraus has pointed out. Aristotle claimed in the *Topics*—a work not often read by economists—that the value of one good can be judged best if we lose or add it to a given group of commodities. The greater the loss which we suffer from a destruction of this good, the "more desirable" is this commodity. Also, the more we gain by the addition of a thing, the higher is its value. The context makes it quite clear that Aristotle applies his argument to economic goods (example of the pruning-hook and the saw in the *Topics*). Menger and Böhm-Bawerk used the same reasoning. Whether they read the *Topics* could not be found out.³

& Co., 1940, p. 65. Whittaker apparently read only the *Politics* and the *Nicomachean Ethics*, but he did not pay any attention to the other works, especially the *Topics*, one of the main sources of Kraus' information.

¹ "External goods, like all other instruments, have a necessary limit of size. Indeed, all things of utility (including the goods of the body as well as external goods) are of this character; and any excessive amount of such things must either cause its possessor some injury, or, at any rate bring him no benefit." Aristotle, *Politics*, VII, I, p. 1323, b. 7 (Sir Ernest Barker's translation), quoted in Kraus, *op. cit.*, p. 582.

² Kraus, *ibid.*, and Whittaker, *op. cit.*, p. 65.

³ To justify his claim Kraus quotes from Aristotle, Menger and Böhm-Bawerk (Kraus, *op. cit.*, pp. 584, 585). A complete English version of these quotations is given here.

"Moreover, judge by the destruction and losses and generations and acquisitions and contraries of things : for things whose destruction is more objectionable are themselves more desirable. Likewise also with the losses and contraries of things; for a thing whose loss or whose contrary is more objectionable is itself more desirable. With the generations or acquisitions of things the opposite is the case : for things whose acquisition or generation is more desirable are themselves desirable." Aristotle, *Liber Topicorum*, Book III, ch. 2, ¶ 8, p. 117 a (translation W. A. Pickard-Cambridge; from the works of Aristotle, Ross ed., Oxford).

"Again, a thing is more desirable if, when added to a lesser good, it makes the whole a greater good. Likewise, also you should judge by means of subtraction : for the thing upon whose subtraction the remainder is a lesser good may be taken to be a greater good, whichever it be whose subtraction makes the remainder a lesser good." Aristotle, *op. cit.*, Book III, ch. 3, ¶ 11, 12, p. 118 b.

"The value of one concrete commodity of higher order [producers' goods—E.K.] is identical with a difference of valuation, in which the higher value is determined by the want satisfaction created by a combination of goods of higher order including the concrete good in question and the lower value by the want satisfaction created by the same combination of goods of higher order without this concrete good." Carl Menger, *Grundsätze der Volkswirtschaftslehre*, Second edition, Vienna, Hölder-Pichler-Tempsky, 1923, p. 157.

"Value judgements take place mainly at two occasions : first if we dismiss
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No. 251.—VOL. LXIII.

So Aristotle's economic thinking already contained a number of concepts which have since become important elements in the marginal utility theory. Yet for the next 1,600 years these thoughts were not used. It was not before A.D. 1,200 that growing complications of market forms and the discussion of the just price forced the medieval doctors to handle, at least partly, the Aristotelian instruments. The philosophers in the thirteenth and fourteenth centuries, Thomas Aquinas, Henry of Ghent, Johannes Buridanus, two great theologians of the counter-reformation in the sixteenth and seventeenth centuries, Louis de Molina and Leonardus de Lessius (de Leys) and even the two Protestant authorities of natural law during the seventeenth century, Hugo de Groot (Grotius) and Samuel von Pufendorf claim often with the same words that the value of a commodity is determined by utility and scarcity.¹ They all follow their master, Aristotle, and

a commodity from our fortune, e.g., either by making a present or by bartering or by consumption; second if we acquire a commodity to increase our fortune. . . . A commodity which is already in our hands will be appraised according to the loss which we suffer by giving it away. . . . A commodity which is still in our hands will be valued in the opposite way according to the increase of utility which its acquisition brings." Eugen von Böhm-Bawerk, "Grundzüge der Theorie des wirtschaftlichen Güterwerts," *London School of Economics and Political Science. Series of Reprints of Scarce Tracts in Economic and Political Science*, reprinted from "Jahrbücher für Nationalökonomie und Statistik," *Neue Folge*, Vol. 13, p. 33, footnote 2.

Kraus, *op. cit.*, compares this Böhm-Bawerk quotation with his first quotation from the *Topics*. The resemblance is rather far-reaching.

¹ For this period the following works have been used:

Hugo de Groot, *De Jure Belli ac Pacis libri tres*, Reproduction of the edition of 1646, Carnegie Institute of Washington, 1913, especially liber II, ch. 12, ¶ XIV, pp. 232, 233.

Samuel Pufendorf, *De Jure Naturae et Gentium*, Vol. I, Frankfurt and Leipzig, 1769, 5th book, ch. I, ¶ 4.

V. Brants, "L'économie politique et sociale dans les écrits de L. Lessius," *Revue d'histoire ecclésiastique*, Vol. XIII, No. 1, Louvain, January 1912.

Dr. Edmund Schreiber, "Die volkswirtschaftlichen Anschauungen der Scholastik seit Thomas v. Aquin," *Beiträge zur Geschichte der Nationalökonomie*, Vol. I, Jena, Fischer, 1913, pp. 69, 70 *et passim*.

George O'Brien, *An Essay on Medieval Economic Thinking*, London, Longmans, Green & Co., 1920.

Selma Hagenauer, "Das 'justum pretium' bei Thomas von Aquino. Ein Beitrag zur Geschichte der objektiven Werttheorie," Beiheft 24 zur *Vierteljahrsschrift für Sozial- und Wirtschaftsgeschichte*, Stuttgart, Kohlhammer, 1931. The author is of the opinion that Aquinas has only an objective theory of value. According to my thinking this is a rather one sided opinion.

W. Seavey Joice, S.J., *The Economics of Louis de Molina* (Doctoral thesis, typescript), Harvard, November 1948. The thesis contains in the appendix a translation of Molina's value theory.

All the writers mentioned in the text and in this footnote use often the same words for the determination of the value in use: *Buridanus*: "Valor rerum aestimatur secundum humanam indigentiam. . . ." "Nihil est bonum nisi

they do not present any essential new ideas. They are not interested primarily in a more exact explanation of economic valuation but in the presentation of a very complicated casuistry of the just price, for which their value discussion forms a preface. Their value theories are a mixture of costs and subjective values, of objective prices and valuations. Utility is more often than not the general welfare of a community and not the specific pleasure of an individual. The medieval doctors had not improved the utility concept, but it was their great merit to keep alive the Aristotelian theory and his discussion about value. Their works and those of their teacher, Aristotle, were read by the Italian and French economists of the seventeenth and eighteenth centuries, who presented the first essential progress since Aristotle.

Between the schoolmen and this new group stands Gian Francesco Lottini (fl. 1548), who was discovered by Augusto Graziani.¹ Lottini, an Aristotelian scholar, shady politician and gang leader of a Venetian murder ring to boot,² writes at the end of his colorful life a vade-mecum for a prince. Lottini's work "Avvedimenti civili," inspired by Machiavelli's "Il Principe," contains a number of shrewd political observations which are loosely strung together by the social philosophy of his great Greek teacher.³ Lottini writes as an elderly statesman, not as an economist; he touches economic subjects only inci-

propter causas finales; . . . Sed supplementum videtur mensurari per indigentiam; majoris enim valoris est supplementum quod majorem supplet indigentiam." George O'Brien, *op. cit.*, pp. 109, 110.

Antonius of Florence determines value by three factors, virtuositas, raritas and placibilitas. George O'Brien, *ibid.*

Thomas Aquinas explains subjective value from the working together of "indigentia" and the "diversitas copiae et inopiae." Edmund Schreiber, *op. cit.*, pp. 43, 57.

Leonardus Lessius. "Indigentia humana" and "necessitas" or "inopia" determine economic value. V. Brants, *op. cit.*, p. 85.

Hugo de Groot: "Indigentia" and "copia." Hugo de Groot, *op. cit.*, Grotius does not quote here the schoolmen, but it is very likely that he knew them. Samuel Pufendorf, *op. cit.*, explains value in the same way as Hugo de Groot.

¹ Graziani, *Storia critica*, pp. 29, 30.

² About Lottini's somewhat unsavory character see Cecily Booth, *Cosimo I, Duke of Florence*, Cambridge, England, at the University Press, 1921, pp. 131, 132, 199. Despite his reputation, he was known to the great historian Francesco Guicciardini. Exact dates about Lottini's life could not be acquired. He was secretary to Cosimo I, de Medici, Duke of Florence in 1548.

See also *La Bibliofilia*, Rivista dell'arte, Firenze, 1909, Vol. 10, 1908-9, p. 368. About his style see Bartolomeo Gamba da Bassano, *Serie dei Testi di Lingua*, Venezia, Gondoliere, 1839, Sec. xvi, p. 441, first column.

³ Shortly after Lottini's death several editions of his work were printed.

Gian Francesco Lottini da Volterra, *Avvedimenti Civili*, Al Serenissimo D. Francesco Medici Gran Duca di Toscana, In Firenze, Nella stamperia di Barto-

dentially. But even so, he mentions economic principles of great importance. Lottini's point of departure is the traditional Aristotelian dichotomy between the common good (*il ben publico*) and the goods serving individual needs (*bene in particolare*).¹ Common welfare and individual well-being, so explains Lottini, are not identical, but are related to each other. The common good is the foundation of the citizen's personal welfare; *e.g.*, if the citizen loses his property he can get it back with the help of the state.² Private needs are satisfied with goods; these goods produce pleasure. His explanation of pleasures is typical for the transition between medieval and modern thinking. He moralises like a schoolman and he analyses like a modern scientist at the same time. We feel pleasure by satisfying our needs, which are wants of food and of sex.³ In satisfying our appetites, moderation, regulated by reason, is advisable. Reason should make men different from beasts.⁴ Unfortunately too many people do not

lomeo Sermatelli, 1574. (In Houghton library, Cambridge, Mass., quoted *Avvedimenti*, edition Florence.)

PROPOSITIONI OVERO CONSIDERATIONI in materia di cope di stato sotto titolo di Auuertimenti, Auuedimenti, Civili & Concetti Politici, di M. Francesco Guiccardini, M. Gio [sic E.K.] Franco/so Lottini M. Franco/so San/ouini, In Vinogia, Presso Altobello Salicato, 1588, Alla Libreria della Fortozza. (Also in Houghton library quoted *Avvedimenti*, edition Vinogia.) This copy belonged once to the English poet and theologian John Donne (1573-1631), whose marginal notes in ink stressed the connection between Lottini and Aristotle. The Houghton library has also an edition of 1583, of which the edition of 1558 is a reprint.

Lottini . . . *Avvedimenti Civili* . . . In Venetia, Fabio & Agostino Zopini, 1582. (Rare book-room University library of the University of Illinois, Urbana-Champaign, quoted *Avvedimenti Civili*, edition Venice.)

All editions are identical in text and in paragraphs, but not in spelling and in pagination. The pagination is in folio.

¹ Folio 17, v, ¶ 60, edition Venetia. Folio 82, ¶ 178, edition Florence. For full quotation see next footnote.

² "Il vero bene di ciascuna cosa, la quale sia parte d'un'altra, non consiste in se stessa, ma hà il fondamento, in quell'altra, di cui essa è parte." (If a thing is a part of another thing, it has no true value in itself, but its value is established by that other thing of which it is a part (*my translation*)—*i.e.*, the individual good is a part of the common welfare and has therefore no value in itself.) The personal or individual good "sta po/to, e fondato nel ben publico della Città . . ." (is based and founded on the common welfare of the state (*my translation*). If anything dangerous happens to the private goods . . . "possono tutta via sperare di potersi con l'aiuto del publico ageuolmente riauere." (There is hope that one can regain these goods easily with the help of the state (*my translation*). All quotations from edition Florence, Folio 82, ¶ 178.

³ ". . . il mangiare & le co/e di Venere . . ." (Folio 128, ¶ 278).

⁴ ". . . il piacere in ciò non dee pa/ffar la misura, . . ." (Folio 87, ¶ 188, edition Florence)—pleasure ought to be moderate (*my translation*). In pleasure-seeking ". . . se non da colore, che non sanno far differenza dell'essere huomo all'essere bestia . . ." (Folio 43, v, ¶ 187, edition Vinogia)—do not pretend that there is no difference between man and animal.

find a limit for their insatiable appetite.¹ Man does not even pay enough attention to his future, *he overrates his present needs*, because he follows his senses which reveal his present wants, and not his reason with which he may plan for the future.² Behind the moralist Lottini is the shrewd observer of human foibles who almost discovers the infinity of wants and who knows about the underestimation of future wants.³ Like Molière's Monsieur Jourdan, who did not know that he was speaking prose, Lottini apparently was not aware of the fact that he was dealing with economic subjects; neither was this seen by his many readers. So it is understandable that not he but his younger contemporary Davanzatti started the Italian school of economists.

Davanzatti and his followers, especially Montanari and Galiani, formed a school, because they had a common principle (the Aristotelian value in use) and a common program (the application of this principle to other economic subjects). Davan-

¹ "Jo ho conosciuti molti, che sono /tati infaziabili nel domādare' . . ." (Folio 70 r, ¶ 195, edition Venice)—I have known many whose demand could not be satisfied.

² "Ben che le co/e future da gl'huomini /sui antiuedute habbiano chiari /fime ragioni da douer /uccedere nel modo, che s'antueggono, tutta via, perche le pre/enti sono dināzi a gl'occhi, e/i toccano qua/i cō mano, ell haūto hauuto nō poche volte forza di tirarei medesimi huomini /sui a pigliar piùto/to la più uicina /odisfazione, che a/pettare la lōtana, . . ." (Folio 91 r, ¶ 260, edition Venice)—Future things, as far as they can be foreseen by wise men, have the clearest reason to happen all the time in the way in which they have been foreseen. In spite of it the present, which is before our eyes and which can, so to speak, be grasped with our hands, has forced, more often than not, even wise men to pay more attention to the nearest satisfaction than to hope for the far future.

The reason, according to Lottini, is that one pays more attention ". . . di ciò che il senso uede, che di quanto può far cono/cere per uia di ragione, . . ." (Folio 91, v, ¶ 260, edition Venice)—to those things which one sees with his senses than to those which one can learn by reason.

See also "Di maniera, che pochi /on quelli che delle deliberazione lunghe, e periculo/e vogliano oftenatamēte vederne il fine" (Folio 70 v, ¶ 196, edition Venice)—Only a few people follow a long-lasting and risky project stubbornly to its end.

³ Graziani's valuable discovery of the *Avvedimenti* is somewhat marred by misunderstandings. Graziani claims that Lottini made all economic actions dependent from needs. ". . . Che i bisogni sono il primo motore delle azione economiche . . ." (Graziani, *Storia critica*, p. 29). This is not quite correct because, as an Aristotelian, Lottini believes that pleasure-seeking should be restrained by moderation and reason, which, according to the author of the *Avvedimenti*, are the final rules of human action. Furthermore, Graziani asserts that Lottini has discovered the infinite character of needs. "Egli afferma che la soddisfazione d'un bisogno determina tosto il sogerme d'un altro . . ." (Graziani, *ibid.*)—He [Lottini] claims that after one want is satisfied another soon will come into existence (*my translation*). As I had pointed out before, Lottini had never characterised the interplay of want and satisfaction exactly in such a way. Lottini is rather inclined to consider the infinite character of needs as a moral aberration.

zatti¹ and, following him almost verbatim, Montanari² explain the value of money on a completely subjective basis. Money reflects the value of commodities. ". . . tant' altre cose vale, tant oro vale . . ." (Davanzatti). The young Abbé Galiani, one hundred years after Montanari, finds a new formulation of the value theory, and presents a subjective theory of distribution.⁴ Value is defined as a ratio between utility and scarcity. With the decrease of scarcity, utility falls and vice versa. The ratio between utility and scarcity does not only explain the value of

¹ Bernardo Davanzatti (1529-1606) was a merchant, an economist, a famous translator of Tacitus, an historian of the English reformation, he became, when seventeen years of age (1547), a member of the Florentine Academy. He is a typical representative of the Counter-reformation, a man of great classical erudition and at the same time a stern Catholic. This religious attitude is strongly expressed in his *Dello Schisma d'Inghilterra* (About the English Reformation). See Enrico Bindi ed., *Le opere di Bernardo Davanzatti*, Florence, Monnier, 2 vols, 1852. Besides Bindi the following works about Davanzatti were used:

Gino Arias, "Les précurseurs de l'économie monétaire en Italie: Davanzatti et Montanari," *Revue d'économie politique*, 1922, pp. 733 *et seq.*, especially p. 736.

² Geminiano Montanari (1633-87), Professor at Bologna and later at Padua. See Gino Arias, "Les précurseurs," *op. cit.* The following work of Montanari was used: Geminiano Montanari, "Della Moneta," *Trattato Mercantile, Scrittori Classici Italiani de Economia Politica*, Parte antica, Vol. III, Milano, Destefanis, pp. 43-5, 58 *et seq.* The work was originally published in 1683 under the title: *LA ZECCA IN CONSULTA DI STATO* (Money in the Affairs of Government). It was republished with the original title in *Economisti del Cinque e Seicento*, Augusto Graziani, ed. Bari, Laterza, 1913.

³ As much as other things are worth, as much value has gold. Davanzatti, *op. cit.*, p. 33. Gold is here used figuratively in the sense of money.

⁴ Ferdinando Galiani (1728-87), *Della Moneta*. (First anonymous edition of 1750 or 1751 was not in my hands.) I used the edition of Fausto Nicolini, Bari, Laterza, 1915, and the English translation of Arthur Eli Monroe, *Early Economic Thought*, Cambridge, Harvard Press, 1945, pp. 281 *et seq.* (quoted Monroe). The outstanding economist Galiani was in his younger days, when he wrote his treatise on money, a fervent Catholic. Later in Paris he became a Voltairian wit and freethinker. He has attracted the attention of many writers. From the abundant literature the following papers were used:

S. G. Tallentyre, *The Friends of Voltaire*, New York, G. P. Putnam's Sons, 1907. See especially "Galiani the Wit," pp. 62 *et seq.* Fausto Nicolini, editor, *Il Pensiero del Abate Galiani*, Bari, Laterza, 1909, pp. 3 *et seq.*

Wilhelm Eduard Biermann, "Der Abbé Galiani als Nationalökonom, Politiker und Philosoph nach seinem Briefwechsel," *Volkswirtschaftliche und Wirtschaftsgeschichtliche Abhandlungen* (Essays in honour to the 60th birthday of Wilhelm Stieda), Leipzig, Voit, 1912, pp. 168 *et seq.*

Fausto Nicolini, "Giambattista Vico e Ferdinando Galiani," *Ricerca Storica. Giornale Storico Della Letteratura Italiana*, Vol. LXXI (10 semestre 1918), pp. 142 *et seq.*

Gino Arias, "Ferdinando Galiani et les Physiocrates," *Revue des sciences politiques*, Vol. XLV (1922), pp. 346 *et seq.*

Louise Sommer, "Abbé Galiani und das physiokratische System," *Zeitschrift für Volkswirtschaft und Sozialpolitik*, Neue Folge, Vol. V, p. 341.

Graziani, *Storia critica*, pp. 100 *et seq.*

consumer goods but also the value of productive factors, especially labor. The value of labor is determined by the peculiar utility and scarcity of the special kind of labor in demand. Talents and geniuses are much higher paid than the common laborer, because Nature produces and matures only a small number of able men. Generally speaking, according to Galiani, it is not labor costs which determine value, but rather value which determines labor costs. 150 years after Galiani, Böhm-Bawerk reached a very similar conclusion. Galiani's theory of interest has a strong resemblance to the explanation presented by the Austrian economist. Interest, so the young abbé claims, is the difference between present and future money. Galiani must have found this theory independently, he knew some of his forerunners, especially Davanzatti, but he had not read Lottini.¹

Galiani developed an economic theory based entirely on subjective estimation. The outlines of his system are still valid to-day. Yet one problem is only touched and not satisfactorily explained, price.² The French economist and statesman, Anne Robert Turgot, who accepted Galiani's value theory, filled this empty spot in an unfinished paper: "Valeurs et Monnaies."³ Turgot uses a simplified model for the explanation of the exchange mechanism. Two men are living on an isolated island, one, A,

¹ "Value, then, is a ratio; and this is compounded of two ratios, expressed by the names UTILITY and SCARCITY." Galiani, *Moneta*, *op. cit.*, translation Monroe, p. 283.

"I believe that the value of human talents is determined in the very same way as that of inanimate things, and that it is regulated by the same principles of scarcity and utility combined." Galiani, *Moneta*, translation Monroe, p. 292.

"Be it noted however, that scarcity is not to be reckoned according to the proportion in which talents are produced, but according to the numbers that reach maturity; hence the greater the difficulty of developing a talent to a high degree worthy of it, the greater is the price." Galiani, *Moneta*, translation Monroe, *ibid.*

"Hence arose exchange and interest, which are brothers. One is the equalizing of present money and money distant in space, made by an apparent premium, which is sometimes added to the present money, and sometimes to the distant money, to make the intrinsic value of both equal, diminished by the less convenience or the greater risk. Interest is the same thing done between present money and money that is distant in time, time having the same effect as space; and the basis of the one contract, as of the other, is the equality of the true intrinsic value." Galiani, *Moneta*, translation Monroe, p. 302.

² Galiani only says that "price follows scarcity." Monroe, p. 297.

³ Anne Robert Jacques Turgot, Baron de L'Aulnes (1727-81), "Valeurs et Monnaies," *Œuvres de Turgot*, ed. Daire, Vol. I, Paris, Guillaumin, 1844, pp. 72 *et seq.* See also *Œuvres de Turgot*, ed. Gustave Schelle, Paris, Alcan, 1919, "Valeurs et Monnaies," Vol. III, pp. 79 *et seq.* The following quotations are all from the Schelle edition. R. Schelle considers it possible that Turgot wrote the paper about 1769. It should be published in Abbé Morellet's dictionary: *Dictionnaire du Commerce*. A prospectus of this dictionary was published in 1769. The dictionary itself was never finished. See Schelle, p. 79 footnote (a).

has maize, the other, B, owns kindling wood.¹ A freezes to death if he has no kindling wood, and B is starving if he has only wood, but no food.² A is willing to barter his maize for kindling wood and B likes to exchange his wood for maize. Both plan to keep a maximum of their own commodity and to get a maximum of the other's good.³ A wants to give 3 measures of maize for 6 armfuls of wood and B wants to exchange 6 armfuls of wood for 9 measures of maize. Since these personal estimations cannot be realised in exchange, A and B have to give more of their own product and/or to demand less from the other. Eventually a point of agreement is reached, where the individual value of the offered good is still lower than the value of the commodity received. If the exchange rate is 4 measures of maize to 5 armfuls of kindling wood, A prefers 5 armfuls of kindling wood to 4 measures of maize, and B prefers 4 measures of maize to 5 armfuls of kindling wood.⁴ If we have two wood-collectors instead of one and two maize-owners instead of one the situation will be essentially not different from the isolated exchange between two persons. If one maize-owner tries to undersell the other, the two who stored up wood will turn to him and raise his price. As in the case of an isolated exchange, the result will be one rate for all barterers between the four partners.⁵ According to Turgot, both exchange models prove that barter leads to a higher total utility for each partner than isolated production of one single commodity.⁶ Any reader acquainted with our literature knows

¹ Turgot, ed. Schelle, pp. 89 *et seq.* I have added the letters A and B for the sake of simplification and clarification.

² "... mais le bois que l'un pourra consommer dans un mois lui deviendra fort inutile si, dans cet intervalle, il meurt de faim faute de maïs, et le possesseur du maïs ne sera pas plus avancé, s'il est exposé à périr faute de bois; ..." Turgot, ed. Schelle, p. 90.

³ "c'est l'intérêt de garder chacun le plus qu'il peut de sa denrée, et d'acquiescer le plus qu'il peut de celle d'autrui." Turgot, *ibid.*

⁴ "Au moment où l'échange se fait, celui qui donne, par exemple, quatre mesures de maïs pour cinq brasses de bois, préfère sans doute ces cinq bras aux quatre mesures de maïs; il leur donne une valeur estimative supérieure; mais, de son côté, celui qui reçoit les quatre mesures de maïs les préfère aux cinq brasses de bois." Turgot, *ibid.*, p. 91.

⁵ Turgot, ed. Schelle, pp. 97, 98.

⁶ "Il est bon d'observer ici que l'introduction de l'échange entre nos deux hommes augmente la richesse de l'un et de l'autre, c'est-à-dire leur donne une plus grande quantité de jouissances avec les mêmes facultés. Je suppose, dans l'exemple de nos deux sauvages, que la plage qui produit le maïs et celle qui produit le bois soient éloignées l'une de l'autre. Un sauvage seul serait obligé de faire deux voyages pour avoir sa provision de maïs et celle de bois; il perdrait, par conséquent, beaucoup de temps et de fatigue à naviguer. Si, au contraire, ils sont deux, ils emploieront, l'un à couper du bois, l'autre à se procurer du maïs, le temps et le travail qu'ils auraient mis à faire le second voyage. La somme totale du maïs et du bois recueilli sera plus forte et, par conséquent, la part de chacun." Turgot, ed. Schelle, p. 93.

that Turgot's explanation is almost identical with the theory of isolated exchange presented by Menger and by Wicksell.¹

With Galiani and Turgot subjective valuation becomes the keystone for a method of thinking. This theory had to be defended against the new classical system, which was based on labor costs. The defense of Galiani, his followers, and his friends was taken over by Condillac.² According to him, costs are not the cause of value, but the value is the cause of costs.³ Condillac's counter-attack against the classical cost theory is the parting shot of an army falling back. Before 1800 Italian and French writers were already drawn into the orbit of British classical thinking. An attempted synthesis of utility value and cost theory was the main object of later Italian writers.⁴ Yet before decadence set in they had thoroughly explored the utility concept and its consequences, although they were still not able to explain the value of a concrete unity. Galiani can easily show why gold is normally more valuable than bread. Yet why one slice of bread has the same value as another slice, why one ounce of gold has the same value as another ounce cannot be calculated with the help of Galiani's instruments.

No doubt the Italian economists were often near the correct solution, but they did not reach it.⁵ They cannot grasp it, because they lack the marginal method.

The first step in the exploration of the marginal value had been taken outside the camp of the economists proper. In 1738, twelve years before Galiani's work was published, the mathematician Daniel Bernoulli, writing mainly about games of chance,

¹ Carl Menger, *op. cit.*, pp. 186 *et seq.* Knut Wicksell, *Lectures on Political Economy*, translated by E. Classen, London, Routledge, 1946, Vol. I, p. 49.

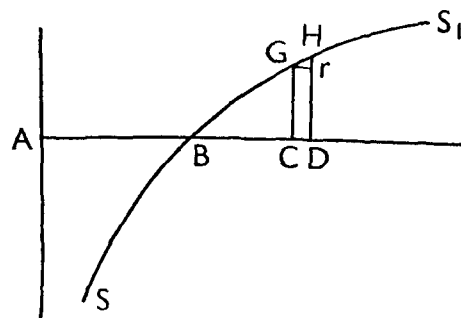
² Etienne Bonnot de Condillac, Abbé de Mureaux (1714-80), "Le commerce et le gouvernement," *Œuvres complètes de Condillac*, Vol. IV, Paris, Houel, Year VI (1798). Condillac, *Œuvres philosophiques*, Vol. I, Texte établi et représenté par George Le Roy. Corpus Général des Philosophes Français, Publié sous la direction de Raymond Bayer, Paris, Presse Universitaire de France, 1947, "Traité des sensations" (1754), pp. 221 *et seq.*

³ "Une chose n'a pas une valeur, parce qu'elle coûte, comme on le suppose; mais elle coûte parce qu'elle a une valeur." Condillac, *Œuvres complètes, op. cit.*, pp. 14, 22.

⁴ Graziani, in his *Le idee economiche*, mentions the following Italian economists of the beginning of the nineteenth century: Francesco Isola, Melchiorre Gioia, Adeodati Ressi, Carlo Bosselini and Giovanni Romagnosi, who try to combine, in one way or another, utility value with cost theory.

⁵ Very clearly expressed by A. Carino Canina, who praises the clearness and exactness of Montanari's thinking, yet Canina knows very well that Montanari never touches the marginal principle. "... senza però, che si accenni al principio marginalista." A. C. Canina, "Valore e rarità nel pensiero di G. Montanari," *Istituto Lombardo di Scienza e Lettere*, Milano, Vol. LXXVII, 1943-44, p. 166, footnote 1.

isolated the theory of marginal value, especially the value of money.¹ In exploring marginal value Bernoulli assumes that a fortune will be increased by successive small increments.² Given these conditions, it is very likely, so he continues, that the value of an additional amount is inversely proportional to the pecuniary possessions which a person already owns.³ Consider that one person, so Bernoulli continues, has a fortune of 100,000 ducats and draws from it an income of 5,000 ducats, and another poorer person has a fortune of 100,000 half-ducats, and draws from it an income of 5,000 half-ducats, then for the wealthier person one



The presentation of marginal valuation according to Daniel Bernoulli (Bernoulli's figure is somewhat simplified).

ducat is worth as much as one half-ducat for the poorer person.⁴ This is indeed a bold conclusion, which can be drawn only if an interpersonal measure for the utility reaction of different persons can be discovered. Whether such a common standard can be found is still an open question.

Obviously the law of diminishing utility⁵ is not only basic to this interpersonal comparison but also to Bernoulli's very important mathematical analysis, which explains individual estimations. In Bernoulli's chart, the fortune of a person is

¹ Daniel Bernoulli, *Versuch einer neuen Theorie der Wertbestimmung von Glücksfällen*. Edited by A. Fringsheim under the title "Die Grundlage der modernen Wertlehre," Brentano und Leser, *Sammlung älterer und neuerer staatswissenschaftlicher Schriften des In- und Auslandes*, No. 9, Leipzig, 1896. (Original edition and title "Specimen Theoriae Novae de Mensura Sortis" 1738, not used.) About Daniel Bernoulli see *Allgemeine Deutsche Biographie*, Vol. II, Leipzig, 1875, p. 478, Daniel Bernoulli (N. Cantor).

² Bernoulli, *Versuch*, *op. cit.*, p. 27, ¶ 5.

³ "Valde probabile est lucrulum quodvis semper emolumentum afferre summae bonorum reciproce proportionale," Bernoulli, ¶ 5, see "Die Grundlage," *op. cit.*, p. 13.

⁴ Bernoulli, ¶ 6, "Die Grundlage," *op. cit.*, p. 30.

⁵ It is probable, but it cannot be proven, that his residence and studies in Italy brought him in contact with economists who taught him the elements of economic value.

represented on the abscissa starting in A; the value of gains is represented by the ordinate. A person starts with the fortune AB. To this fortune will be added the amount BC; the utility of this additional amount is presented by the segment BG of the curve SS. Now an infinitely small amount of money is added, CD. The additional value of CD is Hr. Hr is the marginal utility of CD.¹ So Daniel Bernoulli combines the law of decreasing utility with the higher calculus and discovers the marginal utility.² Similar ideas can be found in Buffon³ and Laplace.⁴ Neither Buffon nor Laplace, during the end of the eighteenth century and the beginning of the nineteenth century, essentially improved Bernoulli's discovery. The most important author in this group is undoubtedly Bernoulli. But even he cannot offer a complete analysis of marginalism; he finds the marginal value, but he does not see that the marginal value is identical with the individual values of all the other pieces in a group of equal commodities. Even so, his achievements are important. He, like his French and Italian contemporaries, added new parts to the slowly emerging structure of a subjective value theory. How far all these writers had progressed in solving the riddle of marginal utility can be seen from the following table:

1. Value is dependent on utility and scarcity. (Adopted from Aristotelism and Thomism by Davanzatti, Montanari, Galiani, etc.)
2. Essential for economic valuation is the concrete and not the abstract utility. (Galiani in opposition to the Doctors.)
3. Concrete utility is determined by the law of diminishing utility. (Mentioned earlier by Aristotle but much more clearly expressed by Davanzatti, Montanari, Galiani, etc.)
4. The value of the last piece is the marginal utility. (Bernoulli.)
5. Utility and scarcity decide not only the value of consumer goods but also the value of the factors of production.

¹ Bernoulli, ¶ 7, "Die Grundlage," *op. cit.*, p. 32.

² For this reason I cannot agree with Schumpeter's remark that Thünen was the first who used "the calculus as a form of economic reasoning." Joseph A. Schumpeter, "Review of the Troops," *Quarterly Journal of Economics*, Vol. LXV, May 1951, p. 151.

³ Buffon, "Essai d'arithmétique morale," *Oeuvres complètes*, 12th vol., Paris, s.d., pp. 155 et seq., especially pp. 168-9. Buffon discussed the problem apparently about the same time that Daniel Bernoulli wrote his essay, *ibid.*, p. 170, and footnote p. 171.

⁴ Pierre Simon, le Marquis de Laplace, *Essai philosophique sur les probabilités*, Paris, 1825.

The consumer's choice is the final factor of economic action.
(Galiani, Condillac.)

6. Prices are the outcome of individual comparison
between goods. (Turgot.)

So the Italo-French school has gone a long way from the teaching of the Doctors, and even Aristotle is surpassed at least in some respects. Yet it was the tragedy of these writers that they wrote in vain, they were soon forgotten. No scholar appeared to make out of these thoughts the new science of political economy. Instead, the father of our economic science wrote that water has a great utility and a small value. With these few words Adam Smith had made waste and rubbish out of the thinking of 2,000 years. The chance to start in 1776 instead of 1870 with a more correct knowledge of value principles had been missed.

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REVIEWS

The Theory of Economic Policy in English Classical Political Economy. By LIONEL ROBBINS. (London: Macmillan, 1952. Pp. vii + 217. 15s.)

It can hardly be an ill wind that brings us a book from Professor Robbins. Yet his reason for writing it is depressing enough. He is distressed at the neglect by economists of the history of economic thought. "In most centres of study, this kind of knowledge has come to be regarded as a very unimportant embellishment, as inessential to the economist as a knowledge of the history of chemistry is said to be inessential to the chemist." What he particularly deprecates is misrepresentation of the classic economists, especially as to their views on social policy.

"Popular writing in this connection is far below the zero of knowledge or common decency. On this plane, not only is any real knowledge of the Classical writers non-existent but, further, their places are taken by a set of mythological figures, passing by the same names, but not infrequently invested with attitudes almost the exact reverse of those which the originals adopted."

This contrast Professor Robbins then proceeds to drive home by a felicitous review of their actual attitudes to economic reform—using copious and charming quotations. The method of the argument is analytic, not historical, as the chapter headings show. They trace the classics relative to the system of economic freedom, the economic functions of the state, the conditions of the people, and the attitude to socialism. Adam Smith, Hume, Bentham, Ricardo, Malthus, James Mill, McCulloch and Senior make up the majestic choir of witnesses.

That specialisation has increased, is increasing, and ought to be diminished, few would deny. Its excesses may be the gravest menace of our times. And there is little doubt that this trend has injured the historical study of economic thought. But if remedy is to be sought, we need to know rather more exactly whom Professor Robbins is attacking. If it is the universities, then over-specialisation is the main evil there. As one of "an earlier generation," I have not felt the inadequacy here so brutally as is suggested. But this may be due to limited experience. Certainly, the remedy is clear. For reasons well understood by all scholars, history is a vital corrective to analysis,

and the only safeguard is that university curricula should be properly infused by history of economic thought. It should certainly be a vital chapter in all first-year courses—it is an obvious introduction. Beyond this, it should at least be a special subject, though the real solution is probably rather that *all* teaching should be constantly tempered by the astringent lessons of the past. The arrogance of the intellect especially needs such correction, sadly so to-day in this age of science-idolatry. What better correction than feeling on our cheeks the breath of the great men who gave our science its unique form? A generation which has seen the influence that could spread from Lord Keynes's personal impact should realise the dominance of persons over our thought. We are too blind to our own fashions, accepted by the unsophisticated as Holy Writ, especially so to-day if it is stated as a formula of symbols. Professor Robbins's protest is broadly a true bill. For, reading the old masters, we cannot miss their more blatant absurdities. Our own are certainly as crude, but we cannot see them. Only history may generate a proper scepticism.

Universities, however, are not specifically mentioned; and the only academic individually dealt with is Lord Lindsay of Birker. This parsimony, inevitable for space reasons under the analytic method, has its own special difficulties, for some slight appeal to historical fact and sequence must be made. But, even in the most patient history, mere mortals cannot escape bias. We are constitutionally, by creation and structure, each and all biased. If so, the issue for science is to trace and assess our emotive masters and their influence. So it is with some anxiety that an old pupil of Lindsay comments on the quotations here from his *Karl Marx's Capital*. In these quotations, if taken by themselves, Lindsay is undoubtedly unfair. They are unscholarly, as being unspecific, and unbacked by reference. Indeed, Lindsay's practice of referring constantly to "the early economists" or the "individualists" is just one of those ways in which bias influences us, which we should scientifically study. The cynic will be amused by the consistency with which he here breaks the critical principle he himself suggested. "The economic writers of the early nineteenth century . . . had not made this distinction" (between "scientific determination of facts" and "justification or condemnation of these facts"). "They were reformers and scientists at the same time" (p. 57). Yet it is an unfortunate implication of the analytic method that it has to isolate detached quotations. For it is difficult to avoid the impression of an attack

on the person. It may then be noted that the general tone of this little book (published in 1925) is much more judicial than these emotive quotations, and that the original lectures were written for an Independent Labour Party audience (no excuse, but who can throw stones at this glass-house?) Lindsay's sympathies were well known, and he was not a specialised economist. These remarks do not excuse the passages quoted. The query is rather as to the true aim of science. The correction of distorted passages (or persons) would be endless. The important issue is just how and why scientists themselves are biased, and the tracing of specific effects. *Karl Marx's Capital* certainly makes here a profitable guinea-pig. But who would not?

Probably, however, Professor Robbins's target is not so much the Universities' products as that loose drift of opinion and polemic which is included in the trend of thought or the spirit of the age. It finds chaotic expression in leading articles, in essays in journals mostly addressed to specific issues, and especially in institutional and political speechifying at all levels. Here, people are in a hurry, and usually have an axe to grind. The most effective mode of argument is to "condition" one's audience, and ease one's proposition by raising a sympathetic emotional breeze. Here, attack on some accepted whipping-post remains (in spite of the Nazis) the easy, obvious and effective gambit. (This is, of course, not a high level of culture, as Professor Robbins suggests (p. 5), but our day-to-day public thinking has never generally speaking achieved anything much better.) Now, the time-honoured whipping-post in matters of economic policy has long been certain *laissez faire* economists. Their only possible classical source can be found in Mill's economic man, though this hypothesis amounts to no more than saying that if we propose to think consistently about economic conduct it will be only sensible to assume that so far as they act economically men act rationally and consistently. (Perhaps it is a pity Mill did not put it that way.)

If this is a correct description, can academic economists really do anything about it directly? Must they not simply keep steadily to their own task, trusting to the long view and the slow drip of the truth? "That insidious and crafty animal, vulgarly called a statesman or politician," in fact all who plead a special case, we must always have with us. Indeed, in practice we all are politicians.

This does, however, raise an issue as to the true value of knowing how economic thought has developed. Should we know

its history to help us by analogies with our economic problems of policy to-day? Or should this subject be regarded simply as one essential chapter in the history of ideas—as truth for its own sake? Are we dealing with applied economic analysis or with economic history? Professor Robbins's approach is mainly analytic, as is proper for issues of policy. But it is obvious enough that we ought to pursue both aims, and indeed the dangers of the more analytic approach can be illustrated from Professor Robbins's own treatment, though only his own ill-nurtured neophyte is in much danger of falling into these traps.

Consider his treatment of the eighteenth- and nineteenth-century economists (excluding Senior) as all "utilitarians." In the analytic sense this is justified: for to all of them the final criterion was the usefulness of the consequences. And Hume (writing his *Treatise* at twenty-six) is the *enfant terrible* of the experimental method in the social sciences. Yet historically there are utilitarians and utilitarians. The word's elasticity has been abused. Mr. Plamenatz in *The English Utilitarians* (pace the Scots) has written, "The classical economists, especially the three most famous of them, Adam Smith, Malthus and Ricardo, were utilitarians. They believed that the proper end of government is the greatest happiness of the governed" (p. 111). On this definition, it is difficult to see how an economist can be anything but a utilitarian. For by definition he deals with means, not with absolutes. And any broad definition of the "end of government" must at least include the general happiness. Such an *omnium gatherum* can lose all sense of discrimination and scientific usefulness. The fact is that Hume and Smith were of the earlier eighteenth century, Bentham, James and John Stuart Mill of the Age of Reform. The earlier age saw a stable society; and Hume and Smith had the subtle, slightly cynical, patient minds typical of a stable, cultured, rather aristocratic society. They were incapable of the psychological and ethical crudities of the unphilosophic Bentham and the pedantic James Mill; crudities congenial to a rough if vigorous chapter in our social history. Through Bentham and John Stuart Mill emerged the philosophy of the newly powerful bourgeoisie, practical, at times rather vulgar, with rough edges, but admirably fitted to create the structure for a broader sharing of social sympathies, rights, responsibilities and utilities. Thus, while we may marvel at the inadequacies of the basic Benthamite logic and psychology, we should recognise in them the foundations of our own "Welfare State." Hume and Smith could not have perpetrated Bentham's

logical howlers. They were careful, cool, patient, very wily thinkers. You can never pin Hume down to a denial of the original nature of benevolence, or to an exclusive definition of "pleasure" as the end. So also with Smith's treatment of sympathy; and with his "impartial spectator" he combined with Hume to prepare the way for Kant. Here they inspired a rarer and richer stream of social thinking for all the future than the Benthamites ever could claim. And, further, Hume and Smith could laugh at themselves, such laughter as cleanses all priggishness. Not so James Mill; he was never amused at his own theories, though surprisingly his son tells us he was "a hearty laugher."¹ Yet the older masters have their relative limitations. Professor Kemp Smith has written of "the defects of Hume's qualities, characteristic of his time as well as of himself—his limitations of interest and of insight, his inability to have even the beginnings of any genuine understanding of the twice-born type, such as St Paul or Calvin."² This would apply to Smith also. And indeed Bentham and James Mill were no mystics. But they had practical interests and working sympathies which were not relevant in the earlier society.

The difference comes out specially in their different views of society. Here we have a movement like the Hegelian dialectic. To Hume and Smith a society was the natural unit, the matrix in which these two most clubbable bachelors naturally lived and thought. In re-reading Hume I have been especially struck by his consistency, when writing of utility, in always stressing usefulness for *society*—"human" or "civil society"—never the individual, as the unit which utility serves. It is strange that this contrast with the equally consistent Benthamite concentration on utility for the *individual* has not been more stressed. The latter is an astonishing simplicity to us who have benefited by the factual developments in social biology. The explanation may be partly accidental and biographical; and if so we see again how theories can be understood only in their settings. Bentham happened to be interested primarily in legal reform, especially criminal law, and the criminal at least has to be individually treated. (There was also, of course, the long tradition of egoistic hedonism in English thought. This Bentham preferred to adopt—and out-flank.)³ That Bentham found James Mill at hand to

¹ *Autobiography*, p. 86 (World's Classics). The letters from James Mill to Ricardo add some support to this. On the personal level Mill is there often facetious.

² Hume, *Dialogue concerning Natural Religion* (Oxford), p. 3.

³ Cf. Ross, *Foundations of Ethics*, p. 274.

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tidy up his "system" is also no doubt an accident: an accident that had deep influence on the growth of our economic theory. For the elder Mill had a mind like a sieve of very wide mesh and harsh wiring. Through its large vacuities fell most of the richness and also the real difficulties of our actual lives—difficulties to which Hume and Smith were acutely sensitive. What was left—all that mattered in Mill's view—was simple enough to be explained by that astonishing formula, sensations plus association of ideas (copies of sensations) plus habit.¹ This was the accepted solvent of the Benthamite school; and its strong sway has dominated the assumptions of economic theory almost to our own day. Its clear simplicity was an admirable platform for practical reform on individualistic lines, and that was just what the nineteenth century wanted.

The analyst might then ask, does it much matter? The Benthamites did what was necessary, even with their false view of society; it might even be argued they did it better that way. The policy maker is, however, the better of being chastened by the salt lessons of history—how else teach our politicians humility, proportion, caution, qualities in which the Benthamites did not excel? And further, quite apart from the question of the truth, the policy maker will create fatally false analogies if he transfers the assumptions and conclusions of a past age to the present. Even as between the eighteenth and nineteenth centuries, we should note how Hume and Smith were concerned rather to avoid interference with the natural order of society; whereas the Benthamite approach is to deal with individual abuses by positive legislation. For their individualism, no natural harmony could plausibly exist. They had to create it, and felt they could, hence their much greater exuberance in detailed reforms. To Hume and Smith the "natural" remained a word of final praise.

We to-day have, however, different problems. We are specially perplexed by the proper definition of responsibilities, economic and political. Here what we have to deal with is all kinds of groups with their fusions and diffusions. For these issues an individualistic psychology and economics are largely irrelevant. They help to supply a start and a method. But our main problems can be solved by no such analogies, simply because they have been created by the growth of novel institutions, knowledge and strains. But especially, the view latent in Hume and Smith that we have group and social roots and loyalties

¹ Worked out, with all his exact and sterile logic, in his *Analysis of the Human Mind*.

creates the foundation for a conviction of responsibility, and room (in Hume rather limited) for a theory of personal political obligation. These are essential for any real social and political theory; as to which we find a constant awareness in Hume and Smith. The Benthamite *theory* had no place for them. It assumed as a matter of common sense that it was rational to seek the pleasure of others, and this was enough in *practice*. But, if all the so-called utilitarians had worked out the theory as James Mill (who so gravely influenced Ricardo) stated it, utilitarianism could have produced only a Hobbesian sovereign, or worse.¹ No sense of obligation, political or otherwise, can breathe that air.

History, then, deprecates this tendency to cover these different worlds with the Utilitarian label. Professor Robbins does some justice to this:

"Certainly it is in the Humean rather than the Benthamite sense that we may claim to label the entire Classical School as utilitarian in outlook. The only possible exception is Adam Smith, who had a moral philosophy of his own which in some respects appears to be in contrast with the utilitarian outlook. But here, as so often, Smith's apparent principles are belied by his practice" (p. 178).

His practice, one must presume, is the *Wealth of Nations*. But there Smith is being a political economist, and his job is to deal only with consequences. It should not be forgotten that all the writers of his day, many of them close friends, progressed over the same grand tour of speculation. They started with Natural Theology went on to Moral Philosophy, with Logic, then to political economy (if it was separated) and to Jurisprudence. This is as true of Francis Hutcheson, Adam Ferguson and Dugald Stewart as it is of Smith and Hume—it was indeed the accepted practice of an unspecialised era. And though Smith found his amplest air in the *Wealth of Nations*, this is just one of those unpredictable leaps of the human spirit. It is perfectly easy to reconcile his thought there with the rest of his writings: indeed, he would have regarded his economics as only one chapter, if the brightest, in his whole speculation. This was true of all of them.

The issue appears again in Professor Robbins's treatment of the felicific calculus. He quotes Bentham's interesting fragment on the "Dimension of Happiness." "'Tis in vain to talk of

¹ James Mill was more conscious of class frictions than any of the Classic writers; but his ideal was as large a middle class as possible, relatively—*Elements of Political Economy*, pp. 48 *et seq.*

adding quantities which after the addition will continue distinct as they were before, one man's happiness will never be another man's happiness" (p. 180). It is of course easy, and rather fruitless, to collect head-on collisions in Bentham's logic; but he placed the felicific calculus (which he sensibly thought should be estimated through money prices)¹ in the centre of his *theory* (*Principals of Morals and Legislation*, Ch. IV). In James Mill the touchstone of quantity of pleasure takes strategic and consistent control. All is reduced to pleasant consequences which can be quantified. And John Stuart Mill's breakdown (*Autobiography*, Ch. V) was essentially over this issue, though the seat of the disease may have been his father. For the "object other than their own happiness . . . followed not as a means but as itself an ideal end,"² such an object cannot be treated philosophically as a quantity; and this disrupts the Benthamite logic. So I find myself in some difficulty when Professor Robbins remarks "the term (felicific calculus) naturally suggests a most pretentious apparatus of measurement and computation. But in fact this is all shop window" (p. 181). If by shop window is meant only the pretentiousness, all would agree; as also with the remark "it is to be noted that David Hume, whose procedure was essentially similar, never indulged in such flourishes." David was *pas si bête*. But the fact remains that the reduction of all human values to pleasure quantities is central and exclusively so, in all the classic texts of the Benthamite writers; whereas it is far from exclusive in Hume, and is not even central in Smith. No achievements in practical reform can alter the feeble inadequacy of Benthamite theory. Utilitarian theory in its broad relevance does not, of course, stand or fall by quantification of pleasure. But the Benthamite interpretation of it certainly does.

A word on two smaller issues. As to Ricardo, our author, with his clean-cutting knife, disposes shortly of the wages-profits see-saw issue. "Conceived as a statement regarding *proportionate shares*, this proposition (that wages cannot increase save at the expense of profits and *vice versa*) is a truism" (p. 84). Many economists, remembering their weary hours over this tangle, will rub their eyes. Is it really so simple as that? As a matter of abstract statics, perhaps so. But was Ricardo interested in this abstract museum piece? His usual line is like this opening sentence to Chapter XXI on "Effects of Accumulation on Profits and Interests": "From the account which has been

given of the profits of stock, it will appear that no accumulation of capital will permanently lower profits unless there is some permanent cause for the rise of wages"; and again "it may be added that the only adequate and permanent cause for the rise of wages is the increasing difficulty of providing food and necessities for the increasing number of workmen" (p. 197, Everyman). But here one sees the lurking shades of diminishing returns and the pressure of population. Can one ever detach Ricardo's treatment of profits and wages from these grim destinies? This would be Eden without the serpent. But *with* them the see-saw at once loses its arithmetic simplicity. For diminishing returns and rates of population growth involve the contemporary view of the Wages Fund (which derived from food supply)¹; and also therefore that equally tortuous maze, productive and unproductive labour. If this is granted, however, Professor Robbins certainly gives us the proper analytic formula with which to approach what is an extremely tangled historical skein.

Lastly and leastly, when Professor Robbins says "He [Adam Smith] had little use for the ancient universities, where he thought the fact that the teachers were not paid by results had long ago led to their having 'given up altogether even the pretence of teaching,'" he could have been more explicit. Smith is here referring specifically to "the University of Oxford" (Vol. II, p. 247). He would not have said this of the Scots universities (which some young students may regard as "ancient"), for there the professors collected fees from their students. And Smith described his years in Glasgow as "by far the most useful and therefore by far the happiest and most honourable period of my life." Oxford he knew as Snell Exhibitioner at Balliol; and his remarks are mild compared with those of Gibbon. (Oxford is of course well aware that it was not at its best in those days.)

What has been written has been intended to suggest other slants and points of view in this immense field. Professor Robbins has worked marvels in two hundred pages. But he could hardly follow more than one analytic method. In that vein he has at once done us a unique service and offered models of charm to the uninitiated. The graceful art of pointed quotation here finds a master. On Adam Smith (p. 18) we find him warming up. In the passages from Robert Owen's committee and from Senior he will find single masterpieces which his so far benighted memory will retain. And in the chapter on the

¹ Cf. James Mill, *Elements of Political Economy* (1821), p. 6. The sequence and logic are at least clear here, especially at pp. 56 *et seq.*, also p. 185.

¹ *Jeremy Bentham's Economic Writings* (ed. W. Stark), Vol. I, p. 117.

² Mill, *Autobiography*, p. 120 (World's Classics).

socialism of John Stuart Mill we are given an example of reasoned interpretation at its best. The theme is fascinating. A re-reading of the Autobiography and Professor Hayek's *Correspondence* together with the relevant texts in Mill's treatment of socialism may well suggest different interpretations to different temperaments. The one that appeals to your reviewer is perhaps too cool for our ardent but uninstructed undergraduate. But—may not this dear great man have been simply infatuated when he wrote the third edition (1852) in which Professor Robbins so rightly sees some heightening of socialist fervour as compared with even the first edition (1848), and again with the chapters on Socialism written some years after his wife's death and published posthumously. (Mill was married in 1851, so that infatuation would be at its height when he was preparing the third edition.) Mill uses the language of infatuation in the Autobiography about his wife's control of his writing. He lacked the humour that would have protected his intellect from the exaggerations of passion. He noted himself how apt he was to generosity as to the opinions of others (and to underestimate his own gifts, as Professor Robbins so vividly illustrates). Was not love here characteristically blind? One soon notes the restoration of his judicious poise in the chapters on Socialism, written in 1869. How different from the almost evangelical note in passages introduced on Socialism into the third edition! However it may have been, few fresher examples could have been given of the impact of private lives on the course of thought.

Here then is richness for the young student. He may well be as charmed by it as was John Stuart Mill by Harriet Taylor, though we hope his sense of humour will survive. Older readers will be grateful for the quiet stimulus to exercise the calmer judgment, to which Mill also at last attained, on beautifully presented issues.

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The Economic Blockade. Vol. I, 1939-41. By W. N. MEDLICOTT. History of the Second World War, United Kingdom Civil Series, edited by W. K. HANCOCK. (London: H.M.S.O. and Longmans, 1952. Pp. xiv + 732. 35s.)

THIS is, within its chosen limits, a very competent record. It is smoothly written, with an air of detachment, but with good selection and sensible judgment. It covers the period from

September 1939, when the Germans made war on the Poles and their Allies, till June 1941, when the Germans made war on the Russians as well. It is limited to that part of the work of the British Ministry of Economic Warfare which dealt with the economic blockade of the enemy.

I was too much mixed up in all this, and in too tense a time, to be able to review this book quite impersonally. I was Minister of Economic Warfare from May 1940, when the Churchill Coalition Government was formed, until February 1942, when I became President of the Board of Trade. This book, therefore, covers more than half the term of my stewardship. And, indeed, I was in touch with the Ministry before I became Minister. At the outbreak of war Neville Chamberlain invited the Labour Party to join a Coalition under his Premiership. We refused, but promised full support from outside the Government to the war effort. It was arranged that some of us should keep in touch with particular Departments, so that we might be collectively well informed. Under this plan I took on the Air Ministry and the Ministry of Economic Warfare. At the latter I saw, from time to time, not only the Minister, Mr. (now Sir) Ronald Cross, but several of his liveliest officials. These included Major (now Sir) Desmond Morton, who had had most to do with the pre-war planning of the Ministry, "inspired by the offensive spirit and a sense of innovation," as Professor Medlicott truly says; also a very able young economist of New College, Oxford, and University College, London, named Hugh Gaitskell.

I soon became greatly dissatisfied with the war effort of this Ministry and of other departments associated with its work, including the Foreign Office and the Admiralty. There was, I judged, too much timidity and hesitation in applying the blockade, and in various other related activities which came later within my Ministerial responsibility. I made a number of speeches to this effect, both in Parliament and outside. I declared that the blockade was "leaking like a sieve." I urged, in particular, stricter control of imports into Italy, much of which obviously went through to Germany. And I urged, even more vehemently, that we should mine Norwegian territorial waters, through which, from Narvik, ships slunk along, dodging our blockade, carrying cargoes of Swedish iron ore to the Germans to be made into weapons to kill our friends and allies. I wanted these ships sunk by our mines or driven out to sea, so that our naval patrols could pick them up.

When Mr. Churchill formed his government, "of all the toughs and all the talents" as someone called it, he said to me on the tele-

phone, "You've been a keen critic of our Economic Warfare policy. I should like you to take it over." Not till later did I learn that what I had been saying publicly about the Swedish iron-ore ships, he had been saying, repeatedly but without avail, within the Chamberlain Cabinet.¹

After long delay, the mines were laid only on April 8, the eve of the German invasion of Norway, too late to do any good.

I took over the Ministry in the days of Dunkirk and the Fall of France. "Live each day as though thy last" was then the rule of life of us all. All Ministers slept each night in, or, if there was a suitable shelter, beneath their offices.

I told my officials that, as they would know from my public speeches, I considered that, so far, the economic war had been half-hearted and ineffectual. No doubt through no fault of theirs. There had been "too much law and not enough war." But now we were going all out. Any of us might be killed any day. "Nothing is unthinkable," I told them, "except defeat." I am still amazed by the failure of the German Air Force to have a real go at Whitehall and Westminster at that most favourable moment in their war. We were all expecting it. And an attempt at invasion, perhaps by paratroops, as well.

In June 1940, "The German victories," says Professor Medlicott, "produced no mood of defeatism in the Ministry of Economic Warfare; the mood was far rather one of fresh confidence and release, with the opportunity of total economic war opened up by the new reality of total danger" (p. 411). In Europe both our allies and the neutrals were vanishing; the field was clearing. Soon, as the Cockney said, we should be in the final, and playing on our own ground.

In crisis we streamlined government. I went straight to the Prime Minister when I met trouble. In my first days I reported a Civil Servant in another department direct to the Prime Minister for "obstructing the war effort." He had resisted some demand of mine—I forget now what. I sent his Ministerial chief a copy of the Minute I had already sent to the Prime Minister. All most irregular! But the obstruction ceased. Professor Medlicott says that, as regards the blockade, I pursued a "hard-boiled policy," and showed "great singleness of purpose." This is quite true. I judged that my task was to strangle Hitler, and all his accomplices, using all the economic devices available to me, and claiming all support from all my Ministerial colleagues. If there were objec-

¹ See Winston Churchill, *The Second World War*, Vol. I, *The Gathering Storm*, Chapters 9, 10 and 11.

tions, or difficulties, it was not for me to raise, or even to admit, them. Others would do that.

There were, of course, many keen conflicts in Cabinet, in correspondence or conference between Ministers, and between officials representing Ministers, and often brisk internal discussions before departmental policy, to be fought for against other departments, was decided. Professor Medlicott lets a number of these cats, with claws still sharp and militant, out of the secret bags.

For an ex-Minister, who played some part in all this, it is a strange feeling that some unknown historian has rifled all the records, read all and quoted some in this official history, of the Minister's Minutes, of his correspondence with his colleagues, of the papers he put up to the Cabinet, of the summary of the Cabinet discussions and conclusions, of the apprehensive telegrams from our diplomats abroad, even of the differences of view within the Ministry of Economic Warfare itself. To publish all this less than twelve years afterwards will certainly shock those who think that such secrets should be hushed up for ever, or at least till all the participants are dead or retired.

But, for my part, I have no quarrel with what Professor Medlicott quotes, nor with the general sense which he conveys of what went on, and who thought what, and who fought whom.

On taking over the Department, I found that my predecessor and his principal Civil Servant, the Director General, had shared *one* Private Secretary! I said I thought this a squalid arrangement. I would let the Director General keep the Private Secretary he had been sharing with the Minister, and I would have two new ones, the senior to be an economist, the junior to come from the Foreign Office. I asked Hugh Gaitskell to be the senior—in spite of Civil Service warnings that a permanent Civil Servant might be more suitable—and the Foreign Office gave me Patrick Hancock, who with the rest of our diplomatic mission had had to leave The Hague very hurriedly. And thus, with John Wilmot, now Lord Wilmot, as my Parliamentary Private Secretary, I collected, what matters very much to a Minister, a first-class private office. But, to my regret, the Prime Minister immediately took away Desmond Morton to join his personal staff.

As Professor Medlicott reminds me, in my first days I had to reorganise the Department (pp. 60–2). When France was falling, some pundits thought that our blockade must fall too. It could no longer be enforced, they said, with the Germans in control of France and the Low Countries and Denmark, and perhaps the rest

of Scandinavia and Italy too. But we argued back on this, Noel Hall playing an important part, and won, and we fashioned new weapons—navicerts, ship warrants, etc.—to meet new needs. “From the seas to the quays” was our new slogan, or “from the seas to the source.”

My Director General, Sir Frederick Leith-Ross, was a humane, intelligent and agreeable man, trained at the Treasury and with much experience of international economic and financial arrangements in time of peace. But he was never, I think, a very happy warrior, and was glad to move, with me and Hugh Gaitskell, in February 1942, to the Board of Trade.

On June 1, I appointed Lord Drogheda and Noel Hall as Joint Directors, under the Director General, “with instructions,” as Professor Medlicott says, “to re-allocate duties throughout the Ministry so as to give effect to the new emphasis on control at the source. Their plans were worked out during the first ten days of June and took effect very soon after the French collapse” (p. 62). Before deciding on these two appointments, and others which were consequential, I had asked Hugh Gaitskell to arrange a series of conferences, at one or other of which all the top dozen officials at the Ministry, and a few more, should attend and be made to talk, so that I might form quick judgments of my own about them, to supplement the views of others. I offer this tip in political science to all newly installed Ministers.

Broadly, Drogheda took Operations and Hall took Intelligence (p. 463), and both did very well. On Operations I often ended a long debate on paper with a simple Minute, “Act as proposed by Lord Drogheda.” He was always for strong action and a tough blockade, even though on many occasions, to some of which Professor Medlicott refers, the Foreign Office, or the Admiralty, or even colleagues in our own Ministry, wavered.

On Intelligence, Hall established relations of confidence and mutual respect with the Service Departments, never an easy job for a civilian. He abounded in bright ideas and ingenuities. In March 1941 we sent him to the British Embassy in Washington as Minister in charge of Economic Warfare questions, and he was succeeded in London by Geoffrey Vickers.

Professor Medlicott, though his book is long, says too little about Economic Intelligence. We collected it through innumerable channels. (At Kirkwall, our control post in the Orkneys, we persuaded an intoxicated Scandinavian skipper to hand over a roll of undeveloped photographs. One of these showed a number of recently constructed oil tanks at Petsamo. We had been

officially told they had no storage there. We had been misinformed. So we stopped their oil.) One of the chief uses of our Intelligence was to advise Bomber Command what targets would be most rewarding from an economic point of view, *i.e.*, the destruction of which would most severely damage the enemy's economic power. Another use of our Intelligence was “of its appreciations for political warfare purposes from about August, 1940” (p. 466). Both these uses will, no doubt, be more fully discussed in some other volume of this series. United States economic intelligence was badly organised in the period covered by this book, and economic-warfare problems were handled in Washington by a number of competing and overlapping agencies (pp. 500–3). All this improved later, but these weaknesses were serious when in the summer of 1940 we had to adopt the new blockade policy of “Control at Source.” To achieve even moderate success, this policy required a reasonable degree of American comprehension and co-operation, and this while the United States was still a neutral.

Professor Medlicott gives a very clear account of this problem and of our steady approach towards its solution. In Chapter XII he describes, in broad terms, the new programme for blockade by “control at source,” announced in Parliament by me and by the Minister of Shipping on July 30, 1940: (1) compulsory navicerts, (2) ship warrants and (3) compulsory rationing of neutrals. Under (1) we now claimed the right to seize goods, and possibly also the ship carrying them, unless a navicert for the goods, issued by us, was produced on demand. Some lawyers gulped. There was no legal precedent for this, but I told the Cabinet that “I am glad to say that the Attorney General, the Procurator General and my own legal adviser are agreed that, in the present circumstances, the new system can be justified” (p. 432). The United States Government acquiesced in this new procedure, though they did not officially approve it till later. This was a vital condition of success, and a most friendly neutral act!

Under (2), a ship warrant was issued to a neutral ship, whose owner had given satisfactory undertakings to comply with our economic warfare regulations and, in particular, not to sail to or from the navicert area without a ship navicert, covering all his cargo. In return he would enjoy British-controlled facilities all over the world. Otherwise these would be refused to *all ships* owned by him. Under (3) we would allow neutrals sufficient for domestic consumption, but not for re-export, and would help neutrals to obtain these rations.

"These measures," I told the House of Commons, "will greatly benefit those engaged in honest neutral trade. Delay in such trade, due to the exercise of our controls, will be much reduced. At the same time a heavy blow will be struck at those who seek to elude our controls and to carry supplies either to or from the enemy. Our friends will be further encouraged and our enemies discomforted by some ingenious provisions which my Right Honourable Friend the Minister of Shipping will to-day announce." This was a reference to ship warrants.

Part II of Professor Medlicott's book is mainly a discussion of the application, in the next ten months, of these new principles, and particularly of the rationing of various neutrals.

In Chapter XVI on France and French North Africa, Professor Medlicott surveys several important controversies in some detail. In June 1940 the Cabinet authorised me to apply contraband control to all parts of Continental France, both occupied and unoccupied, and in July to French North Africa. But the Admiralty were unwilling to supply sufficient warships for enforcement, and some Americans wanted to pass foodstuffs through our blockade. I had a running fight with the Admiralty, and long correspondence with the First Lord, especially over "the Marseilles leak." Large supplies were entering this port, both from French North Africa and French West Africa, and it was clear that most of these were passing into German and Italian hands. Indeed, in "the winter of 1940-41 the blockade had almost completely broken down in relation to the merchant shipping passing to and from ports in unoccupied metropolitan France." "To the Admiralty warning that the Vichy navy was now escorting shipping and that interception might lead to the bombing of Gibraltar," Professor Medlicott reports that I replied that, if we "were intimidated by the third-rate Vichy escorts, it was possible that Vichy ships might be used by the Germans and Italians to carry their goods as well," and that I pointed out that most of these escorts were "purely symbolic, sloops, armed trawlers, survey ships and the like" (pp. 558-9). I got the Prime Minister's support, in a Minute he addressed to the Chiefs of Staff. "We must reassert our blockade in the straits, dealing with vessels whether escorted or unescorted. . . . We should assemble a sufficient force at Gibraltar for this purpose at the earliest date possible." If Vichy attacked Gibraltar, then Vichy itself could be bombed, "or any other place to which that caitiff government might resort" (p. 559). This action was postponed, during secret but abortive negotiations with Vichy. Thereafter, in November, the Cabinet reaffirmed the Prime Minis-

ter's view, and occasional interceptions were made. But "it was the Admiralty view throughout that interception could not be given the high degree of priority," which I demanded (p. 563). This was a simple dispute over the best allocation of scarce means. I still think they should have done more, and that they were too fearful of the risk of attack, after the Battle of Oran in July 1940, by the remains of the Vichy fleet. The American "relief agitation" to let food through our blockade, was primarily due to Mr. Hoover. We resisted it, though Lord Lothian, our Ambassador in Washington, was wobbly and had to be firmly instructed (pp. 556-7). "After a great deal of interdepartmental and Cabinet discussion," says Professor Medlicott, the Prime Minister, on August 20, 1940, "announced that it was intended to maintain a strict blockade not only of Germany but of all countries which had fallen into Germany's power. . . . Any shortage of food in Europe was due either to German exactions or to the failure of the Germans to distribute the supplies at their command. The enemy must bear the responsibility of feeding the occupied territories, but the British Government would arrange in advance for the speedy provisioning of any area which regained its freedom" (p. 551).

We successfully held this line, subject to some minor concessions, at President Roosevelt's personal request, in respect of unoccupied France (p. 573). To have given way further, or sooner, would, in my view, have strengthened the German war effort and prolonged the war.

The Ministry of Economic Warfare, as I found it, was exceedingly well staffed. There was a healthy blend of permanent and temporary Civil Servants and—not quite the same distinction—of experience and ardour. We blended distinguished lawyers and diplomats, economists and business-men. Lord Finlay presided over the Contraband Committee, Lord du Parc over the Enemy Exports Committee. There had been some retired Ambassadors helping at the start. By the time I arrived most of these had disappeared, but we now had some of the best younger men from the Foreign Service.

How important a factor in final victory was Economic Warfare? Professor Medlicott is inclined to play it down. Close estimates are impossible, but my own belief is that the total activities of the Ministry, including some not mentioned in this book, substantially weakened the enemy and so hastened the end.

What are the lessons for the future? Probably none. In the

Third World War, if this horror comes, so much will be so different that, while it lasts, historians will have a very low priority.

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British War Production. By M. M. POSTAN. History of the Second World War, United Kingdom Civil Series, edited by W. K. HANCOCK. (London: H.M.S.O. and Longmans, 1952. Pp. v + 512. 32s. 6d.)

THIS volume is, by intention, an introductory volume to the whole series on war production. It does not, therefore, seek to exhaust the treatment of some of the more important aspects. Control of raw materials, labour supply to munitions industries, North American and other overseas supplies, as well as more general problems of administration, finance, factory building, design and development will all have individual treatment in other volumes. Its purpose is to focus the problems as a whole and to bring out the broader issues of the relation of munitions supply to military effort. This plan of the whole series necessarily implies that in this volume some subjects are dealt with much more exhaustively than others. But Professor Postan, who apologises for this, has managed to produce a narrative that is fascinating in content and which marches with a speed that never loses a reader's interest. What an immense help it would have been to some of us who came in after the outbreak of war if we could have been given the chapters covering the earlier stages of rearmament as a first course in our education!

What is perhaps not quite so clear is the purpose of this series of histories. Is it merely to tell the story and to give credit for remarkable achievements? Is it to put on record some of the lessons of these years so that, if necessity should ever arise, our successors may learn from our mistakes and benefit by our experience? To the latter purpose the small and ill-written histories of the various activities of the Ministry of Munitions in the First World War contributed practically nothing. Indeed, I believe that, on one or two occasions at least between 1939 and 1945, files of that war were disinterred to discover whether arguments had been fully considered for adopting some form of organisation rather than another, and whether the subsequent experience had been recorded and analysed. Professor Postan has gone much further in providing the evidence from which such

decisions could be made another time. But I doubt whether the evidence is full enough (or could be full enough within a readable compass) to reach detailed decisions. This is in part the obvious consequence of the fact that administration must deal with detail, and a history must emphasise the broad trends. It is partly, I fear, that many of the most interesting lessons have had to go by the board because fate has decided that this volume shall appear at the very moment when we are once again engaged in large-scale rearmament, so that security prohibits the public recording of what might have been most valuable.

If one is concerned with the lessons, there is one other respect in which many who wrestled with these problems during the war years will feel that, through no possible fault of the author, the emphasis is in danger of being wrong. By decree of the Civil Service, no individual names are mentioned. Very occasionally a Minister, much less often some exceptional person from the world of industry, is identified; but for the general run the rule of anonymity is sacrosanct. From the angle of justice there is much to be said for this. From the angle of understanding the forces and influences at work there is nothing to be said for it. Since the contributions and from time to time the clashes of the individuals are unmentionable, the ministries and departments in which they were working seem to acquire a wholly unreal corporate character, and a continuity of character despite changes of personalities, which simply did not exist. Very rarely, where the story (as in one case of the Ministry of Production) would be utterly incomprehensible without it, Professor Postan gives a hint. But by and large the inevitable result has been to endow lively and active collections of individuals, whose clashing opinions yielded at any moment a resultant force in one direction or another, with an apparent unanimity, solidarity and consistency which was often very far from existing. Surely if there was one supreme lesson of all those years, it was the lesson of the importance of people, of the greatness of the contribution that a few individuals of vision and drive might make. To exorcise the individuals is to put all the emphasis on the forms of organisation. Immensely important as were the forms, they were incomparably less important than the people. Nor, as Professor Postan makes abundantly clear in relation to Mr. Churchill's own ramifying and rampaging activities as Minister of Defence, can forms of administration forget the individuals that they are seeking to tame. And because a history, once started on the theme of organisation cannot easily retreat into ministerial personalities,

I am left at the end completely uncertain whether Professor Postan would judge that Lord Beaverbrook's catastrophic disruptions of all orderly administration were, or were not, on balance more than offset by his wonderful achievements in getting the nation on to its toes and communicating to it his own driving sense of urgency.

There is another rather curious effect of this anonymity which deserves mention. To those of us who can still visualise the various committees of those years, as rows of individual, though sometimes changing, faces, the process of co-ordination is much more intelligible than it can possibly be to an uninformed reader. The fact that two committees with slightly overlapping functions were the same people under a different hat, or the immediate subordinates of the higher committee (often themselves present at the higher committee), dealing now with applications of detail, seldom fully emerges. Nor does there quite emerge the eternal process of co-ordination and squaring through lurching together, seeing each other's problems and difficulties, and feeling towards a solution acceptable to two ministries with temporarily opposing interests and claims. Indeed, it is inevitable that an historian shall use the thoughts recorded on paper. The telephone conversations, the informal private discussions, both inside a Ministry and outside, are lost, and rosy tinted memories can give them no dependable reincarnation.

Somehow, seen on this scale and in retrospect, the whole history seems so much smoother and less chaotic than it seemed at the time. Perhaps that is the right perspective; perhaps the size of the waves are better judged from the top deck of the *Queen Mary* than from the perilous skiffs in which most of us had to negotiate them. I found myself, nevertheless, wondering about these things when I read, of one of the problems that was causing some of us who were watching it no end of worry in 1943, "the position never became desperate and had rectified itself by the spring of 1944"; that particular skiff, thanks to good seamanship, had narrowly escaped disaster.

What are the main lessons to be learned on the large scale? I think Professor Postan would say that the central problem is whether three supply Ministries were really necessary, or whether one colossus, on the model of the Ministry of Munitions of 1918, would have been preferable. To that he would, if I understand him right, answer that such a colossus would only be workable, if at all, on the supposition that production could be separated from design and development. Otherwise the whole structure would

be so immense that it would inevitably degenerate into three loosely co-ordinated departments, a structure not widely different in effect from that which existed by 1945. But he would not, I gather, believe that design and development could be profitably separated from production, since there must necessarily be emphasis on quality as well as quantity. Thus we reach the view that the structure of 1945 was right in broad essentials. But it was very far from being right in detail. The Ministry of Supply possessed a variety of responsibilities, particularly in the field of raw materials, which properly belonged to a co-ordinating Ministry rather than to the supply department of the Army. The Ministry of Production, after a period of injudicious empire-building, had gradually learned the appropriate line between attempts to centralise and co-ordinate and attempts to leave to others what they could do best. But the difficulties and errors arose largely from the fact that it arrived late in the field, when functions had inevitably fallen into other hands, and a logical structure was unattainable. For my own part, I believe it would have been much better if it could have grown up more slowly, before the full use of all resources made its existence absolutely necessary, so that it might have acquired not only the right functions from the first, but also a body of knowledge, experience and statistical information that could be progressively deployed as circumstances required.

In his final chapter Professor Postan opens very briefly the fascinating problem of whether economic analysis and scientific method could be used on a greater scale to guide the broad strategy of war production. Could one, for example, work out the cost in man-hours of achieving certain results with alternative weapons and thus concentrate on the best weapons? The combination of operational research and of production data could, on occasion, throw most interesting light in retrospect on such relative costs. I doubt (as he does) whether it could be used to guide policy in advance. Wastage rates which were a decisive element in the calculation of costs were very unpredictable. Even the conclusions which he quotes as to the relative costs with various types of aircraft of long-distance bombing against heavily defended targets proved quite inapplicable to the relative costs of short-distance bombing before and after D-day. And with the long delays inevitable in re-tooling, I would not expect that such conclusions could be applied to actual production before progress was already making the better weapon obsolete. But here is a field of analysis in which remarkably little work has ever been done.

This great history of war production fully lives up to the hopes of all those for whom Professor Postan was made the recording angel. It tells the story of those years so that the big issues emerge with clarity. It is just. It is beautifully written and immensely readable. We all owe him a tremendous debt of thanks.

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The Economics of Sellers' Competition. By FRITZ MACHLUP.
(Baltimore: The Johns Hopkins Press, 1952. Pp. 582.
\$6.50.)

The Political Economy of Monopoly. By FRITZ MACHLUP. (Baltimore: The Johns Hopkins Press, 1952. Pp. 544. \$5.50.)

THESE two books are to be regarded as companion volumes, which take the place of a single book previously announced *On the Economics of Competition and Monopoly*. Professor Machlup intends *The Economics of Sellers' Competition* for intermediate and advanced students and for the expert in the field; it is to provide a solid foundation for analytical economic reasoning, and is the book which of the two will be of greater interest to economists. Professor Machlup works to a definite plan, analysing theoretically different forms and degrees of competition and monopoly in successive chapters. He makes a sharp distinction between the degree of competition between existing firms selling in any given market and the ease of entry into a market; usually he writes of this distinction as that between *many* and a *few* firms already in a market or industry, and *more* firms entering the market.

He distinguishes three main types of competition or the lack of it within an industry, with several subdivisions. The distinction is made to rest, usefully it seems to me, largely on the state of mind of the entrepreneur towards the actions of other firms. First comes the polypolist, where "the seller is unconcerned about rival's reactions because he has too many competitors (or colleagues) to consider any one of them as his rival." This has two subdivisions, the seller of a standardised product who feels that he has no say in the matter of selling price, but must accept the market price, and the seller of differentiated products who believes that he can vary his price without losing his whole market, but is nevertheless not concerned about the reactions of the numerous other sellers of similar products, who he does not expect to react to

changes in his output, since this is too small to matter to them. The first is pure competition, the second monopolistic competition. Secondly, comes the oligopolist, who is rival-conscious, knowing that his actions cannot "remain unnoticed and unopposed by the other sellers." (As Professor Machlup realises, the previous category, monopolistic polypoly, is not always very easily distinguished from oligopoly.) Oligopoly has many possible subdivisions and types of classification, depending upon the number of sellers, duopoly, triopoly and so on, provided always that the seller does take into account his rivals' reactions to his actions; or on the degree of collusion, for Professor Machlup here includes agreements and cartels; or on the degree of leadership of one or a few firms. Finally comes the monopolist, the "seller who knows neither any individuals nor any particular groups of other sellers with whom he is in competition," a definition so strict that few cases fall into it, and therefore dealt with in one brief concluding chapter.

Professor Machlup distinguishes sharply between the competition represented by polypoly and that dependent upon free entry into an industry. Owing to the different meanings attached by different writers to the terms "free" and "perfect competition," he uses the word "plipoly" for ready and unhampered movement of businesses into occupations with high profits. Plipoly and polypoly may go together, but they may not; so may plipoly and oligopoly, but only with each modifying the other. Monopoly presupposes no plipoly; the monopolist must not only be the only one in the market but also be likely so to remain.

Professor Machlup describes and analyses at considerable length a large number of combinations and variants of these main varieties. He has a great deal of interest to say, for instance on the controversy as to whether and when business firms try to fix prices to cover average costs, or so as to equate marginal costs and marginal revenue (in Chapter 3), on the causes of supernormal profits (particularly the table on p. 259) and on the difficulties of cartels (in Chapter 15), though here I think there are important points he ignores. He gives a clear description of many earlier theories, particularly perhaps of the duopoly analysis of Cournot, Bertrand and Edgeworth.

None the less, I do not find the book wholly satisfactory. First, it seems to me to fall between two stools. It is too long and repetitive to be easily readable; this is a criticism which Professor Machlup anticipated in his Introduction, defending himself by saying that he could not expect it to be read in one sitting. But

it does not go far enough into the theory to be useful for advanced students; on the difficult subjects it breaks off at the point where further elucidation is required. This defect appears most clearly in the discussion of duopoly; we are given a great deal on Cournot, Bertrand and Edgeworth and their defects and a little on the possible ways of remedying them, as suggested by later writers, but far too little to be intelligible. I feel that Professor Machlup should either have dealt fully with certain topics or have left them out. But he is determined to use the literary approach: he eschews mathematics and only puts in diagrams occasionally, and does not use them in his argument. Yet, since his discussion in this book is theoretical and formalistic, I should myself have found it easier had diagrams featured more conspicuously.

Secondly, there is an apparent bias against any form of monopoly (a bias much more apparent in *The Political Economy of Monopoly*). Many will share this attitude; but the bias could surely have been set forth more clearly than, for instance, on p. 150.

The merits, in parts considerable, of *The Economics of Competition and Monopoly* seem to me absent from *The Political Economy of Monopoly*, but its demerits to be accentuated and others added. Here Professor Machlup is less definite on the audience he hopes to secure. He encourages the student beginning economics, the general reader, the student in a second or third year course in economics and "the trained and well-read economist" to try the book; but the beginner is warned that he may find some sections too technical or "theoretical," and the general reader advised to skip the more technical sections. Perhaps because the author had all these different categories in mind, perhaps because he wanted to present together ideas on many subjects which cannot be very clearly related except in a volume a good deal longer than is even this one, the book lacks a central scheme. There is one part dealing with concepts, another listing types of monopolistic practices, a third describing American anti-monopoly law and the various laws there which help monopoly, a fourth analysing labour policies and a final section which first tries to justify the arrangement of the book and then lists some of the attempts (foolish and otherwise) to measure monopoly.

The level of difficulty of these various sections differs widely. Some parts, particularly that on labour policy, where Professor Machlup would remove from trade unions their wage-bargaining powers, are difficult and controversial; but not enough space is given them to develop the ideas fully. The same is even more true of the section on measurement. It seems to me that there

are some errors of theory—for instance, in the effect of rising wages on employment, notably in the section beginning on p. 420; and definitely some errors of fact. Thus the British Monopoly (Inquiry and Control) Commission cannot draft Orders, for issuance by the competent Government department, declaring unlawful any practices that are found to operate against the public interest (p. 187); the relevant Minister can only issue orders on specified matters. Nor does the International Wheat Agreement set minimum and maximum prices and establish quotas in the sense in which these words are used in the rest of Professor Machlup's book (p. 310).

The book as a whole is a disappointment. But there are interesting parts, particularly the appraisal of the Anti-Trust Acts. If only Professor Machlup had been content either to write for the general public and leave out the touches of incomplete theory, or to elaborate for the economist his views on wage bargains!

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Economic Dynamics. By WILLIAM J. BAUMOL, with a contribution by RALPH TURVEY. (New York and London: Macmillan, 1951. Pp. xiii + 262. 37s. 6d.)

FASHION has decreed that good economics is dynamic, and that a theory which is "merely static" is necessarily inferior, perhaps almost useless. Fashion, of course, is very foolish, and Professor Baumol is to be congratulated for his first footnote on his first page: "We shall only be categorical on definitions in insisting that 'dynamic' should *not* be taken to mean 'superior,' and 'static,' 'inferior.'" But it is true, of course, that quite a lot of those who grub about at the frontiers of economic theory have reported discoveries of crude varieties of dynamic systems. With rare and delightful exceptions, such as Professor Hicks, the frontiersmen are incapable of describing what they have found in civilised prose, but turn out vast unlovely masses of mathematics. The time had come, and the need existed, for a text-book to tell students (and their teachers) what it is all about. This is the brilliant answer to that need.

The frontiersmen tend to be so interested in their own territory that they have little time to survey what is going on around them. It is those who follow up their explorations who perceive the unity

which underlies the diversity of the first discoveries. Economic Dynamics, to judge from Professor Baumol's book, is still a lot of unrelated bits and pieces; it is not a subject or a discipline, but a junk-shop full of odd tools and ideas which particular researchers have found helpful. Therefore, despite the unusual clarity of the book, the reviewer found it an easy one to lay down; there was no sense of a developing theme carrying the reader's interest forward from one chapter to the next. Perhaps, therefore, the book may have a greater importance than the instruction of the young; it may suggest ways of integrating the subject and show which frontiers most need further exploration.

There is in fact an example of this in the appendix to Chapter 5, on uncertainty. A plausible dynamic theory must include a theory of expectations, for it is certain that the economic future is influenced by what men think about it. The appendix referred to sets out, in all its bald improbability, a "mathematical expectation" theory of decision under uncertainty; it refers to, but does not describe, the rival theory of Professor Shackle; and it then leaves the subject, an area which surely cries out for further exploration. In the present state of dynamic theory there is an unfortunate tendency to pay too much attention to models which trace out trends or perform cyclical antics automatically; the human element is little stressed, because it is little understood.

The book falls into two parts, Chapters 1-7 being a description of economic theories and Chapters 8-12 a handbook of mathematical theory with economic illustrations. The earlier chapters describe some dynamic theories which from sweeping generalisations attempt to deduce the movements of broad economic aggregates; a mixed *hors d'œuvre* of classical theorists, Marx and Schumpeter, and (as a modern representative) Harrod's *Towards a Dynamic Economics*. Then there is a group of chapters on comparative statics, based on Hicks and Samuelson. Throughout these earlier chapters the exposition is admirable, leading the reader on with gentle simplicity from one point to the next; and care has been taken to concentrate on essentials and leave out confusing peculiarities in the original exposition.

Then comes a break. Chapter 8, largely the work of Mr. Turvey, is an exposition of Swedish theories of period analysis—*ex ante*, *ex post* and all that; and this leads naturally into a description of the tools necessary for period analysis—difference equations and differential equations. The whole of the rest of the book is concerned with deriving and classifying the solutions of these. It can fairly be said that the authors have managed, with

great artistry, to make the mathematics accessible to ordinary readers; indeed, the last hundred pages would be a thoroughly worth-while text-book by themselves. The combination of sound literary exposition with mathematical expertise is enough to make the whole a text-book deserving of success; and the value is improved by the convenient juxtaposition of the Swedish and the mathematical approaches, which cannot fail to suggest new lines of thought and inquiry.

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Weltwirtschaft. By ADOLF WEBER. (Berlin: Duncker & Humblot, 1950. Pp. xiii + 464. DM. 15.)

THIS book, a revised and greatly augmented version of Professor Weber's work of 1932, is intended to give the German layman some idea of economic theory, world economic structure and current problems. The author begins by discussing population and the needs of the consumer, the distribution and use of raw materials and power. Two chapters deal with the principles of economic theory and their application (or misapplication) by politicians; a further chapter with technical progress. The rest of the book is concerned with international economic relations: trade and colonial policies, the balance of payments, reparations (a subject of special, if out-dated, interest to the German reader), European integration and the prospects of a world economy. Graphs, tables and maps illustrate the argument, photographs keep the reader entertained. The style is clear and easy, the argument is popular without vulgarising. English readers would not, however, find it worth their while to read the book for information, even if they know German; partly because the information is embedded in the argument and laid out in an unfamiliar and sometimes inconvenient way, partly because similar material is readily accessible in our language.

They may, however, read Professor Weber's argument with profit; for the years since 1932 have left fewer marks on it than on his facts. He remains an unrepentant supporter of classical free market economics, and a proudly Germano-centric writer, and it is instructive to observe him in both these roles, for the beams in one's own eye are notoriously harder to see than the similar ones in other peoples' eyes. Thus most writers who stress the virtues of the international division of labour have a

marked tendency to assume that their country's part in it is that of a major industrial power. But can we expect Russians to be convinced that "Russia would do herself and the world most good" by developing her agriculture and the manufactures directly dependent on it (p. 341) or Englishmen, that their country should become a projection (Vorland) of a European continent whose industrial heart would lie in Germany (p. 332)? This quite apart from one's doubts about the rather simple conception of an international division of labour which Professor Weber appears to hold.

There is perhaps less danger nowadays of being seduced by Professor Weber's general approach to economics. True, the theoretical simplicity and elegance of national and international economic relations before 1914 has made others beside him look back to that period with longing; but the hope of returning to it is no longer widely held. Nor is he the only writer to find himself in a dilemma. If one's hope for the future is summed up in the cry: "Let us be strong enough to shake off the dead pattern of State interventionism, protectionism, super-cartels and great concerns. Let us regain confidence in the abilities of the individual" (p. 418), all one can say about the modern world is that it should not be there. But it is, and one must make some practical recommendations about it. Indeed, Professor Weber admits that the probability of a return to pre-1914, which he still considers in some sense "normal," is zero; hence we need not trouble to inquire whether his analysis of it is, in fact, adequate. A return may not even, he thinks, be desirable, if full employment at a high level of wages is to be brought about or maintained. He is therefore willing to see a series of modest empirical expedients, even an *économie orientée*, one step less frightening than an *économie dirigée*, so long as the essential of free price formation by consumer-choice is safeguarded, and risk-bearing capital continues to be the main motor of the economic vehicle. Whether the two things can be combined, is not discussed. Planning is undesirable, except for limited war-time purposes. However, if there has to be planning, Professor Weber respects that of the U.S.S.R., which rests on "a century of thinking" and two decades of experience, to other types. Nevertheless, it would be by far the best thing for the world as a whole if the U.S.S.R. stopped having "its peculiar economic system based on the socialisation of the means of production." We may or may not sympathise with this wish, but it is hardly likely to be granted. Professor Weber's book thus raises lucidly the question how far books about

economic policy which hanker after unrealistic assumptions are worth writing. It is a question which we must all, in our different ways, ask ourselves; and it is useful to be reminded of this fact.

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Principles of Economic Development. By P. R. FOSSUM. (Tacoma, Washington: The College Press, 1952. Pp. 9 + 247. \$3.)

THIS is Malthus in modern dress, capped with geopolitics to make it more bizarre. Dr. Fossum sees economic development as a battle between food supply and population growth in which a surplus of food is first built up and then whittled away. Out of the surplus come division of labour, trade and capital; as the surplus rocks to and fro, industrial activity, the distribution of labour between farms and factories, prices and the supply of gold oscillate in sympathy. One civilisation after another, on a frontier that moves steadily to the west, climbs on the back of the surplus by the four steps that lead up to the Golden Age of Culture and Enjoyment; but each is doomed to miss its footing on the fifth (after accumulating its quota of monuments), and join the over-populated east in a long slide into the abyss. Apart from plague and pestilence (war is ineffective), only one thing can bring the escalator to a halt: "the exercise of reason and scientific understanding in indulgence in carnal pleasures." The accumulation of capital offers no lasting way out. Surplus food may be converted into tools that serve as labour-aids on an increasing scale "as the group approaches the zenith of its powers"; but the tools will eventually "wear out again as the population pressures provide more labour at lower and lower standards of living."

Coupled with this vision of human destiny is a good deal of rickety theory, strutting on doubtful precedents and muddled statistics. History is ransacked to link agricultural development with social structures, political forms, military power and artistic achievements. Again, a fivefold progression is conjured up, beginning and ending with a "static monarchy." Half-way round the merry-go-round comes "autocratic dictatorship," which appears to cover Roosevelt and Churchill as well as Hitler and Stalin. Roosevelt, indeed, strays into the discussion like a figure from Madame Tussaud's, to be exhibited, now alongside

Thutmose III and Alexander the Great, now beside Gustavus Adolphus and Genghis Khan.

As to the statistics, the less said the better. The relationship between any two time series is expressed in terms of the proportion of the years covered in which the two moved in the same direction (+) or in opposite directions (—) whichever is the higher—so that no result lower than 50% (+ or —) is possible. Nevertheless, percentages below 60 are described as “high ratios”! Where three time series are involved, it is possible to find examples of a positive relation (measured in this way) of A with both B and C, even when the relation between B and C is negative.

The trade cycle in Dr. Fossum's scheme of things is an inevitable rhythm in which an extension of the food-base in the slump alternates with an expansion of industry on this widening base in the boom. No evidence is provided that the supply of food does increase in the slump; the discussion is conducted in terms of “basic food,” which is equated with wheat (plus, occasionally, hogs). All that is demonstrated is that workers who have lost their jobs in the slump make a bee-line for the nearest farm that will offer them a living. Economists might agree that agricultural fluctuations still have some influence on industrial activity and that the crisis before a slump has often reflected a shortage of real resources. But they would think it a little odd to attribute the trade cycle exclusively to agricultural fluctuations, and more than odd to identify real resources with the wheat crop.

No doubt food has had a predominant influence on world economic and social development, viewed from a sufficient altitude. But when one is looking at the history of the United States in the twentieth century, need one be so determined to wear green spectacles and see everything in terms of food? May not the practice of “taking the production of food for granted” with which Ricardo and Mill are convicted in one footnote be innocent enough? And may not the snooty dismissal of Schumpeter in another footnote as one interested only in “principles for the development of an industrial society” be the verdict of a mote on a beam?

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International Monetary Co-operation, 1945-1952. By BRIAN TEW. (London: Hutchinson's University Library, 1952. Pp. xii + 168. 8s. 6d.)

INTRODUCTORY economic text-books are a necessity, and fortunately there are some very good ones. As a class, however, they are rather depressing: there are too many of them, and they suffer regrettably often from prolixity and dullness. It is all the more gratifying, therefore, when an introductory book appears which really justifies its existence, and fulfils a clear and useful function very successfully. *International Monetary Co-operation* provides an admirable survey of current international economic problems, and of the policies and institutions which have been devised to deal with them. It is well set out, clearly written and concise almost to a fault.

The book is divided into three parts. Part I is entitled “First Principles,” and described as “a general analysis of the scope for international monetary co-operation.” The analysis is conducted under four main headings: exchange rates; liquidity and multilateral settlements; international disequilibria and exchange restrictions; and the international transmission of inflation and deflation. This arrangement is then used in Part II, when Professor Tew deals with the International Monetary Fund (the Bank gets only a cursory reference) and the European Payments Union: the rules and practices of the two institutions are discussed in relation to each of these four topics. Part II takes up about half the book, and concludes with a very good chapter on sterling, which describes the constitution of the sterling area, the working of the British exchange-control system and the role of sterling as an international currency. Part III consists of a competent though very brief outline of the course of events from the end of the war up to the beginning of 1952.

In view of the very limited space which Professor Tew had at his disposal, it is perhaps unreasonable to complain of omissions. To have compressed so much material into 160 rather small pages is a real achievement, especially as the argument in Part II is remarkably detailed and thorough. It is clear, however, that there are omissions, though they were perhaps inevitable. There is virtually no reference to the “underdeveloped areas,” or to the problems of international lending in the post-war world. It could be argued that on a strict definition of “monetary co-operation,” these subjects ought to be excluded; and in any case, it would have been very difficult to consider them at all adequately without expanding the book. It seems a pity, however, that they

are left out altogether, since they have a close and obvious connection with some of the general questions which the book is concerned with. Again, it is not surprising that there should be no attempt to describe the working of the British long-term contracts, or the International Wheat Agreement, but it would have been worth while at least to mention their existence.

This would be a matter, only for regret, rather than positive censure, if it were obvious that nothing in the book could have been left out without serious loss; but this is not the case. Professor Tew does not waste words, but it can be argued that in Part I he wastes a good many pages. This is because (to quote from the Preface) "no prior technical knowledge is expected of the reader," so that much of the argument in the earlier chapters is on a very elementary level. It is well presented, and there is something to be said for making the book as self-contained as possible. But it is unfortunate that space should be taken up with arguments which could just as well be read—and in practice almost certainly *will* be read—in a general introduction to international economics. Any student who reads a book of this type *ought* to have some prior technical knowledge; and if this assumption were made from the beginning, it would be possible to shorten Part I—though it is only fair to add that most of Chapters III–V would be well worth preserving in any case.

Although the selection of the subject-matter may be questioned, the treatment of it deserves high praise. The more detailed and technical parts of the book are clearly written and well illustrated, and the controversial issues of trade and payments policy are dealt with fairly and sensibly when they arise. There is one point, however, where Professor Tew permits himself a rather strong expression of opinion which is stated in an unfortunate way. At the end of the two chapters on the International Monetary Fund, he writes: "There has been far too little progress towards the Fund's objective of lifting restrictions on current international payments, and its sister organizations have made only slightly more progress in reducing barriers to international trade" (p. 94). He goes on to assert that "the major cause of the rather disappointing achievements of the Fund has . . . been the attitude of its members. . . . An example of this attitude has been the tenacity that many members have displayed in retaining unnecessary currency restrictions—unnecessary, that is, for the suppression of an external deficit—and the same is true of unnecessary trade restrictions . . ." (pp. 94 and 95). This summary verdict may be criticised on three grounds.

First, the picture of the Fund's members as naughty children who refuse the medicine which will do them good is not altogether unrealistic, but it is surely a little overdrawn. It is true that many existing restrictions are wholly protective or exploitative in character (though it does not follow that they are wholly indefensible); but the other aspect of present-day restrictions deserves more recognition than it gets here. Professor Tew places surprisingly little emphasis on the meagreness of the exchange reserves of most countries and the size of the United States surplus on current account. This state of affairs, which a removal of restrictions *in itself* is more likely to worsen than improve, obviously accounts for many existing restrictions, and it would have been better to make this point more explicitly. Second, the concept of "necessary" restrictions is strictly meaningless and practically unhelpful. Strictly speaking, *no* restrictions are *necessary*: any government which was sufficiently unswerving in its devotion to the principles of free trade could find ways of eliminating the most chronic deficit without making use of restrictive devices. Even apart from this, there is simply no way of deciding what restrictions *are* necessary, and it is misleading to imply that a dividing line can be drawn without too much difficulty. Finally, the practice of making rather casual value-judgments of this kind, although it is widely followed and often very hard to avoid, is a bad one—especially in an introductory book. Its usual result is that no explicit account is taken of the fact that policies are not adopted, and as a rule *ought not* to be adopted, on the basis of economic considerations alone. Also, it is apt to cause undergraduates to overestimate the value of pure economic theory, unsupported by quantitative data or other evidence and unqualified by any reference to questions of distribution, as a guide to issues of policy.

These reservations may, of course, not be shared by other readers, while there will probably be general agreement on the merits of this book. It has one obvious and inherent defect, for in a few years it will be out of date. The task of revising it may well prove to be laborious, but it is very much to be hoped that Professor Tew will be induced to perform it.

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Progressive Taxation. By F. SHEHAB. (London: Oxford University Press, 1953. Pp. xiii + 299. 27s. 6d.)

THE content of this book is both narrower and wider than its title might appear to indicate. It is narrower in the sense that it is a study of the British income tax and not of taxation in general. It is also more concerned with economic history—and economic history of the variety more commonly written by historians than economists—than with economic analysis. In effect, the author concentrates on showing the development of the various aspects of the progressive principle (minimum exemption limits and family allowances, graduated taxes on higher levels of income, differentiation between earned and unearned incomes) between 1688 and 1920. Thus in some respects his treatment is a wide one dealing with different types of “lateral progression,” such as allowances for family circumstances and the source of income, as well as the usual kind of vertical progression. A criticism here, however, might be that no effort is ever really made to link up these two sides and ask, for instance, how far the actual form of development of the family-allowance principle was or was not the negation of vertical progression.

But the main reaction must definitely be appreciative rather than critical. Dr. Shehab has made a very creditable attempt to cope with a vast field of Parliamentary inquiry and legislation, economic theorising and popular discussion, as his extensive bibliography bears witness. (Two small points may be made, in passing, about this. One is the complete omission of any reference to Lord Stamp's *British Incomes and Property*; the other is a misprint on p. 293, where Soward and *William* should read Soward and *Willan*.) Particularly interesting, because it is most obscure and most neglected, is the account of the extensive discussion on income tax principles which took place in the eighteenth century before there had been any practical experience of levying an income tax in its modern form.

Several reflections are prompted by this book. The first is one of “*plus ça change . . .*” Not only is it true that many of the features of the modern British income tax system have a long history, but also most of the pros and cons of these features have been known for a long time too. Pitt's income tax provided for a graduated rate of tax, minimum exemption limits, allowances for children (more modern than the modern, in the sense of varying with income of parent and age of child), deduction for life-insurance premiums, deduction at source and so on. In his

Principles of Moral and Political Philosophy (1785) Archdeacon Paley put forward a theoretical justification for a graduated income tax which essentially anticipated by more than a century most of the doctrines which we commonly associate with Edgeworth and his successors.

The second reflection is the overwhelming importance of war in procuring fiscal changes. It was the Napoleonic War which enabled Pitt to introduce his tax; it was the South African War which led to the raising of the income tax rate from 8d. to 1s. 3d.; it was the demands of the First World War which not only led to the pushing up of income tax rates to hitherto undreamt of levels, startling increases in the rates of supertax and the introduction of excess profits tax but also (and this is less often remembered) made it possible for graduation proper and family allowances, both frowned on by the Select Committee of 1906, to be introduced in a more extensive form than ever before. And if Dr. Shehab's survey had included the Second World War, this catalogue could have been extended further.

A third reflection is to ask whether under present-day conditions, heavy differentiation against unearned incomes is still justified. So many of the historical reasons no longer apply so fully as in the past—with National Insurance (and ordinary life-insurance tax remissions) there is now extensive cover against the more precarious nature of earned incomes, with death duties there is very full provision for taxation of accumulated wealth. And so many modern reasons, such as the need to increase personal saving, work the other way that the time would seem to be over-ripe for re-consideration of this practice.

Finally, Dr. Shehab clearly shows the long time-lag common in his period between theoretical agreement on reform and practical accomplishment. Some thirty years had to pass, for instance, before Edgeworth's theoretical justification for graduation found adequate legislative recognition. Must we wait as long to-day for practical recognition of the theoretical disadvantages of high marginal rates and the like?

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Effects of Taxation. Corporate Financial Policy. By D. T. SMITH. (Boston : Harvard Graduate School of Business Administration (London : Bailey Bros. & Swinfen), 1952. Pp. xii + 301. 30s.)

Effects of Taxation. Depreciation Adjustments for Price Changes. By E. CARY BROWN. (Boston : Harvard Graduate School of Business Administration (London : Bailey Bros. & Swinfen), 1952. Pp. xiii + 161. 26s.)

THESE are the fifth and sixth volumes in the general study of the effects of taxation on business which is being conducted through the Harvard Graduate School of Business Administration. The studies in this series have perhaps not received in this country the attention which they deserve. For students of taxation they are indispensable, and students of almost any aspect of business behaviour and finance will find in them much information and many ideas. These two books are not exceptions.

One of the purposes of these studies is "to put tax factors in their proper perspective," and this requires investigation of non-tax considerations. "Thus an enquiry on the effects of taxation on a particular type of action becomes a broader enquiry on that form of action itself." Professor Smith devotes much of his book to studying basic problems of corporate financial policy, with chapters on new issues, retained earnings and some of the problems of new outside finance for small business. British readers who are not particularly concerned with taxation will probably find these the most useful parts of the book. Among the more interesting chapters are those in which the author discusses the costs of raising outside capital by issue of shares. He concentrates on the dilution of earnings, asset value and control (reduction in earnings, etc., per share), which are likely to result from a new issue. The prospect of dilution may frequently deter firms from making a new issue, and cause them to rely on retained earnings. The discussion of this and other questions is based on an extensive field investigation of both widely owned and closely controlled corporations.

This broader inquiry into corporate financing provides the background for the study of the effects of the corporation income and excess profits taxes. In addition to the examination of the effects of taxes on the costs of new issues and on retained earnings, there are chapters on the tax advantages of debt financing, and the form of organisation and the capital structure of new corporations. In a number of cases similar effects can be expected from

British taxes—for example, in both countries it is to the advantage of stockholders paying personal income tax at high rates for companies to retain earnings, provided that retained earnings increase the price of shares. Too much must not be made of the similarity; there are large differences between the taxes of the two countries, and, in this field, even apparently small differences of tax structure or tax law may be very important. Although its conclusions cannot be exported to this country (and that, of course, is no criticism), one of the advantages of this book to the reviewer, at any rate, is that in it there are so many ideas for an analysis of British taxation. The going is heavy in some places, in a few others the argument is rather long-winded; but, taken as a whole, this book is readable, authoritative and rewarding.

Rising prices and increasing taxes on business have aroused a lively debate on the definition of taxable profits. It is refreshing to find that Professor Cary Brown gives us that rare thing—a clear statement of the issues. His study deals with proposed changes in depreciation allowances for tax purposes, not for accounting purposes. That distinction is frequently ignored. The book begins with an analysis of the effects of various price movements on business profits on a number of different assumptions about kinds of assets (depreciable or financial) and length of life and pattern of replacement of depreciable assets. Other chapters examine methods, which have been used or proposed, of adjusting depreciation allowances for price changes. These chapters form the background for an examination of the basic question of this study: what are the consequences for equity and the economic effects of using replacement-cost depreciation for tax purposes? The concept of equity which the author thinks most satisfactory is that income taxes should be imposed on real income or changes in real net worth. The present definition of taxable income results in "approximately the appropriate differential in tax" between owners of depreciable assets and owners of financial assets. The former bear the heavier tax when prices rise. Replacement-cost depreciation would remove this differential and would not alter the present unsatisfactory treatment of debtors. Its adoption would, in the author's opinion, decrease equity in the tax system.

Professor Brown then turns to the effects on stability and investment. If sharp price rises were combined with high tax rates, "the rate of investment might well be lower under historic cost depreciation than under replacement cost depreciation." To a reader of the speeches of company chairmen, this seems to be a surprisingly over-cautious statement. But the analysis on which

it is based seems to justify most, though perhaps not all, of the caution. Replacement-cost depreciation is one possible method of securing more investment, but as the author rightly points out, "there are other ways of reducing business taxes . . . and . . . other ways of providing business with more funds than through tax reduction that must also be considered."

The argument is generally clear, although in places (especially in Chapter Two) it seems to suffer from over-compression, and there are one or two minor errors. Anyone who has wrestled with this problem will find much that is familiar and will be able to suggest points that might have been discussed, *e.g.*, the effect of replacement-cost depreciation in narrowing the tax base. But he will also find much that is new.

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Les Salaires. By ROBERT MOSSÉ. (Paris: Librairie Marcel Rivière, 1952. Pp. 324. 950 fr.)

THE purpose of this book is to provide a survey of the present state of our knowledge of wages, which will enable the student to come to grips with the subject himself more quickly and effectively than he could without a guide. There is first an account and appraisal of the development of wages themselves and of the thought of the economists about them, from the end of the nineteenth century down to the present day. There follows an account of the main statistics of contemporary wages in France, Italy, the United Kingdom and the United States. Then comes a bibliography, which lists the current sources of reports and studies about wages in the international bodies and the main countries of the world, and gives a brief account of the contributions of each of nearly two hundred authors. The plan is admirable, and the purpose of the book is well achieved. It is excellent as an introduction for those who are beginning a specialised study of wages: it will acquaint them quickly with the kind of work that has been done, whet their appetites for discussion, and give them the references for their own further studies. Those who have already worked long in the field are still likely to come on new and useful references in this book, which now itself becomes a standard reference for the economics of labour.

Professor Mossé's survey of development is lucid and lively. Its account both of facts and theory is intelligible of itself, yet avoids the clutter of detail which would impede its rapid move-

ment. It shows a flair for the affinity and appeal of ideas. Yet it could hardly have such limpidity and sparkle unless it took its own clear line through controversy; and the one reservation I should make in recommending this book to students, is that in his account of recent studies Professor Mossé seems to me to give too much weight to the personal and political factors which affect money wage-rates, and to discard too hastily the properly economic analysis of the connection between real wages and productivity. He contends that as the simple apparatus of supply and demand is adapted to take account of particular features of the wage bargain, it becomes more complicated without becoming more useful, and can tell us only that all sorts of things are possible. Indeed, he holds, the very idea of a labour market dissolves. "Labour is not a commodity. A wage is not a price formed in a market. 'Supply' and 'Demand' as labels are mere scrawls. It is impossible to say whether there is a relation, and if so what, between a workman's wage and his productivity, between the general level of wages and employment, output, prices, money, etc." While in this way the attempt to treat wages as a component of a system of forces, on the analogy of the physical sciences, has come to a dead end, the social function of wages has changed, from the sole source of the wage-earner's income to only one source among others; and studies by social scientists trained in other disciplines have made us increasingly aware of how much in actual wage-fixing depends on the imponderables of human nature and public opinion. The way forward lies not in the now hopeless attempt to make the analysis of price formation fit the facts of wage-fixing, but in those political, sociological, and psychological studies which alone take account of the operative forces.

My difficulty is not that I dispute the influence of such forces, but that a comparative study of the movement of wages over a range of periods and places shows more regularities than we should expect from those forces alone. The snag in the "political" explanation of wage movements is that of itself it allows too much to happen—let us have a belligerent trade-union movement, and a public opinion and a government sympathetic to it, and why should the rise in money wage-rates ever stop? But in practice there are checks which cannot be explained without bringing in other and more properly economic factors. In the study of the drama of single instances, moreover, we are apt to see what is prominent precisely because it is particular, and overlook the factors which though minor in one instance act powerfully on

an aggregate of instances because they are common to them all: I think the economic factors in wage negotiations are of this kind. These reflections apply to money wages, but more strongly still to real wages, of which the regularities of behaviour are more marked, which clearly are connected with productivity, and which cannot be explained by accounts of the fixing of money wages which leave any subsequent changes in prices to appear as an act of God. "If a rise in nominal wages," says Professor Mossé, "is followed by a rise in prices, the result will possibly be in the end a fall in the real wage, contrary to the intentions of the contracting parties or the arbitrators. We must therefore consider the determination as a complex whole, resulting, on the one side, from the decisions of individuals and groups, . . . and, on the other, from the blind forces of the economy which, through the movement of prices and quantities, can change the outcome of the decisions taken." But when methods of economic analysis are applied to real wages, these forces of the economy no longer appear blind.

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Conference on Research in Business Finance. (New York: National Bureau of Economic Research, 1952. Pp. xviii + 340. \$5.00.)

THIS book is a collection of papers presented at a conference held in June 1950 by the Universities-National Bureau Committee for Economic Research, in the United States, together with comments by some of the participants.

The papers fall into four groups. The first group summarises and reviews the statistical material so far available on the "sources and uses" of business funds in the United States. Loughlin F. McHugh describes the development of historical series on sources and uses of corporate funds; Charles H. Schmidt reviews the material for analysing the effects of business size on sources and uses of funds; Lawrence Bridge discusses the financing of investment by new firms. Of these the first is of greatest general interest, at least to a British reader. Loughlin McHugh's description of the Department of Commerce estimates of sources and uses of business funds (which now appear regularly in the *Survey of Current Business*) makes one wish that similar series were compiled in the United Kingdom. Charles Schmidt's paper is largely devoted to reviewing the existing statistical material on the financing experience of firms of different sizes and making sug-

gestions for its development. The author is plainly much concerned with the problem of judging the adequacy of the financing opportunities of small firms; for this purpose, however, statistical material of the kind he describes is not in itself sufficient. As a result, his paper is somewhat inconclusive. This also applies to the paper by Lawrence Bridge on new firms.

The second group of papers deals with the factors influencing the demand for funds by business enterprises and the problem of projecting business capital requirements. Edgar M. Hoover and Burton H. Klein analyse the problem and discuss procedures, while Albert R. Koch suggests and himself applies a method of projecting expenditures and financial requirements of manufacturing corporations under full-employment conditions. These papers are of considerable interest, especially in their treatment of the problem of projecting fixed capital formation. Attention is (rightly) focused on the analysis of the growth of the capital stock, and many of the practical problems involved in forecasting its future movement are well discussed. Albert Koch's projection is obviously a very primitive affair, but it seems to be a start in the right direction. There is a clear need for further research in measurement and analysis which might lay the foundation for improved techniques of projection.

The third group of papers consists of an exploratory study by Neil H. Jacoby and J. Fred Weston of managerial decisions in determining forms of business financing, and a short paper by Homer Jones investigating factors influencing the form in which funds are made available for business investment. Both of these papers are rather inconclusive. Messrs. Jacoby and Weston, after demonstrating the inadequacy of present knowledge of their subject, offer a long classified list of possible influences on financing decisions without much discussion of relative importance or mutual relations, and conclude with another long list of subjects for further research. This sort of thing surely does not advance knowledge much. The paper by Homer Jones betrays something of the same preference for asking questions over trying to answer them.

The fourth group of papers gives theoretical analyses of the problems which face businesses when they are taking decisions about financing. David Durand discusses the problem of measuring the costs of debt and equity funds, while Franco Modigliani and Morton Zeman consider the effect of the availability of funds, and the terms thereof, on business investment. Durand's paper, which is devoted largely to a discussion of methods of capitalising expected future earnings, seems to suffer from a lack of clarity about

the objectives of the decision-making group in the firm: is it supposed to be aiming at maximising the total investment value of the enterprise or the total value of the stock? This conflict is never clearly resolved.

The paper by Messrs. Modigliani and Zeman presents a penetrating theoretical analysis of the choice between bond and equity financing and subjects the conclusions to empirical testing on time-series for the period 1921-49. One may perhaps doubt, however, whether the formulation of the "risk factor" really covers the ground. The disinclination to finance oneself entirely from bond issues is surely not due merely to the fact that expectations of average future earnings from the new investment are liable to error: it also reflects the fact that they must be expected to fluctuate from year to year, even if the average level agrees with expectations. In years of low earnings it is an embarrassment, or worse, to be saddled with heavy prior charges. Moreover, it is not the extent of expected fluctuations of earnings on the new investment alone, but of the total earnings of the firm, which are relevant to the financing decision.

The statistical testing is hampered by the extreme difficulty of finding series that can be regarded with any plausibility as measuring the expectation factors. The results fail to reveal any measurable effect of "risk aversion," and this is perhaps not altogether surprising in a time-series analysis covering a relatively short period.

It is difficult to sum up the book in a general impression. Perhaps more than in most symposia the contributions vary in subject, approach and quality. Probably few British economists will want to read it from cover to cover, but many will find one or other of the articles to be of some interest. It is a sad reflection that a United Kingdom conference on the same subject would find it hard to fill a volume of anything like the same size.

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Low Tariff Club. A Council of Europe contribution to the study of the problem of lowering customs barriers as between member countries. (Strasbourg: Council of Europe, 1952. Pp. 9 + 118.)

THE origin of this book was a request by the Committee on Economic Questions of the Consultative Assembly of the Council

of Europe for a study of "the general problem of the establishment of a single market in Europe and, in particular, the possibility of establishing in Europe a 'Low Tariff Club' as a first step towards European unification and the abolition of customs barriers." The requested study is presented in Part I of the present publication. The meat of the contribution is Professor Ohlin's proposal to reduce intra-European tariffs by the following procedure: First, all participating countries would agree by convention not to levy against each other any customs duty exceeding 35% *ad valorem*. Second, import duties imposed on intra-European trade would be lowered, by stages, to 25% for finished goods, to 15% for semi-finished goods and to 5% for raw materials. Third, the convention should be open to other countries, provided they are willing to accept the obligations contained therein. The Secretariat General of the Council of Europe have, further, given some consideration to the problem of how to reconcile a scheme such as the above for the reduction of tariffs in Europe only, with obligations (under the General Agreement on Tariffs and Trade and other agreements) to grant most-favoured-nation treatment to a host of extra-European countries.

The Secretariat General has added on to its assigned task "a theoretical study enabling practical solutions to be explored in the light of the general theory of international trade." Doubtless it is important that persons concerned with practical work in this field should appreciate that the creation of a common customs area really involves, at least in some degree, a common taxation policy, a common budgetary policy, a common employment policy, a common investment policy and a common defence policy between the members of the countries participating in the customs union. The "theoretical study" appended to the main Report contributes something to an appreciation of this fact. It might, however, have been more useful if the Secretariat General had followed rather more closely the Committee's instructions, that is, if they had devoted the greater part of their space to the solution of the practical problems of the Low Tariff Club and less space to their "theoretical study." As it is, the "theoretical study" is far longer than the main Report. Parts of this study do bear upon the technical problems to be solved (*e.g.*, Ch. 7), but other parts (Chs. 2, 3 and 5) seem to add little to practical knowledge, and to be of questionable validity as pure theory.

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The International Labour Code 1951. THE INTERNATIONAL LABOUR OFFICE. (2 volumes). (Geneva: The International Labour Office, 1952. Vol. I. Pp. v + 1181. Vol. II. Pp. v + 1220. 60s.)

IN 1941, when the future of the world lay in darkness, the International Labour Office published *The International Labour Code 1939*. It was "to be used according to circumstances either as the last will and testament of the Organisation or as an essential part of the title deeds to the future." In either case its publication meant an act of faith in the future of the world. At the same time it proved that no post-war scheme of reconstruction could do without the experience and guidance of an international authority such as the International Labour Office. Now, ten years later, *The International Labour Code 1951* has become available. It renders account of thirty years of faithful labour for the benefit of labour. It is indeed a monumental work about which it must be said that administrators, students of social policy and lawyers alike will find it both fascinating and indispensable. Their gratitude, admiration and respect are due to Mr. Jenks, the Assistant Director-General and Legal Adviser to the International Labour Office, whose name does not even appear on the title-page, but whose initiative has brought about the publication of the earlier volume as well as the two recent volumes, and whose scholarship and sense of responsibility pervade the work and give it its unique character. Having said this much, a reviewer ought to proceed with an elaborate discussion of what he genuinely regards as a great achievement, but the riches of this work are such that within the allotted space he cannot do much more than attract the reader's attention by a description of the contents and purpose of these volumes.

If the General Conference of the International Labour Office, the Parliament of its sixty-five member states, by a majority of two-thirds has decided to adopt a proposal on the agenda, it may by the same majority embody its decision in international Conventions or in Recommendations. The former, which at present comprise 100, are "obligation-creating." The latter, of which ninety-two exist, are merely "standard-defining" instruments or "guides to national action." Theoretically the distinction between the two types of instruments seems to be clear and well defined. But, as the Preface explains (p. lxviii), it is "less absolute in practice than in legal principle. Experience has shown that Conventions produce a substantial part of their practical

effect as standard-defining rather than as obligation-creating instruments." In these circumstances (which should be carefully considered by those interested in the nature and making of law) it became possible to combine both Conventions and Recommendations into a single Code of 1,666 Articles, though each of the 175 Chapters is subdivided into Obligations and Recommendations. Therefore *The International Labour Code 1951* "is not primarily a code of international obligations, but a code of internationally approved standards, certain of which are capable of becoming, and have in many cases become, binding upon States by reason of the ratification by those States of the relevant international labour Conventions, and in respect of all of which members of the Organisation have an obligation to report on the position of their national law and practice at appropriate intervals as requested by the Governing Body" (Preface, p. lxx). But in the exercise of its standard-defining functions the International Labour Office has also adopted a third, less formal procedure which has resulted in numerous resolutions, conclusions and reports adopted by expert committees and *ad hoc* conferences, bodies representing particular industries (such as the Joint Maritime Commission, Industrial Committees, the Permanent Agricultural Committee), regional conferences and other bodies. The standards of policy laid down in these various ways have for the first time been systematically collected in the second volume of the work under review. They are valuable guides, though, of course, they do not enjoy *The International Labour Code's* "unique prestige of having been approved by a two-thirds majority in a world industrial parliament in which Governments, employers and workers are all represented" (Preface, p. lxviii).

Whoever desires to be informed about minimum standards in the field of labour policy in the world (and the International Labour Office is only concerned with minimum standards) will recognise *The International Labour Code 1951* and its Appendices as the paramount source of instruction. The field is indicated by the headings of the Code's twelve books: employment and unemployment; general conditions of employment; employment of children and young persons; employment of women; industrial health, safety and welfare; social security; industrial relations; the administration of social legislation; the international seafarer's code; social policy in non-metropolitan territories; migration; and statistics and other information. There are also copious notes giving particulars of ratifications and references to preparatory material, literature and so forth.

In his Foreword the Director-General, Mr. David A. Morse, points to the fact that the International Labour Office and its achievement rests on agreement and consent: "*The International Labour Code*, as such, binds no one. It is a code of standards, evolved by tripartite discussion, substantial parts of which have been widely accepted as binding by the ratification of the relevant Conventions by the countries concerned." Let those who frequently despair of, or are impatient with, the development of international law, be heartened and guided by the example of the International Labour Office and its *Code*.

F. A. MANN

London.

The Danish System of Labor Relations—A Study in Industrial Peace. By WALTER GALENSON. (Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1952. Pp. xiii + 321. 25s.)

THIS book gives a comprehensive picture of the structure and methods of industrial relations in Denmark. When comparisons are drawn they are mainly with Norway and Sweden, but interesting contrasts are occasionally suggested with Britain and the United States.

The distinctive feature of Danish industrial relations is that of a powerful employers' central federation which has endeavoured, with some success, to prevent the trade unions from playing off not only one employer against another but also one industry against another. This has been done by ensuring that the annual date for expiry or revision of the collective agreements for all industries is the same, by binding the members of the employers' central federation not to make general increases in wages without the consent of the central federation and by placing a large share of the responsibility for the final negotiations (failing settlement within the individual industries themselves) on the central employers' and workers' federations.

Other notable features of the Danish system include the sharp contrast between disputes regarding rights and disputes regarding interests. The former are regarded as judiciable, and come before the Labour Court or Industrial Arbitration Boards. These bodies can enforce their decisions, the Boards having power to award damages and the Court having the additional power to impose fines. Disputes concerning interests, on the other hand, are the subject of negotiation and mediation. All of this procedure,

even to the extent that it involves Government intervention, has been built up with the agreement of the employers and workers, who, on the whole, despite occasional irritation at adverse decisions, have desired its continuance. It is the one remaining stage in the system of industrial relations—what happens failing agreement in disputes over interests—which has caused controversy in Denmark. Failure to achieve agreement in collective bargaining has been followed on a number of occasions in recent years by the imposition by means of *ad hoc* legislation of terms upon the parties. In most cases the terms so imposed have been those proposed by the Government mediator in the earlier stages of negotiation. The reaction of the employers to this departure from the principles of free collective bargaining has been more adverse than that of the workers—a circumstance which may be explained by the fact that the terms imposed have usually been those previously rejected by the employers.

All this and much more that is novel and interesting in the Danish system of industrial relations is narrated and expounded by Professor Galenson with admirable precision and clarity. We see the system as it is laid down in agreements and legislation, and we see how it works in practice. What, however, are the conclusions to be drawn and the lessons to be learned? In the first place, the system has led to a remarkable degree of stability over long periods in wage levels, but the author concludes that it has also led to a degree of rigidity in the wage structure which may have hampered industrial development. He suggests, too, that the system which has grown up in Denmark has given the country an impressive degree of freedom from labour conflict. However impressive the record may appear to American readers, it will appear less so to some here. Figures of days lost by labour stoppages have in several countries become so small as to cease to be significant, and are, in any event, difficult of comparison. Nevertheless, the figures published by the International Labour Office in its *Year Book of Labour Statistics* for number of days lost per 1,000 persons employed in mining, manufacturing, construction and transport show that, for both the five-year periods immediately preceding and succeeding the Second World War, the Danish record was less favourable than that of a number of European countries, including the Netherlands, Switzerland and the United Kingdom.

The author shows that the system has also led to a degree of centralisation of wage policy which it is unusual to find associated with a considerable degree of freedom of collective bargaining.

He questions whether it has not, however, at the same time led to a "spirit of corporatism" which is not conducive to industrial efficiency and expansion. While warning against any attempt at literal transplantation of Danish institutions to an alien soil, he suggests—and it may be regarded as his main conclusion—that the Danish experience may throw new light on the problems of other countries which are endeavouring to solve economic problems through means which are consonant with political democracy.

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The Miners: Years of Struggle. By R. PAGE ARNOT. (London: Allen & Unwin, 1953. Pp. 567. 35s.)

IN this second volume Mr. Page Arnot carries his history of the Miners' Federation from 1910 up to, and a little beyond, the General Strike of 1926. He is a tendentious historian, who sets out on his journey with his mind already made up and with no disposition to see the other side of any case in which the Miners' Federation was involved. Within this limitation he tells his story well and effectively, with adequate documentation and the capacity to expound a matter clearly and to make even the more complicated issues interesting. As a Communist, he cannot resist the temptation of turning aside now and then to extol the doings of the Communist Party, or to laud the help given by the Russian miners to their British comrades; but on the whole he has exercised restraint in this respect—as he doubtless needed to do in his capacity of official historian of the Miners' Federation.

His narrative, long though it is (567 pages), is strictly an account of the Miners' Federation of Great Britain rather than of the miners' movement as a whole. Except where a particular strike took on a national importance, he has little to say about developments in the separate coal-fields: he is intent rather on recording the national struggle of the Federation for public ownership and for the determination of wages and conditions by national bargaining. His story opens with the Federation's attempts before 1914 to secure a national minimum and a unified basis for wage-negotiation, and also improved safety legislation. At this stage the miners were already pressing for nationalisation: and Mr. Arnot analyses the differences between their Nationalisation Bill of 1912 and the proposals for a largely representative Mining Council which they put before the Sankey Commission in 1919, when their leaders were largely under Guild

Socialist influence. He also studies more briefly their later reaction against "workers' control" and their acceptance of the form of public corporation advocated by the Labour Party from the 1930s; but these later developments fall for the most part beyond the scope of the present volume.

In this volume attention is focused chiefly on the succession of disputes which occurred between 1919 and the General Strike of 1926, and involved at every stage appeals from the miners for help from the Trade Union movement as a whole. When, in 1919, the Lloyd George Government refused to carry into effect the report of a majority of the Sankey Commission in favour of nationalising the mines, the Miners' Federation appealed to the Trades Union Congress in the vain hope of securing its support for a strike policy intended to force the Government's hand. Failing in this, the Federation turned, in 1920 and 1921, to its partners in the Triple Industrial Alliance for help, first in enforcing their claim to a wage-increase and then in resisting the wage-reductions demanded by the colliery owners when the Government decontrolled the industry at the beginning of the post-war slump. Disappointed, on "Black Friday," by the defection of their allies, the Miners' Federation leaders turned again, at the next serious crisis, to the Trades Union Congress, and were successful in winning its help against the owners and the Government in 1925. On that occasion the Government, unready to face a general strike, bought time by the expedient of a temporary subsidy; and when the crisis recurred the following year the Trades Union Congress found itself virtually committed to strike action in the miners' defence. The General Strike followed, but was ignominiously called off after nine days: the Miners' Federation, refusing to recognise defeat, struggled on for months until its members were driven back to work by sheer starvation.

Behind these successive collapses lay an unresolved issue of Trade Union democracy. First the miners' partners in the Triple Alliance and, later, the Trades Union Congress General Council claimed that when other Unions called their members out in the miners' support the right to decide what terms of settlement should be accepted should pass from the Miners' Federation to the whole of the Unions involved in the dispute. The miners' leaders, wedded to a theory of democracy which required them on every occasion to seek a mandate from their own members, and to accept their members' decision, would never agree to surrender the right to decide on terms of settlement into anyone else's hands. On this rock broke first the Triple Alliance and then the attempt to

support the miners by united Trade Union action in 1926. On the issues involved in these recurrent disputes Mr. Arnot takes his stand unquestioningly on the miners' side—so much so that he fails to provide any fair statement of the opposing case or even to make the situation clear. Even if he is correct in saying that in 1925–26 the Trades Union Congress General Council made no proper preparations for the coming struggle and that there were among its members individuals who were seeking from the outset pretexts for letting the miners down, it remains true that the miners were exceedingly awkward allies, and that under the leadership of Herbert Smith and Arthur Cook they followed a stubborn policy that could not possibly have succeeded unless the General Strike had turned into a revolution—which practically no one on the Labour side wanted it to do. That the coal industry in the 1920s was faced with economic problems which nationalisation could have done but little to solve, at any rate in the short run, was evident even at the time; but the reader of this book will have to read that between the lines of Mr. Arnot's narrative.

Despite this obvious partisanship, the book is good—a great deal better than the previous volume, which was put together without nearly enough research. For the period covered in the present volume Mr. Arnot knows his facts at first hand, and has the full records of the Miners' Federation to keep him on the right track. His hero is Arthur Cook, that impassioned leader who was so largely responsible, by the very qualities of sincerity and simple revolutionary fervour which constituted his appeal, for leading the miners to the disaster of 1926. It can be argued—and Mr. Arnot does argue—that in bringing this calamity upon themselves the miners saved the soul of the Trade Union movement and helped to protect other Trade Unionists from a like fate. There is much in that; but it is not the whole story. Even if the miners were justified in fighting on after the General Strike had collapsed, there was no purpose in fighting long after defeat had become inevitable and prolongation of the struggle was bound to make the final terms of settlement even worse. To say this is not at all to exempt the Government of the day from Mr. Arnot's accusation of having been false to its own pretences of impartiality and of having deliberately provoked the General Strike when it could have been avoided by honest dealing. But when the full history comes to be written objectively it will hardly be in such colours of black and white as suit Mr. Arnot's purpose.

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G. D. H. COLE

The Life and Times of Sir Edwin Chadwick. By S. E. FINER.
(London: Methuen, 1952. Pp. x + 555. 42s.)

AN adequate account of the life and personality of Edwin Chadwick has long been overdue. Not only was he for several years one of the most hated men in Britain, but his name is inseparable from the tremendous innovation of the New Poor Law of 1834 and from the perhaps equally notable innovation of the "sanitary idea," the idea, that is to say, that the towns of the 1840s could not survive with a system of water supply and refuse removal handed down with comparatively slight alteration from the times of Henry VIII. Chadwick's work, indeed, was essential to the process of industrialisation itself. His New Poor Law liberated the half-employed agricultural labourers of southern England for more productive employment; and his "sanitary idea" sought to ensure that, should these labourers come to the towns in search of work, their lives would not at once be imperilled by official incompetence, corruption and neglect.

Bentham's writings on jurisprudence depicted the task of government as the reconciling of private with public interests; Chadwick's life was devoted to promoting this reconciliation. He did not, as his opponents asserted, hanker after centralisation for its own sake; he wanted what he believed to be the most efficient means to secure the conditions for the ideal functioning of private enterprise, and this was not altered by the fact that as time passed he saw more and more need for government activity. His interpretation of *laissez-faire* was thus such as to ally him more nearly with Marshall than with Senior, Torrens or James Mill. His views on raising the standard of living of the working people, on the other hand, were, if anything, behind those of his non-Malthusian contemporaries. He believed that social amelioration could be achieved only through increased production; but this led him to be willing to impose the severest sufferings upon the poor in the name of their *future* well-being. He believed, as Professor Finer emphasises, that "truck should be encouraged, trade unions curbed, the ten hours' day shelved for the twelve hours' day. Capital meant productivity; more capital, more productivity; and more productivity, more well-being" (p. 27). But misery to-day will not guarantee happiness hereafter, any more in the economic than in the moral world; and in the hands of a ruthless bureaucrat such a doctrine too easily comes to confuse means with ends.

Such facts of Chadwick's life and opinions are well brought out in Professor Finer's scholarly study, and he also makes clear the two main difficulties with which Chadwick had to contend—the contemporary system of government and his own character. The great political families of the day were given to nepotism, and urban governments to cruder forms of corruption; both stood in Chadwick's path. But few men can have made so many difficulties for themselves. Resolute and yet by the same token obstinate, incapable of compromise or of giving way gracefully, Chadwick was as unswerving in his devotion to a bad as to a good cause. From experience he learned nothing, and his conviction of his own rightness led him into a search for personal power. Convinced that no one else had the knowledge or the ability to do as much good as he in his chosen spheres, he rode roughshod over opposition, coerced majorities without a scruple, and always looked upon public opinion as something to be led: Professor Finer points out that this attitude appears as early as 1832 in the fragment on "Police": "the law must be made to conform to public opinion or the public opinion must, by means of public instruction, be made to conform to the law." It was the second alternative which he followed" (p. 477).

The great bulk of the book is about Chadwick personally and about the controversies—many of which have now lost their interest—in which he was engaged. Professor Finer is disappointing only when he deals with the background to Chadwick's work and thought. Is it judicious to say, for example, that after 1815 "blue-blooded Cabinets grappled dazedly with strenuous novel forces which none of them could comprehend"? (p. 19). Some of these Cabinets, after all, contained Peel and Huskisson. Is Melbourne, admittedly a product of eighteenth-century culture, best described as one who "astonished delegations and informants by cuddling cushions or playfully pursuing a feather"? (p. 21). In what sense can it be maintained that the Poor Laws "regulated the migration of labour"? (p. 40). (It is a pity, incidentally, that the operatives' accusation that assisted migration in the 1830s was "organised black-legging" is left unexamined.) Is it true that the depression of 1837–42 was "the worst in English history" (p. 181), and why could "only repeal of the Corn Laws . . . restart the factories"? (p. 184). Complaints of this sort could be multiplied rather easily. Also, it would be interesting to know the reasons behind some of Chadwick's views on economic matters. Did he, for example, derive his hostility to trade unions from Senior, who objected to them

on the ground that they retarded technical progress? And was his belief (which Professor Finer shares) "that capital-equipment per head only increased as the masters' profits increased" (p. 56) derived from the evidence (which seems to be against it), or was it a generalisation of one of Ricardo's views on this subject? Professor Finer rather leaves Chadwick in a sort of splendid intellectual isolation, apart from his dependence upon Bentham; and he seems somewhat to under-rate the influence of Malthus upon the early nineteenth century.

The book is much more readable than the subject would lead one to expect. Chadwick was a dull fellow (it was noted in the Political Economy Club that, "It is one of the few unquestioned privileges of old age to be a bore, and this great man, I fear, discounted too freely, too early, and too heavily this privilege" (p. 509)), and sanitation and the poor law are not conspicuously heart-warming topics. Yet only a chapter here and there—most notably among those concerned with the interminable squabbles involving the Board of Health—leaves the reader wishing that it were shorter.

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Welfare Economics in English Utopias from Francis Bacon to Adam Smith. By J. K. FUZ. (The Hague: Martinus Nijhoff, 1952. Pp. 113.)

SOME Utopias have an economic problem, and others assume away all their economic scarcities and so are not within Dr. Fuz's scope. Those that he selects, beginning with Bacon in 1629 and ending with Wallace in 1761, are divided into individualists (Bellers and Mandeville), collectivists (Wistanley, Plockhoy and Wallace) and seventeenth-century Fabians (Hartlib, Chamberlen, Goffe), and it is in the economic values revealed by their plans to change or amend a society passing through great economic and political convulsions that his interest chiefly lies. The Utopians were interested in "the welfare of an individual, including his education and social security, the elimination of poverty or unemployment as such, or of some other socio-economic disorder," while the other welfare theorists, the Mercantilists, were interested more in the growth of state power and wealth, so that Dr. Fuz says their "only common feature . . . is the increase of physical output." This is an interesting division in the light of Dr. Talmon's distinction in "The Origins of Totalitarian Democracy" between the libertarianism of seventeenth-

century Utopians and more modern blue-prints, a distinction arising partly from the fact that the Utopians were swimming against a tide in the main part of their works, so that the precedents Dr. Fuz notes for modern policies are incidental and not necessarily seminal. Wistanley is the exception, as Dr. Talmon implies.

Bacon had no coherent views on the economic problems of his *Nova Atlantis*, but Dr. Fuz regards his work as important for the later history of Utopias, because for the first time organised and unlimited scientific progress is held to be the only way of maintaining human progress, and this view is fundamental to most of the other writers. Hartlib's *Macaria* ("the place of felicity"), for example, requires a highly organised and very rationalist state apparatus to develop agriculture and fishing, using the revenues of the Crown lands for this and abolishing all taxation except for a 5% inheritance tax and a progressive penal tax for unenterprising landowners. Hartlib, as befits a Pole with an English mother, who "lived these 30 years in England, being familiarly acquainted with the best of Archbishops, bishops, Earls, viscounts . . . Ministers, Professors of both Universities, Merchants, and all sorts of learned or in any kind usefull men", occupying himself with aiding Protestant refugees, was interested in the development of Plantations, to admit the surplus population of *Macaria*.

Chamberlen, the third Cambridge man among the nine, "wanted to nationalise the royal and clerical estates, commons, forests, wastes and mines, and have a development plan to provide for the poor" by increasing the national income. In that more self-reliant age underdeveloped countries had no aid, only trade, so he advocated an active trade policy. Goffe, too, who sat on the court that sentenced Charles I, wanted to industrialise to provide employment.

Wistanley, the first of Dr. Fuz's three Collectivists, abolished money and had output targets achieved under the guidance of elected overseers. All these Overlords meet in the office of Overseership, where all people are kept "within a peaceable harmony of Trades, Sciences, or Works." There was full employment of all up to the age of forty, then idleness until the age of sixty, when they became overseers. Everything is free and abundant: "If any persons be sick or wounded the Chyrurgeons . . . shall go when they are sent for to any who need their help, but require no reward." Academic education is the exception: "Traditional Knowledge, which is attained by reading, or by the instruction

of others, and not practical, . . . leads to an idle life, and this is not good."

And so they go on. The most interesting thing is that of the nine, four are continentals or of continental origin, and one a Scot. All were active Protestants with somewhere in the background a tinge of persecution for their dissenting beliefs. There is little theory about their ideals, as one would expect but for the title, and indeed the book is about their policies rather than their theories. But their intense concern with increasing production is sympathetic, and it is a pleasant idea to have quantitative estimates based on Gregory King.

J. E. VAIZEY

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Catalogue of Adam Smith's Library in the Possession of the University of Tokyo. Edited by TADAO YANAIHARA. (Tokyo: Iwanami Shoten, 1951. Pp. ix + 126. Yen 350.)

THE publication of this *Catalogue of Adam Smith's Library* is a long-awaited event. When James Bonar catalogued Adam Smith's library in 1894 for the Economic Club he lacked much information. A second edition prepared by Bonar for the Royal Economic Society, and published in 1932, was a great improvement over the first. He was able to make some additions and certain factual corrections but unable to check the items against a list of books made by Smith of his own library.

Smith willed his library to his cousin, David Douglas, later Lord Reston, who at his death gave it to his two daughters, Mrs. Cunningham of Prestonpans and Mrs. Bannerman of Edinburgh. The major portions of the original library are in the University of Glasgow (Bannerman Collection) and the University of Glasgow and Queen's University, Belfast (Cunningham Collection). Some of the original Cunningham portion was bought in London in 1920 by Professor I. Nitobe, who placed them in the Imperial University, Tokyo. In Bonar's *Catalogue* the Japanese items are identified by the letter "J".

Bonar was supplied by a Japanese correspondent with a list of the books in Japan, but the list contained errors. One entry, "A Catalogue of Books belonging to A. S. [sic] 1761 f4 I" (see Bonar, p. 174) caused him to refer to this item as "one of unique value." He further adds, "This list made either for or by Adam Smith himself, would show what was in his library at that date when he was Professor at Glasgow and had published the *Moral*

Sentiments, but no book on economics." This item has always intrigued both British and American scholars. Dr. Bonar himself remarks, "Perhaps our Japanese friends will satisfy our curiosity in this matter" (p. 214). The mystery of the wrong date given by Bonar as 1761 was cleared up by Professor W. R. Scott (*Adam Smith as Student and Professor*, pp. 172 and 390) who discovered the date to be 1781 and not 1761.

The volume under review clears up two things. First, it corrects the Bonar *Catalogue* listing of items now in Japan. Second, it gives, for the first time, the contents of the volume which was Smith's own catalogue of his library. The Japanese collection consists of 141 books or entries (308 volumes) of which 62 books or entries (98 volumes) are in English, 34 books or entries (43 volumes) in Latin, 28 books or entries (92 volumes) in French, 15 books (73 volumes) in Italian and 2 books (2 volumes) in German. The subjects cover a wide range of philosophy, literature and poetry, politics, history, geography, religion, natural history, art, language, mathematics and the like, but no book on economics save his own chief work and a German translation thereof.

An appendix, which is probably of greater interest, prints in full the contents of the item *Catalogue of Books Belonging to Adam Smith, Esquire, 1781*. This was prepared by or for Smith and written in longhand not by Smith but probably by a clerk. It contains about 1,120 books or entries (2,300 volumes). He used a curious method of identifying and locating his books in what he called "Divisions." The eighty-seven sheets of the handwritten book show the items as being located in his own cases in the "upper row" or "lying on the top," "left hand book case, shelf 1st, shelf 2nd," "book in locked press left hand window book case," and so on. The entries are brief and contain only the name of the book, number of volumes if more than one, but no date or place of publication.

In making this information available our Japanese friends have rendered a distinct service. Professor Yanaihara has carefully checked and listed the page references for each item against the Bonar *Catalogue*. The student will discover that many items in the catalogue of 1781 do not appear in the Bonar volume.

J. F. BELL

University of Illinois.

The Farmer's Tools, 1500-1900. By G. E. FUSSELL. (London: Melrose, 1952. Pp. 246. 42s.)

IN a scholarly work Mr. G. E. Fussell has presented a history of farm implements and machinery from the sixteenth to the end of the nineteenth century. Although manual tools are mentioned, there is little discussion of their evolution and improvement. An "implement" is defined as something inert, having no internal working parts essential to its operation, such as a plough, while a "machine" has internal working parts essential to its operation, such as a seed drill or a reaper. With one exception in that potato planters are treated in the harvesting section, treatment follows the agricultural seasons and processes from drainage, cultivations and seed-time to harvest and then to animal husbandry. Treatment is mainly technical. It is admitted that little reference is made to general history, but there is strangely little to changes in the techniques and processes of agriculture or in its economic environment. These may be often inferred from changes in equipment, but there was commonly a long lag between invention, exhibition, demonstration and widespread use on farms. The course of development was directed by curiosity, propensity to experiment, emulation, competition and even jealousy, together with economic opportunities and pressures. In the earlier periods promotion of ideas and experimental construction was largely by agricultural theorists and by well-to-do farmers and some landlords, assisted by local artificers. Local agricultural societies and the Royal Society of Arts fostered experiments and demonstrations in the eighteenth and early nineteenth centuries, and after 1839 were led by the Royal Agricultural Society. Much of the early construction was done by local smiths and wheelwrights, but as each machine was developed, local firms specialised to some extent in its production and promotion of use. There is evidence of the very wide distribution of local foundries with capacity for development and enterprise. But as the design and construction of implements and machines became firmly known, specialist firms of agricultural engineers developed. Contracting service in the use of new equipment frequently appeared.

Invention and application were highly subject to the wide variety of soils and sizes, shapes and contours of fields; to the previous customary types of implements in use and to local preferences and even prejudices. Application was frequently hindered by conditions of transport. Apparently there was little

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Invention and application were highly subject to the wide variety of soils and sizes, shapes and contours of fields; to the previous customary types of implements in use and to local preferences and even prejudices. Application was frequently hindered by conditions of transport. Apparently there was little

consideration of mechanical principles before the second quarter of the nineteenth century, and although there was much publicity in various forms, most inventors and adaptors individually puzzled through their own problems. And often, as in the cases of the reaper and the threshing machine, the first attempts were to copy manual and other previous processes: the sickle and the scythe for reaping; the flail and the flax-mill for threshing. No progress was made until new principles were applied.

The processes and purposes for which new implements and machines were desired were extremely complex. In the case of the drill there were problems of depth of sowing, of distance between rows, of regulating the flow of seed and of fitting the drill points to the varying contours of the soil. With the reaper there were problems of the cutting mechanism, of avoiding necessity for the horse or man to walk in the uncut grain, of pushing or pulling, of holding the straw to the cutting mechanism, of delivering the cut grain in a swathe or bundles. And as these were solved there was the problem of binding sheaves, first solved by wire and then by twine. Threshing posed two sets of problems—of fully removing grain from straw without bruising or splitting grain and without too much damage to straw needed for thatching; then of separating grain from chaff and the sound grain from the under-sized and from weed seeds, and generally cleaning and sacking the grain for market or storage.

Application was always subject to failures of understanding and appreciation on the part of users, both farmers and farm-workers. On the difficulties of securing widespread use of the drill, Mr. Fussell says "human limitations were the more decisive." It is at such points that the economic historian will miss any connected treatment of economic and social conditions, and must find relationships for himself or make his own inferences. For instance, in the case of grain production, harvesting processes everywhere required additional farm labour, sometimes the whole village population, up to 1880, and in some localities practically to the end of the century. Whereas the threshing-machine, which had become very common by 1860 and practically universal by 1880, robbed workers of their winter employment of threshing in the barns with the flail. Seasonal unemployment, accompanied by demands for allotments, was rife in many districts. "Three acres and a cow" can be closely related to this discrepancy in developments.

The objects of improvement in farm implements and machinery were multitudinous. Among them, those of securing better

cultivations, better coverage and more economical use of seeds, and thus higher or more economical yields of crops; to lighten draft, reduce requirement of muscular energy of animals and men; and secure economy in use of land and power while improving processes for their end purposes. Speed of work, ability to conduct processes during the most favourable periods, were also important. The change in source of power from the ox to the horse had a close connection with these purposes. Next in importance were the securing of higher yields from crops in both growing and harvesting processes, the production of more satisfactory end products, the reduction of requirements of seasonal labour and sometimes the securing of more freedom in employment of refractory workers. In animal husbandry the aim was first to secure greater variety and higher standards of animal feeding as understood in various phases of development—as illustrated by changes in barn machinery—and later to economise in labour, and thus lower the cost and improve the quality of products—as in the case of the milking-machine and the cream separator.

Achievements in respect of these and other purposes made an enormous contribution to the industrialisation of Great Britain and the increase in national wealth during the late eighteenth and nineteenth centuries.

Mr. Fussell's work relates primarily to Great Britain. While there are some references to European countries and to the United States of America, a fuller review of the history of farm and related equipment would require more extensive reference to external developments. The work includes a short glossary of terms, notes of references covering some seventeen pages, a general bibliography of five pages and an index. Readers will find some handicap in referring to illustrations, which often precede the relevant text by several pages. At some points drawings of working parts of implements, and particularly machines, would usefully supplement descriptions in the text and serve the more technical purposes of the work. In spite of its limitations, use of this work will be essential for any revision or development in the economic and social history of agriculture in the eighteenth and nineteenth centuries.

A. W. ASHBY

Oxford.

Studies in Roman Economic and Social History, in Honor of Allan Chester Johnson. Edited by P. R. COLEMAN-NORTON. (Princeton, New Jersey: Princeton University Press (London: Geoffrey Cumberlege), 1952. Pp. xiii + 373. 32s. 6d.)

IN this *Festschrift* twenty-three American, British and Continental scholars offer short papers in honour of Professor A. C. Johnson, who in the course of some forty years at Princeton has made many important contributions to the study of Roman history. Many of the articles are highly specialised, but even those who are not classical scholars may profitably read, for example, the useful brief summary by the late Mr. M. P. Charlesworth, "Roman Trade with India"; a very interesting study by Professor C. Bradford Welles, "The Population of Roman Dura"; and a well-documented account by Professor Glanville Downey of "The Economic Crisis at Antioch under Julian the Apostate" in 362-3, one of the very few occasions in antiquity on which we have some really valuable information about a local famine. Professor T. R. S. Broughton, by showing from a recently discovered inscription that the Hellenistic kings did not confiscate the land of Zeus of Aezani in Phrygia, but actually added to it, removes what seemed to be the one piece of evidence in favour of Ramsay's once popular theory that much of the land of Asia Minor was owned in pre-Classical times by temples, from which it was taken by the Hellenistic kings and the Romans. Professor Ronald Syme, who appears to set out with the modest aim of proving that "Thubuseum" in Tacitus, *Annals* iv. 24.1, is Thubursicu Numidarum, proceeds to make a series of instructive comments on the gradual Romanisation—that is to say, urbanisation—of Numidia. Professor André Piganiol, "Sur le calendrier brontoscopique de Nigidius Figulus," discusses that curious document, the calendar of interpretations of thunder-omens, showing an obsession with civil strife between upper and lower classes, which John Lydus inserted in his *De Ostentis*. Professor Piganiol sees Babylonian and Etruscan elements, but places the substantive compilation in late Republican times and refuses to admit Byzantine interpolation.

Three papers are concerned with early Christianity. Professor Andreas Alföldi, "The Initials of Christ on the Helmet of Constantine" (with illustrations of coins), adduces a further piece of numismatic evidence in support of the view, now accepted by most scholars, that Constantine was converted to Christianity before his victory over Maxentius in 312. Professor W. K. Prentice dis-

cusses "James the Brother of the Lord," adding some sensible if hardly relevant remarks about the events following the Crucifixion. Dr. P. R. Coleman-Norton, "The Apostle Paul and the Roman Law of Slavery," overloads his chapter with footnotes and ends by repeating the familiar excuses for Paul's failure to condemn the institution of slavery. To say that Paul "strikes at the real root of slavery" is to darken counsel in precisely the way the Stoics and Cynics did when they assured the good slave that he was really not a slave at all.

Besides Professor Alföldi's, there are five numismatic contributions, by Dr. J. G. Milne, Professor A. R. Bellinger, Professor Michael Grant, Dr. L. C. West and Mr. Harold Mattingly, the most successful of which is Mr. Mattingly's "The Clash of the Coinages circa 270-296." Special attention is paid here to coin hoards, a kind of evidence which historians of the later Roman period have not yet used to the full, partly of course owing to inadequate and scattered publication. Dr. West's correction from 50,000 to 60,000 denarii of the value of a pound of gold in Diocletian's Price Edict of 301, on the ground of a supposed stone-cutter's error, has little to recommend it.

Professor David Magie offers a convincing emendation of the inscription from Cibyra honouring Q. Veranius Philagrus (*IGRP* iv, 914, line 14: $\pi\rho\acute{\alpha}\xi\iota\upsilon$ for $\pi\rho\acute{\alpha}\sigma\omega$). Professor H. C. Youtie cleverly reinterprets the fragmentary *P. Heid. Inv.* 1818 as a list of an apprentice's working days and times of absence. Professor A. E. R. Boak sets out and assesses the scanty evidence for "Tesserarii and Quadrarii as Village Officials in Egypt of the Fourth Century." Dr. C. H. Coster presents the evidence for "The Economic Position of Cyrenaica in Classical Times." Professor John Day is no doubt right in refusing to accept Dio Chrysostom's Euboean Discourse as reliable evidence "for conditions in Euboea or for any other specific place"; but much of the factual material he brings forward is scarcely relevant, and gives less support to his case than he himself assumes. Professor Lily Ross Taylor writes on "Caesar's Agrarian Legislation and his Municipal Policy," Professor A. E. Raubitschek on the origin of the Athenian "Sylleia," and Professor G. E. Duckworth on "Wealth and Poverty in Roman Comedy." The book ends with a chapter by Professor Peter Charanis on "The Aristocracy of Byzantium in the Thirteenth Century," the merits of which I am not competent to assess, but which makes interesting reading.

Although most of the articles are well worth attention, and the general level of scholarship is high, the volume as a whole is

somewhat disappointing, as the scope of most of the contributions is rather restricted and there are none of outstanding interest, except perhaps that of Professor Welles. The book has been well edited and produced, and there are very few misprints; the plates (8 pp.) are admirably clear, and there is a useful Index.

G. E. M. DE STE. CROIX

London School of Economics.

The Economic Development of Poland, 1919-1950. By J. TAYLOR.
(Cornell University Press (London: Geoffrey Cumberlege),
1952. Pp. vii + 222. 24s.)

MR. TAYLOR has written a careful and detailed study of the economic development of Poland in the inter-war years. His main piece of work is necessarily preceded by a summary of the economic history of Poland before the resurrection of 1919 and followed by a chapter on Poland after the Second World War.

There is much to commend this book. It is accurate, clear and impartial, and those who were in any way acquainted with Poland or Polish affairs in between the two wars will turn to it readily to re-affirm their views on a short but intensely interesting piece of economic history in East Central Europe. It is not original, and those who have no actual remembrance of the Polish landscape, and of the shocking and widespread poverty amongst the Polish peasants, will probably find it rather dull, especially as so much is presented in the form of statistical tables. But it remains a useful study of an intricate phase of Polish development, and contains the fullest account so far written in English of the Central Industrial District plan for the problem area between the Vistula mainstream and San tributary.

A geographer would plead in a fresh edition for a map to accompany Chapter II; a clear black-and-white line-block diagram would suffice.

A more general criticism might be of the slight emphasis on some important topics. The Jewish role in Polish economic life is certainly mentioned, but there should come in the *first* introductory section a comment on the Jewish Pale in the Russian Empire, and of the near monopoly by the Jews of manufacturing activity in Russian Poland before 1914: there is lacking, also, any discussion of the curious contrast between the lot of the Jews in Russian Poland and those in Austrian Poland. Peasant movement to the New World is alluded to more than once, but again the extent of its influence on early twentieth-century Poland is hardly appreciated.

In the main section of the book the effect on Polish agrarian society of a surviving aristocracy is scantily treated. A little more comparison with like trends in other states would have been useful, for the rather meagre land reform in Poland and Hungary is so conspicuous in juxtaposition with the much more vigorous movements farther north and south and east. Quite clearly, in retrospect, land reform appears as a short-term and dangerous political remedy for a baffling economic evil. But those who remember Poland before 1939 probably also recall the unquiet atmosphere with a peasantry only just in restraint because of the intolerable and seemingly endless harshness of their lot.

Mr. Taylor's analysis and comment are perhaps too sedate to convey the unease of the "thirties" in Poland. But his book is convincing in its accuracy and lucidity, and it would be well if other regions of this unhappy part of Europe were to be the subjects of like studies.

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L'Économie Soviétique. By C. BETTELHEIM. (Paris: Sirey,
1950. Pp. 472. 1600 Fr.)

IN this book Professor Bettelheim sets himself the task of describing the machinery by which Soviet economy is run, and of showing by implication what differences exist between the Soviet and a capitalist economy. He does not discuss in this book as he does in his other book, *Les Problèmes Théoriques et Pratiques de la Planification*, the theory of planning; only in the summary (which occupies but eight pages) does he stress the principles which distinguish the Soviet from the capitalist economy and point out some theoretical problems of a planned economy.

His main theme is that despite many similarities in the institutional framework and the use of terms identical with those used in a capitalist economy, the Soviet economy is very different in substance from a capitalist economy, the similarities being only formal. There exist in the Soviet economy banks, trusts, profits, markets, contracts, wages, etc., but behind these identical words are concealed different realities. For example, the mechanics of prices are used, but the cardinal difference is that it is not prices which influence the direction of production but the planned decisions of the government, while readjustments

of prices follow these planned decisions in the sphere of the planned cost of production, of planned profit, of planned transfer-prices to wholesale markets and finally of planned retail prices, which are fixed with the aim of balancing supply and demand *a priori*. Contracts between enterprises exist, but they are used only as a means for the concrete implementation of the task fixed by the plan.

The author quite rightly stresses that all these differences originate from the fact of the nationalisation of the main means of production, and that consequently all readjustments regarding investment, production and distribution must be made *a priori*, by plan, and not *a posteriori* by the mechanism of price and exchange, as is the case in the capitalist economy. But unfortunately he does not go to the roots of these problems. The mere fact of the nationalisation of the means of production may only mean the replacement of the multitude of private entrepreneurs by a unified state entrepreneur. This would require the replacement of a multitude of individual plans by a unified general plan, but this replacement alone does not necessarily involve a cardinal change in the principles of the organisation of economic activity; even though the machinery, of course, would have to be readjusted in order to meet the change in the scale and scope of production and of the distributive activity of the state as entrepreneur.

Theoretically, it is quite possible for a nationalised economy to be run on the same principles, with but slight modifications, as a capitalist economy. In certain ways, this was the case in the Soviet economy during the N.E.P. period and, to give another example, in the practice of running British nationalised industries. The building of a new system of economy started in the Soviet Union when the investment policy of the first Five Year Plan was approached as a *purposeful* plan for the reconstruction of the whole national economy, in pursuance of the main aim of changing the economy of the country from an agrarian to an industrialised one. It was decided to carry out a large-scale building programme in the capital-goods industry as the main lever in changing the pattern of the national economy. This was a "macro" decision, which was made not only on the basis of purely economic considerations (development of the capital-goods industries as a basis for a possible future speedy development of consumer industries) but on meta-economic considerations as well (defence, the building of a basis for socialism, consideration of cultural development, long-term policy aiming

at the elimination of differences in the sociological pattern of life between town and village and so on).

This, of course, necessitated major readjustments in the system of the relations between the various branches of the national economy, especially of the relations between state industry and peasant economy, readjustment in the system of accumulation of capital for investment, in the system of organisation of the machinery for investment and of control over construction, and it necessitated the creation of a new system of taxation, a new system of regulation of industrial and agricultural prices and so on. These readjustments were made in the sphere of "macro-" and "micro-" economic machinery. The decision to concentrate first on the building up of heavy industry and not light industry led, first of all, to the necessity for adopting a definite price policy regarding agricultural products in order to make it possible to carry out this long-term policy of investment. Owing to this "macro" decision and owing to its influence on "external" economies a very complicated price system governing the relationship between the state sectors of industry and distribution and the agricultural sector of the economy was created. The price system, the rôle of the turnover tax, of profit and so on, would be very different if the "macro" decision had been to give priority to the development of consumer industries.

But the principles of "micro" economy (which is the main content of economic text-books) have been applied and could be applied given the one or the other type of macro decision. The decision to allocate available labour to the building of a steel plant or a textile plant in a planned economy has to be made on the basis of "macro" considerations of the aims of economic activity (if the planned economy is not merely a form of state capitalism), but what type of textile or steel plant is to be built, what output is to be achieved by the "highest technique" or by additional intakes of labour, to what limit production is to be continued and so on (all these concepts of "marginal revenue," "marginal efficiency of capital," of "marginal costs" are in reality common-sense considerations elevated to theoretical dignity by the economists)—all these considerations of the "micro" economy, although sometimes in disguise are present in the Soviet economy (for example, *Khozraschet* economic calculation). They are, however, seen in a proper perspective as technical devices *only* and not as indicators of the objects on which the available labour resources should be employed. The problem of the allocation of labour is decided in the light of the aims of

the economic activity of the society as a whole, at a particular stage of development.

The shortcoming of Professor Bettelheim's book is that he has not approached the analysis of the development of the machinery of the Soviet economic system in the light of this cardinal difference between the Soviet economy and a capitalist economy. He has concentrated on the description of similarities and differences in the technique of applying the principles of "micro" economy, whereas this technique is but the outcome of the economic policy pursued by the Soviet government and of the reaction of different branches of the economy to this policy. The plan is only a form of the implementation of economic policy. The weakest parts of his book are the chapter on the phases of economic policy (in which there are also many factual mistakes) and the superficiality of the illustrative material which he gives concerning actual economic policy and development in the main branches of the national economy.

As a general description of the machinery of the Soviet economy, this is quite a good reference book, but because of this general approach, it lacks depth in the interpretation of the essence of the Soviet economic system. It is written more like a juridical essay, arranged in orderly groups of paragraphs but without an examination of actual "cases" under judgment, without cross-illumination from one section of economy to the other and without an examination of the inter-relations between one concept and another. Such a cardinal problem as the rôle of incentives to economic activity in the Soviet planned economy is practically omitted in his analysis of the Soviet economic system, and without a discussion of this problem the description of the machinery of the Soviet economy becomes too formal and too schematic.

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Economic Problems of Socialism in the U.S.S.R. By J. STALIN.
(Moscow: Foreign Languages Publishing House, 1952. Pp. 104. 6d.)

THIS remarkable work, which should now perhaps be regarded as Stalin's political and economic testament, is worthy of the closest study by Western economists. The nature of its content, the unique authority of its author and the extent of its circulation (30 million copies have already been printed in Moscow) are bound

to make it one of the most influential economic documents of our epoch.

For some years now, discussions have been taking place in the U.S.S.R. concerning the nature and scope of the "political economy of socialism." The task of distilling the economic experience of the U.S.S.R. into the form of general theoretical propositions has proved, naturally enough, to be a difficult one, and it is now clear that in spite of the appearance of uniformity in Soviet writing on this subject since the war, a considerable controversy has been going on behind the scenes. Recently, after a long delay, a draft text-book on political economy was prepared, and a conference of Soviet economists was held in November 1951 to discuss it. Apparently the reports of the discussion (including a "Memorandum on Disputed Issues") were sent to Stalin, who wrote a series of "Remarks" (dated February 1, 1952) on certain points. These were addressed "To the Participants in the Economic Discussion" and circulated among them. Discussion then proceeded on the basis of the "Remarks," and in the course of the following months Stalin replied to criticisms put forward by a number of economists. At length, in October 1952, Stalin's "Remarks," together with his replies to the criticisms of four economists, were published in *Bolshevik* and subsequently reprinted in pamphlet form.

Some Western economists, accustomed to writing memoranda for ministers, may be rather sceptical about Stalin's personal authorship of these documents. And this much is certainly true—that Stalin's interventions in such matters were not merely the result of private whims. In March 1930, for example, at the height of the collectivisation campaign, the famous article "Dizzy with Success" (to which the work now under review bears a certain family resemblance) appeared in *Pravda* under Stalin's name. In April 1930, in another article in *Pravda* on the same subject, Stalin made it clear that he had written "Dizzy with Success" on the instructions of the Central Committee of the Party. "Some people believe," he said, "that the article, 'Dizzy with Success,' is the result of the personal initiative of Stalin. That is nonsense, of course. Our Central Committee does not exist in order to permit the personal initiative of anybody, whoever it may be, in matters of this kind. It was a reconnaissance on the part of the Central Committee." And it is probable that something similar happened in relation to the present work, which is written with extraordinary care and bears all the marks of an agreed statement. But no reasonable doubt can exist that the article as published was predominantly the personal work of Stalin. It is not only its

style which suggests this (style can be imitated), but also the continuity of thought which is revealed when it is compared with Stalin's earlier writings in this field. In an important sense the *Economic Problems* represents the culmination of Stalin's work in political and economic theory.

The *Economic Problems* is so many different things at once that it is difficult to describe any single theme as the leading one. Perhaps it is most useful to regard it as marking a further important stage in the development and amendment of the typical classical Marxist models of socialism and capitalism—which were constructed before the era of “monopoly capitalism” and “imperialism” (in the Leninist sense)—to fit the facts of the modern world. Take the case of the model of socialism, for example. If the typical proletarian revolutions of our time are in fact likely to occur (as Lenin and Stalin maintained) in countries which represent “the weakest links in the chain of imperialism” and which are therefore not necessarily advanced capitalist countries, it is clearly necessary to amend the classical Marxist assumption that *all* the means of production will be expropriated fairly soon after the seizure of power. For the “weakest links” may well have what Stalin calls “a fairly numerous class of small and medium rural owner-producers” (p. 15)—i.e., a large peasant class—whose expropriation will be economically and politically inconceivable. Some sort of compromise will therefore have to be arranged—the institution of collective farms, for example—which will mean that the agricultural sector will not be “publicly owned” in the full sense in which the state sector is “publicly owned.” The means of production in both sectors will indeed be owned by the state, but whereas “the state disposes only of the product of the state enterprises, . . . the product of the collective farms, being their property, is disposed of only by them” (p. 19). And in the U.S.S.R. at the moment, Stalin says, the majority of collective-farm peasants are unwilling to exercise this power of disposition over a considerable part of their product otherwise than by selling it on the market—a fact which obviously creates obstacles to “the full extension of government planning to the whole of the national economy, especially agriculture” (p. 76). Much of Stalin's article is devoted to a discussion of the theoretical and practical implications of this important feature of Soviet socialism. He is concerned in particular with formulating new concepts (and re-applying old ones) to deal with this situation; with estimating the extent to which it limits the possibilities of planning and the prospects of the transition from socialism to

communism; and with outlining a practical long-term policy designed to “raise collective-farm property to the level of public property.”

Although it is the “economic problems of socialism in the U.S.S.R.” upon which Stalin concentrates, the economic problems of capitalism in the West also receive a certain amount of attention. For example, there are indications in his treatment of “the basic economic law of modern capitalism” that he regards the classical Marxist model of capitalism as being in need of some amendment. “The law of surplus value,” he says, “must be made more concrete and developed further in adaptation to the conditions of monopoly capitalism” (p. 43). And there is an interesting and provocative section on “the disintegration of the single world market and the deepening of the crisis of the world capitalist system,” which contains a prophecy to the effect that industry in the major capitalist countries will henceforth “be operating more and more below capacity” (p. 36).

Interconnected with these central themes are several others of equal importance—the question of the nature of economic law under socialism, for example, and the problem of “the character and province of political economy.” In this discussion of these matters Stalin makes a number of comments on a particular question of special interest to Western economists—how far can economic laws be said to be common to all economic systems, and how far are they in effect specific to one particular system?

Marx and Engels were always primarily concerned to emphasise the fact that each system has its own, specific economic laws, and tended to be very sceptical about the possibility of putting forward any really useful “universal” economic laws applying to all systems. They were well aware, of course, that all forms of society have certain features in common, due to the fact that (as Marx put it) “the subject, mankind, and the object, nature, remain the same.” But they did not regard these common features as particularly interesting or important in themselves. The nearest thing to a “universal” economic law which they recognised, perhaps, was their own basic law regarding the role played by the “productive forces” and the “relations of production” (and the “contradiction” between them) in the process of social development. And even this law, they seem to have believed, would cease to operate when mankind emerged from “the pre-historic stage of human society” into socialism.

Stalin, on the other hand, although he is by no means concerned to minimise the great contrast between the laws specific to

capitalism and the laws specific to socialism, shows rather more respect for "universal" laws than Marx and Engels did.

"The various social formations," he writes, "are governed in their economic development not only by their own specific economic laws, but also by the economic laws that are common to all formations, such as, for instance, the law that the productive forces and the relations of production are united in one integral social production, and the law governing the relations between the productive forces and the relations of production in the process of development of all social formations. Hence, social formations are not only divided from one another by their own specific economic laws, but also connected with one another by the economic laws common to all formations" (p. 79).

To some extent this change of attitude may be due to a certain shifting of historical perspectives which I have tried to describe elsewhere; but in the main, I think it is made possible by Stalin's assertion that the basic Marxian law of social development does not in fact cease to operate under socialism, as Marx and Engels anticipated. In the U.S.S.R., according to Stalin, there still exists a "contradiction" between the productive forces, which are developing rapidly, and the collective relations of production in the countryside, which are already beginning to lag behind and thus "to hamper the powerful development of our productive forces" (p. 76).

Also relevant to this question of Stalin's attitude towards "universal" laws is his treatment of the question of the applicability of Marx's famous reproduction schemes to a socialist economy. One of Stalin's critics, Yaroshenko, had apparently asserted that "the Marxian theory of reproduction is a theory of capitalist reproduction only, that it contains nothing that might have validity for other social formations, the socialist social formation in particular." Stalin answers to the effect that Yaroshenko is seeing only the form of Marx's theory and neglecting its essential substance. It is true, he says, that Marx's theory, "which was the fruit of an investigation of the laws of the capitalist mode of production, reflects the specific character of the latter, and, naturally, is clothed in the form of capitalist-commodity value relations." But Marx's schemes, Stalin insists, contain "a whole number of fundamental tenets on the subject of reproduction *which hold good for all social formations*, particularly and especially for the socialist social formation" (pp. 87-9; my emphasis). Among those "fundamental tenets" which "hold good not only for the capitalist formation," Stalin lists, interestingly enough—

"the division of social production into the production of means of production and the production of means of consumption; the relatively greater increase of production of means of production in reproduction on an extended scale; the correlation between Departments I and II; surplus product as the sole source of accumulation; the formation and designation of the social funds; accumulation as the sole source of reproduction on an extended scale" (p. 89).

One must beware, however, of exaggerating the extent to which Stalin leans over towards the orthodox Western viewpoint in this connection. He is careful to insist, as Marx did, that political economy "investigates the laws of development of men's relations of production." "The province of political economy," he says, "is the production, the economic, relations of men" (p. 81)—that is, roughly, the relations of subordination, co-operation, etc., which men enter into with one another in production at different stages in their history. Stalin would have had no truck with any economic laws, whether "universal" or otherwise, which in effect abstracted from men's relations of production. There is nothing whatever in Stalin's work which could possibly be construed as support for an economics whose primary aim was to shake out the implications of the universal fact of choice. And Stalin is also careful to exclude problems of "the rational organisation of the productive forces, economic planning, etc." from the province of political economy. These problems, he says, "are not problems of political economy, but problems of the economic policy of the directing bodies" (p. 81).

There are some laws, of course, which are neither universal nor specific to any particular social system, but which "operate for a definite historical period" (p. 8) embracing several successive social systems. One such law, Stalin argues, is the "law of value," which begins to operate very early in the history of society, reaches the height of its influence under capitalism, continues to operate in a restricted sphere for a time under socialism and withers away only when "commodity production" is finally abolished. "Commodity production," according to Marx's use of the term, is a state of affairs in which goods are produced for exchange by producers whose economic activities are carried on independently of one another. The phenomenon of exchange value is to be found only in association with "commodity production" in this sense, so that value relationships between "commodities" are in fact a reflection of the socio-economic relationships existing between their producers. The "law of value," in the broad sense in which

Stalin seems to be using the term, postulates that these socio-economic relationships generate certain "objective necessities" which assert themselves decisively in the process of determination of the exchange-ratios of "commodities." The extent to which what Marx called "the reasonable and the necessary" in the sphere of exchange relations is imposed *upon* society, rather than *by* society, at any given stage of social development, therefore depends very largely upon the extent to which "commodity production" is predominant at that stage.

The science of political economy, Marx said, "consists precisely in working out *how* the law of value operates" in different forms of society. In pre-capitalist society it generally operates so that the exchange-ratios of commodities are directly governed by the proportions in which the social labour force is allocated to their production. In capitalist society (at least prior to the rise of "monopoly capitalism") it generally operates so that exchange-ratios are *ultimately* governed by these proportions. How, then, if at all, does it operate under socialism in the U.S.S.R.? Stalin begins his analysis of this problem by boldly characterising the economic relation between the state sector and the collective-farm sector as a "commodity relation," thereby emphasising the considerable degree to which their productive activities are carried on independently of one another. The goods which are exchanged between town and country—*i.e.*, in the main, consumer goods—are therefore still "commodities" in the Marxist sense. It follows, then, that the "law of value" continues to operate in the U.S.S.R. so far as the exchange of these goods is concerned, since "wherever commodities and commodity production exist, there the law of value must also exist." In the exchange of consumer goods through purchase and sale, Stalin writes, "the law of value preserves, within certain limits, of course, the function of a regulator" (p. 23). The exact manner in which it performs this function is by no means made as clear as it might have been—at least to a Western economist who was not present at the discussion of November 1951—but what Stalin seems to be getting at is something like this: In the U.S.S.R., broadly speaking, the prices of agricultural consumer goods relative to each other, in so far as they are determined on the free market, will tend to settle down roughly in proportion to the quantities of labour required to produce them, and in so far as they are within the control of the state they will require (up to a point) to be fixed according to much the same principle, since otherwise the goods would not be produced in the proportions required by society. This means that it is impossible

for the prices of manufactured consumer goods to be fixed *arbitrarily* by the state, even though the quantity of each commodity produced in the state sector does not depend upon its price in the same way as it does in the collective-farm sector. For the real incomes of the peasants and industrial workers (given the prices of agricultural products and the level of money wages in industry) will obviously be determined by the prices of manufactured goods, and if incentives are to be preserved, and a sufficient supply of agricultural produce ensured, the planners must make certain that these price-relationships are reasonable. These "objective necessities" with which the planners find themselves faced can plausibly be conceived in terms of the operation of the "law of value" in the field of commodity exchange. And the "law of value" will, of course, continue to operate in this field until "collective-farm property is raised to the level of public property."

It might perhaps be thought that in all this Stalin is simply attempting, for political reasons, to squeeze certain economic phenomena of Soviet society into a uniform of Marxist concepts which they have in fact long outgrown. This suggestion would be more plausible if Stalin had not at the same time gone out of his way to complain about the manner in which certain concepts taken from Marx's *Capital* were being "artificially pasted on to our socialist relations," and if he had not called energetically for the replacement of these old concepts with "new ones that correspond to the new situation" (pp. 21–2). It seems fairly clear, I think, that Stalin, like any other serious scientist attempting to analyse a new social system, had first to decide how far the concept-material used in the study of the old system could be adapted, and how far new concepts had to be developed. The fact that so much Marxian terminology remains in the present work should, I think, be attributed at least as much to the flexibility and depth of the original Marxian concepts, and to Stalin's mastery of the *method* of Marxism, as to the dictates of political considerations.

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NOTES AND MEMORANDA

THE REPARATIONS PROBLEM: A CORRECTION

IN my review article on Professor Meade's *The Balance of Payments*, I stated the conclusion that "even with positive marginal leakages in both countries a reparations payment may be transferred by an equivalent reduction of income in the transferor and increase in the transferee, provided that the sum of the marginal propensities to import is sufficiently greater than unity" if the autonomous changes in expenditure accompanying the transfer are divided between home goods and imports in the ratio of the marginal propensity to consume home goods to the marginal propensity to import, instead of being assumed to fall entirely on home goods as has usually been done.¹ Further investigation of the matter, stimulated by discussions with Professor G. A. Elliott of the University of Toronto, have convinced me that this conclusion is invalid, and that reparations payments cannot be transferred by equivalent changes in national incomes.

On the usual assumptions of constant prices, interest rates and exchange rates, the effect of a reparations payment on the transferor's balance of payments will be

$$dB_1 = -T + \frac{-m_1 s_2 (\bar{C}_1 + \bar{M}_1) + m_2 s_1 (\bar{C}_2 + \bar{M}_2) + s_1 s_2 (\bar{M}_2 - \bar{M}_1)}{\Delta}$$

where m and s represent marginal propensities to import and to save, assumed to be positive, T is the amount of the transfer, $\bar{C}$ and $\bar{M}$ represent the autonomous changes in spending on home goods and imports associated with the transfer, subscripts 1 and 2 refer to the transferor and the transferee respectively, and $\Delta = m_1 s_2 + m_2 s_1 + s_1 s_2$.

On the assumption that the transfer is accompanied by equivalent changes in spending on home goods in the two countries, which may be termed the Machlup-Metzler assumption, $dB_1 = \frac{-s_1 s_2 T}{\Delta}$. The transfer cannot be effected by income variations alone, regardless of the magnitudes of the marginal propensities to import.

On the assumption that the transfer is accompanied by

¹ "The Taxonomic Approach to Economic Policy," *ECONOMIC JOURNAL*, Vol. LXI, No. 244 (December 1951), p. 816 footnote 1.

equivalent changes in spending divided between home goods and imports in each country in the ratio of the marginal propensity to consume home goods to the marginal propensity to import,

$$dB_1 = \frac{\left(\frac{m_1}{1-s_1} + \frac{m_2}{1-s_2} - 1 \right) s_1 s_2}{\Delta}.$$

The transfer *can* be effected by income variations alone if $\frac{m_1}{1-s_1} + \frac{m_2}{1-s_2} \geq 1$; this is equivalent to Professor Meade's condition that the sum of the marginal propensities to import, as functions of domestic expenditure, be equal to or greater than unity.

But on the assumption that the transfer is accompanied by equivalent changes in *income* in the two countries, divided between saving, spending on home goods and spending on imports according to the usual marginal propensities, $dB_1 = \frac{-s_1 s_2 T}{\Delta}$.

The transfer cannot be effected by income variations alone, regardless of the magnitudes of the marginal propensities to import. The conclusion stated in my earlier article is therefore invalid. The present conclusion, incidentally, applies to a world or more than two countries, though the proof is too tedious to present here.

In conclusion, it may be noticed that all three of the cases just examined are special cases of a more general one, in which it is not assumed that the autonomous changes associated with the transfer can be treated synonymously with other changes in income or expenditure. In general, the effect of a reparations payment on the transferor's balance of payments is

$$dB_1 = \frac{\left(\eta_1 - \frac{\sigma_1}{s_1} m_1 + \eta_2 - \frac{\sigma_2}{s_2} m_2 - 1 \right) s_1 s_2 T}{\Delta}$$

where σ is the proportion of the reparations payment which is not accompanied by an autonomous change in total spending, and η represents the proportion of the reparations payment which is accompanied by an autonomous change in spending on imports.¹

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¹ This general case is investigated in a forthcoming paper by Professor Elliott. It should perhaps be stated that the analysis of this note ignores any induced changes in non-accommodating foreign lending.

THE THEORY OF FEDERAL FINANCE—A COMMENT¹

IN his article on "The Theory of Federal Finance"² Mr. Bhargava writes: "Benefits from the federal view point will be maximised when more is spent on backward and poorer areas. . . ." This condition, however, is subject to an important limitation which is nowhere stated in the article.

The purpose of public expenditure is twofold: (a) to improve immediate welfare; and (b) to promote the economic development of the country.

The first purpose might be called the static or distributive aspect of public finance; the second, the dynamic or productive aspect. It should be pointed out that Mr. Bhargava, in his statement, only considers the first. When it comes to development expenditures, it is by no means certain that more should be spent on backward and poorer areas. It is quite possible (and indeed likely) that the productivity of development expenditure is, in fact, higher in the more advanced parts of a federal union. In that case the conclusion reached in the article has to be modified. Much public expenditure is partly distributive and partly development expenditure, e.g., expenditure on education, public health, etc. In such cases a fine balance may have to be struck between the principle of transfer to poorer units enunciated by Mr. Bhargava and the cost-benefit ratio of public investment which may require the opposite transfer.

At the end of his article Mr. Bhargava deduces the "theoretical superiority" of a federal world state. It should be pointed out, however, that: (a) his argument could be applied to prove the superiority of a unitary world state as well; and (b) that transfers of income to poorer units occur even now, without a federal world state, bilaterally as well as through international organisations, and also by the process of international investment.

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A NEWLY DISCOVERED MANUSCRIPT OF JOHN BARTON

A LITTLE over a year ago, Professor Lionel Robbins discovered and the London School of Economic acquired a manuscript of John Barton, of which the following is a brief description based on

¹ The author is a member of the UNO Secretariat, but the views expressed in this note are his own only.

² ECONOMIC JOURNAL, March 1953.

a microfilm supplied to this writer through the courtesy of Mr. G. Woledge, Librarian.

The folio volume consists of 219 leaves, with 408 numbered pages (some are not). About one-fifth of all pages are blank—the author wrote on one side of the leaf only and then used some of the blank pages for further notes. The whole handwritten text may be divided into three categories: (a) notes and reflections on economic subjects, including reviews of some writings of Hume, Adam Smith, Ricardo and others; (b) statistical tables concerning mainly demographic trends and prices, and (c) an unpublished letter to the editor of the *Standard*, of May 2, 1846. Attached to the volume are clippings containing a series of twenty-five letters from John Barton which were printed in the *Standard* between February 1846 and May 1847.

The MS. contains what may turn out to have been the earliest piece written by John Barton: *A Critical Analysis of the Political Essays of David Hume*—an incomplete work dated December 1814, but part of which was obviously written after February 1815. It is possible that some of the undated notes were written still earlier.

Quite a few pages, indeed, carry no date. It is interesting to note, in this connection, that those which do, fall in two groups: such written prior to 1820, and such written after 1845. The location, contents and handwriting of the undated ones seem to suggest that they, too, were written partly before 1820 and partly after 1845. There is, thus, a gap from 1820 to 1845, pointing to the possibility of the existence of other manuscripts. For only a small portion of the materials contained in this volume seems to have been used for the essays which John Barton published during that interval.

It is now established that John Barton visited Switzerland in the summer of 1818. Page 355 of the MS. is dated *Geneva, July 1818*; on p. 370 he speaks of an anecdote which he remembered to have heard while in Bern, and in his letter to the *Standard* of March 4, 1846, he mentions his visit to the canton of Schwyz.

Several statistical tables of the latter period of the MS. are in another person's handwriting, which is very steady and beautiful. John Barton's handwriting of that period, however, is wobbly. One is tempted to speculate that this might have been caused by illness; it is known that John Barton became paralysed some time before his death.¹

A sentence on p. 403 suggesting that John Barton might have

¹ As reported in a volume on John Barton's son and namesake (*John Barton, A Memoir by his son [the late] Cecil Edward Barton*), London, 1910.

been a member of the London Statistical Society, this was checked, and it was found out that he was elected Fellow of the Society on December 20, 1847. On April 16, 1849, John Barton read before the Society a paper entitled "The Influence of Subdivision of the Soil on the moral and physical well-being of the people of England and Wales."¹

Closer study of the MS. might well yield further clues to the personality, life and works of this remarkable author.

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OBITUARY

HAROLD ADAMS INNIS

1894-1952

HAROLD ADAMS INNIS, head of the department of political economy at the University of Toronto and dean of its graduate faculties, died on November 8, 1952, at the beginning of his fifty-ninth year. He had been a most original and productive scholar for thirty years, a powerful, energising influence on students and teachers in the liberal arts, and a pungent, independent commentator on public life, in speech and writing or through the three royal commissions on which he served. The range and catholicity of his studies were great, except in the natural sciences. He had insight and invention, remarkable powers of work, and curiosities which embraced in his conception of political economy unconventional matter and continually modulated theory in forceful combinations. His winning personality and intellectual prestige made him sought-after and consulted in Canada and the United States and favourably known in Europe. He had been honoured by academic degrees and special lectureships on both sides of the Atlantic, and had been president of various professional bodies, notably the Canadian Political Science Association (1937), the Economic History Association (1942), the Royal Society of Canada (1946) and the American Economic Association (1951).

Born of Scottish-Canadian and Pennsylvania-German ancestry on a farm near the village of Otterville, Ontario, he made his way in considerable austerity from the one-room village school and the Woodstock Collegiate Institute, twenty miles away, to

the McMaster University, then in Toronto. On achieving his bachelor's degree in 1916, he enlisted in the Canadian Field Artillery, and while recovering from wounds received in July 1917 read for the master's degree (1918). At McMaster he chose to specialise in economics instead of proceeding to the Baptist ministry, as his family and friends had hoped. The fun-loving, relaxed manner of his maturity covered, as he occasionally admitted, some of the stern dedication of another calling.

His two years of study at the University of Chicago towards the Ph.D. formed him in so far as so independent a mind could be moulded. His sponsor for the degree was C. W. Wright; Frank Knight and J. M. Clark stirred him up; indeed, in teachers and senior students of political economy at that time Chicago was as lively an intellectual centre as the ebullient post-war United States could provide. In particular, the rapid succession of Thorstein Veblen's unusual books had an impact whose imprint in method and literary style Innis never lost. His doctoral essay, however, a painfully constructed history of the Canadian Pacific Railway that was finally published in 1923, afforded only glimpses of the patterns in an eager, crowded mind.

The Canadian Journal of Economics and Political Science is to publish a bibliography of his publications, and the Rockefeller Foundation is supporting an effort to organise his papers and correspondence. These promise to be difficult tasks, for he was not only prolific, but seems, from the beginning perhaps, unconsciously to have conformed to the mistrust of the finality in the recorded word that he finally avowed and tried to explain. "My bias," he said in 1948, "is with the oral tradition." He often gave the impression that once he had thought out and delivered the product of a study, he lost any strong interest in it.

One result was that, although he (and others under his stimulus) dealt with Canadian economic history in its breadth and depth and in its vulnerability or subordination to outside forces, he never attempted to bring these studies together into a single work. Another result was that, except on rare occasions, he wrote with little artistry or consideration for the reader. His racing, provocative prose, largely in declaratory form, was uneven in its proportions, disorderly in its course and studded with novel concatenations or contrapositions, which were often so elliptical as to be cryptic. Valuable and sufficiently enduring though his revelations proved to be to others, he himself seems sincerely to have regarded them as little more than stimuli to thought and development.

¹ The paper was printed in the *Journal* of the Society for February 1850 (Vol. XIII), pp. 63-77.

His first phase may be thought of extending to the depression that began to cripple Canada in 1929. During this decade he studied his country, professedly as an economic geographer, in its physical characteristics and in its records at home and abroad. His powers of work and mental digestion were remarkable and, in his quiet, severely simple way, he seems to have managed it all without recourse for support to the scholarly foundations. By 1930 he was unique in knowledge and thought concerning his country and its economic affiliations, and his stature was demonstrated by the publication that year of *The Fur Trade in Canada: an introduction to Canadian economic history* (Yale University Press).

Most Canadian historians regard that book as having opened up an almost entirely new understanding of their country's development, for, whereas it had hitherto been customary to regard Canada as a political defiance of North American geography, Innis came close to reversing that view. He did so by demonstrating the transition from fish to fur in European enterprise, the enlistment through dependence on European goods of Indian fur-collectors in the Canadian Shield, and the adaptable utilisation for transportation of the rivers, great lakes and seas that lie within the Shield or girdle it from Newfoundland to the mouth of the Mackenzie. British Columbia and the Yukon could be practically linked to these enterprises. With modest subtractions and understandable additions, Canada to-day corresponds to what were the richest and most enduring fur-producing areas of North America. Moreover, its politics have always constituted a defiance of the "manifest destiny" of the politics that have made up the United States. Reviewers greeted the book's demonstrations with an enthusiasm that eclipsed their complaints about its considerable disregard of conventional scholarly apparatus and of ordered exposition.

In it there was little evident reliance on, or appeal to, theory. Yet as Innis proposed to say in his presidential address to the American Economic Association in 1952, "economic history is primarily concerned with extending the universal applicability of economic theory and of strengthening a central core of interest." Throughout his career he brought history to bear on the present, and his hope was that man would continue to do so, in the interest of liberty. Apparently what lay at the back of his mind in the beginning (it rested on an intense love of country not acknowledged until shortly before his death) was the belief that economic theories worked out in "older" countries were not strictly

applicable to "new" countries. He may have dreamed of an economic theory embracing "new" countries and demonstrating their modulation of general economic theory, although he would have kept it tentative and adaptable. By induction and deduction he spent his life-time corroding and repairing his own apparatus of theory, and expecting, frequently in vain, that his hearers and readers would see the aptness of little more than interjected references to relationships with existing theories of monopoly, equilibrium, price, unused capacity, cycles and so on. Like his master, Veblen, he found and gave much enlightenment by close scrutiny of technologies. His marked similarities in thought to Arthur Spiethoff were probably coincidental.

The depression after 1929 in his vulnerable country brought out in higher relief the *political* economist in Innis. He surrendered some of his intense individuality and distrust of the state. During a decade of extraordinary activity, he wrote and published a great deal himself; planned, edited or collaborated in several co-operative enterprises, including the large Carnegie Endowment inquiry into, and publications concerning, the relations of Canada and the United States; was the architect and chief mover in reviving the Canadian Political Science Association and in initiating the *Canadian Journal of Economics and Political Science*; and, along with Anne Bezanson, Shepard Clough, Arthur Cole, Edwin Gay, E. A. J. Johnson and others, activated the Committee for Research in Economic History, created the Economic History Association and produced the *Journal of Economic History* when European publications were extinguished by war.

He finished in 1938 and published in 1940 what was to be his last contribution to the history of Canadian staple production—*The Cod Fisheries: the history of an international economy* (Yale University Press). Here he mastered the unique problem in investigation and exposition of combining complex activities in time of the North Atlantic Maritime Region and equally complex centrifugal and centripetal activities in space embracing North America, the West Indies, parts of South America, Western Europe and the Mediterranean. An unfortunately small edition has made this remarkable book perhaps the most sought-after of his works.

Space does not permit a detailed or critical account of his novel and complex third and last phase. In a mechanical sense, he had decided to remedy another scholar's failure by rounding out staple production with a history of pulp, paper and their

partner, hydro-electric power, and this led him into obsessive inquiry and thought about the whole history of communications in relation to politico-economic power. Other considerations suggest that the vicissitudes of a war that fulfilled Tocqueville's prophecy of the Earth divided into Russian and American spheres intensified his nationalism and especially excited his fears of tyranny that might extinguish free-ranging thought. Like Élie Halévy (see his *L'Ère des Tyrannies*) in a more narrowly political sense, Innis was the philosophical liberal confronting a transvaluation of values. On the one hand, he poured energy into arousing his countrymen to the necessity of cultivating scholarship, especially by organised nourishment for the humanities and social studies. On the other hand, he plunged into the daring and nearly solitary adventure of learning enough about changing modes and patterns of communications, in their relations to economics and politics across recorded time, to obtain a working hypothesis.

He had had little helpful response from political economists to a number of papers, and his materials were still in a rough state when he undertook the Beit Lectures at Oxford in 1948, but patriotism and, presumably, a sense of mortal urgency were driving him along. By working, writing and revising up to the last possible moment, he produced a series of politico-economic studies of the media of communication and their use in time and space, especially with reference to stability and expansion, monopoly and innovation, collectivism and the resort to force. The effort culminated in impassioned, eloquent appeals to Canadians and Britons to retrieve from the Western tradition, especially from Greece, powers of cultural resistance to Russia and the United States, and antidotes to the cult of the present that was inherent in the economics and politics of modern communications monopolies and was robbing political man of his roots in experience and thereby of his good sense.

His published books that contain explicit work building up these themes are: *Political Economy in the Modern State* (Toronto, 1946), *Empire and Communications* (Oxford, 1950), *The Bias of Communication* (Toronto, 1951) and *Changing Concepts of Time* (Toronto, 1952).

With this *corpus* in hand and, presumably, with more to appear posthumously, some commentary has begun to appear in American and Canadian journals. Fortunately, W. T. Easterbrook of Toronto has reminded interested persons of Innis' "dislike, even contempt, for the written tradition, his fear of the

written word as frozen, final," and his "constant struggle to break down this finality and to weaken or destroy the inherent tendency to monopoly of communications which he firmly believed to be a fatal defect of the written form." His consistent aim was to make men think and argue in such vital fashion that they would retain those habits.

Innis' friends and acquaintances need no reminder of his great gifts of charm and companionability, which he somehow combined with an almost enigmatic personal reserve. He was always, even during his last painful illness, a focus for good talk and laughter. Although himself plainly faithful to some stringent standards of behaviour and pitiless towards pretentiousness, his friendship was consistently much more generous than exacting.

J. B. BREBNER

Columbia University,
New York.

CURRENT TOPICS

THE Annual General Meeting of the Royal Economic Society was held at the London School of Economics on Thursday, July 2, 1953. Lord Brand was re-elected to the office of President. Professor A. K. Cairncross and Mr. W. M. Allen were elected to fill vacancies on the Council. The official business was followed by an address by the President on "A Banker's Reflections on Some Economic Trends."

THE Secretary reported on the membership and finances as follows :

	1952.	1951.	1939.	1914.
New Fellows and Library Members elected	404	595	490	50
Fellows lost by death, resignation or default	309	414	496	33
Number of Fellows and Library Members on December 31	6032	5937	4572	694
Total Compounders in above total	2091	2055	1155	159
Surplus or Deficit of Income over Expenditure, together with receipts from Compounders	—£270	£1430	£329	£278

WE record with great regret the death at Oxford on May 8, 1953, of David Hutchison Macgregor, Emeritus Professor of Political Economy in the University of Oxford, and from 1925

to 1934 Joint Editor of the *Economic Journal*. We shall hope to publish an obituary notice in a forthcoming issue.

We congratulate Sir Donald MacDougall on the conferment of the honour of Knight Bachelor in the Coronation Honours List.

Houblon-Norman Fund. The Trustees of the Houblon-Norman Fund, on the recommendation of their Advisory Committee, have made the following awards for 1953-54.

Fellowship

- | | |
|---|--|
| Mr. E. W. J. Kerridge, Houblon-Norman Fellow, 1952-53. (Renewal.) | The History of Ley Farming, particularly in Midland England, in the sixteenth, seventeenth and eighteenth Centuries. |
|---|--|

Research Grants

- | | |
|---|---|
| Mr. D. Barker, Bank Official. | English Investment Trusts. |
| Mr. D. J. Darby, Bank Official. (Renewal.) | The London Banks in the Bank Restriction Period. |
| Mr. G. F. Hammersley, Research Student, University of London. | History of the Charcoal Iron Industry in England, 1550-1750. |
| Mr. M. J. Harper, Bank Official. | Joint-stock Banking in London, 1890-1914. |
| Mr. R. J. Hartridge, Teacher, South London Secondary Central School. (Renewal.) | The Development of Industry in London South of the Thames from 1750-1850. |
| Dr. G. P. Insh, C.B.E., D.Litt., Historian. (Renewal.) | The Financial Activities of William Paterson. |
| Mr. R. V. Lennard, Historian. | Rural England in the Feudal Age. |
| Mr. P. Mathias, Jesus College, Cambridge. | The Organisation and Development of the Brewing Industry in England, 1688-1830. |
| Mr. H. Pollins, Senior Research Assistant, University College of Swansea. | British Railway Finance, 1800-75. |
| Mr. R. O. Roberts, Lecturer, University College of Swansea. | The Marketing and Purchasing Organisation of the Copper Smelting Industry of South Wales in the Nineteenth Century. |
| Mr. A. J. Taylor, Lecturer, University College, London. (Renewal.) | Organisation of the British Coal Industry, 1800-75. |
| Mr. F. M. L. Thompson, Assistant Lecturer, University College, London. (Renewal.) | The Social and Economic Background of the English Landed Interest, 1840-70. |
| Mr. T. Wilson, Fellow of University College, Oxford. | Economic Fluctuations in the United Kingdom between 1923 and 1938. |

An offer of awards for 1954-55 will be made early in 1954. Further information may be obtained from the Secretary, Houblon-Norman Fund, c/o Bank of England, London, E.C.2.

RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society

VOL. CXVI, PART 1, 1953. *The Expansion of Statistics*: SIR RONALD FISHER. *The Analysis of Economic Time-Series—Part I: Prices*: M. G. KENDALL. *The Price of Gold and the Purchasing Power of the Pound Sterling*: H. FRANKEL. *United Kingdom: Comparison of Urban and Rural Retail Prices*: J. R. BELLERBY. *Food Statistics*: W. D. STEDMAN JONES.

Economica

VOL. XX, No. 78, MAY 1953. *Robertson on Utility and Scope*: L. ROBBINS. *The Logic of Surprise*: G. L. S. SHACKLE. *Uncertainty, Costs, and Collectivist Economic Planning*: J. WISEMAN. *A Note on the Geometrical Representation of Elasticity of Demand for Imports*: S. A. OZGA. *Insurance Investment and the London Money Market of the 18th Century*: A. H. JOHN. *The Dutch and the English Public Debt in 1777*: A. CARTER. *The Import Content of British Exports*: W. Z. BILLEWICZ.

The Political Quarterly

VOL. XXIV, No. 2, SPECIAL NUMBER. THE CONSERVATIVE PARTY, APRIL-JUNE 1953. *Principles of Conservatism*: K. FEILING. *The Conservative Party and the Changing Class Structure*: A. MAUDE. *The Economic Policy of the Conservative Party*: R. BOOTHBY. *Conservatives and Social Services*: J. E. POWELL. *A Conservative View of the Commonwealth*: J. AMERY. *Conservatives and Local Government*: H. BROOKE. *How Conservative Policy is Formed*: I. BULMER-THOMAS. *Conservatism and Liberalism*: C. COOTE.

The Manchester School of Economic and Social Studies

VOL. XXI, No. 2, MAY 1953. *The Theory of Forward Exchange and Recent Practice*: J. SPRAOS. *The British Export Trade Research Organisation*: J. A. P. TREASURE. *Cost-Output Variations in a Multiple Product Firm*: J. JOHNSTON. *The Industrial Structure of Towns*: FRED A. CONWAY. *Profits in Large Scale Retailing*: F. R. J. JERVIS.

Political Studies

VOL. 1, No. 1, FEBRUARY 1953. *Reflections on English Political Theory*: SIR ERNEST BARKER. *The American Party System, 1952 Model*: D. W. BROGAN. *What is Socialism? I*: G. H. D. COLE. *Public Corporations and the Classification of Administrative Bodies*: D. N. CHESTER. *A Note on Professor Oakeshott's Introduction to the Leviathan*: J. M. BROWN. *Vérification des Pouvoirs in the French National Assembly*: P. CAMPBELL.

The Journal of Industrial Economics

VOL. I, No. 2, APRIL 1953. *Towards a European Economy*: P. RYKENS. *Group Interest and Managerial Enterprise*: O. W. KNAUTH. *Location and Development of the Cotton Industry*: R. ROBSON. *Notes on the Establishment of Branch Factories*: G. PICTON. *Some Critical Remarks on the Significance and Use of the Breaking Even Point*: J. L. MEIJ. *Price Policy in the Coal Industry*: A. BEACHAM. *Competition between the Nationalized Electricity and Gas Industries*: E. K. HAWKINS.

Applied Statistics

VOL. II, No. 1, MARCH 1953. *The Census of Distribution*: D. A. CLARK. *Estimating Variability from the Differences of Successive Readings*: J. KEEN and D. J. PAGE. *Short-term Fluctuations in Petroleum Consumption*: No. 251—VOL. LXIII.

tion : J. D. BUTLER. *A Statistical Approach to a Problem of Chemical Manufacture* : A. MUIR and F. DOWNTON. *A Comparison of Serial Number Digit Sampling with Systematic and Random Sampling* : O. O. PRICE and A. J. MCKEON. *Stochastic Processes or the Statistics of Change* : M. S. BARTLETT.

The Sociological Review

VOL. XLIV, SECTION 1, 1952. *Population Policies and International Tensions* : J. C. FLUGEL.

International Affairs

VOL. XXIX, No. 2, APRIL 1953. *The Writing of Contemporary History for Chatham House* : A. TOYNBEE. *The "European Policy" of France* : H. ALPHAND. *The Nineteenth Congress of the Communist Party of the Soviet Union* : I. DEUTSCHER. *The Decline of the West in the Middle East—II* : A. HOURANI. *The Ansac Dilemma* : F. L. W. WOOD. *The Impact of Anti-Semitism on the New State of Israel* : E. MARMORSTEIN.

Soviet Studies

VOL. IV, No. 4, APRIL 1953. *Dogma and Reality in Stalin's "Economic Problems"* : I. DEUTSCHER. *Rates of Growth under the Five-Year Plans* : M. DOBB. *Notes on the Changing Functions of Party Congresses* : R. SCHLESINGER. *A Political Economy of Socialism in the Making* : J. MILLER. *A Note on Labour Utilization in the Kolkhoz* : A. NOVE and R. D. LAIRD.

Accounting Research

VOL. 4, No. 2, APRIL 1953. *The Influence of Law on Accounting in Canada* : C. A. ASHLEY. *The Capital Error* : P. N. WALLIS. *An Accounting Progression* : F. SEWELL BRAY. *The Economic and Accounting Concepts of Profit* : A. G. POOL. *The Construction and Presentation of Social Accounts* : R. L. MATHEWS.

The Incorporated Statistician

VOL. 4, No. 1, MARCH 1953. *Index Numbers of Retail Prices* : R. G. D. ALLEN. *Aspects of Random Sampling for a Commercial Survey* : F. EDWARDS. *The Statistical Function in a Distributive Organization* : N. C. TURNER. *A Note on Intensity Measurement* : A. HARRIS and L. T. WILKINS.

The Banker

VOL. C, No. 328, MAY 1953. *A Keynesian Budget. Report on Nationalisation—II* : O. R. HOBSON. *Outlook for Raw Materials* : E. H. STERN. *Building Societies and Dearer Money* : O. R. HOBSON. VOL. C, No. 329, JUNE 1953. *Elizabethan Heritage. Monetary Policy Now. Europe's Currency Plans. Report on Nationalization* : III—*Labour Relations* : O. R. HOBSON. *Making Money* : M. WEEKLEY. *Pakistan's Crisis in Solvency. The Scottish Banks in Transition* : F. S. TAYLOR.

The Bankers' Magazine

No. 1310, MAY 1953. *International Survey* : H. E. EVITT. *India : Problems and the Plan* : SIR JOHN THORNE. *Balance of Payments 1952-1953* : J. HUNSWORTH. No. 1311, JUNE 1953. *The Turn of the Tide?* : W. M. SCAMMELL. *Exchange Dealings in India* : L. C. WILLIAMS. *Eighteenth Century Investment Book* : C. E. HICKS.

Barclay's Bank Review

VOL. XXVIII, No. 2, MAY 1953. *The Coronation. Elizabethan Retrospect. The Finance of Industrial Enterprise. British Coins. Pakistan : Difficulties and Achievements.*

District Bank Review

No. 106, JUNE 1953. *Economic Prospects of a New Era* : G. HUTTON. *This Boostful Age* : A. W. DEAN. *The Backward Glance.*

Midland Bank Review

MAY 1953. *Monetary Survey 1952-3. Britain's Forests—the Process of Rehabilitation. Economic Conditions and Prospects in Scotland.*

National Provincial Bank Review

No. 22, MAY 1953. *Post-war Financial and Monetary Developments in Belgium* : L. CAMU. *Industry in Transition* : S. R. DENNISON.

The Three Banks Review

No. 18, JUNE 1953. *Our Money—1838 and 1953* : R. S. SAYERS. *The Budget as an Instrument of Policy, 1837-1953* : U. K. HICKS. *Coronation Contrasts.*

Westminster Bank Review

MAY 1953. *Back to Economic Bedrock* : G. HUTTON. *The Challenge of the Budget. Transport Policy and Investment in Roads* : G. WALKER, M. BEESLEY and A. WALTERS. *Sovereign Islands. Do we need Agricultural Marketing Boards?* : G. R. ALLEN. *National Income.*

The Journal of the Institute of Transport

VOL. 25, No. 4, MAY 1953. *The Influence of Military Aviation on Civil Air Transport* : SIR F. HANDLEY PAGE. *Developments and Prospects in British Transport* : A. J. PEARSON. *Transport and the Irish Economy* : C. T. BRUNNER.

Planning

VOL. XX, No. 353, MAY 1953. *The Monopolies Commission.* VOL. XX, No. 354, JUNE 1953. *The Cost of Social Services 1938-1952.*

Town and Country Planning

VOL. XXI, No. 109, MAY 1953. *Flats, Houses, and Food Land. National Parks in the U.S.A.* : J. FOSTER. *Farm Land and Building. Chandigarh : a New Town for India* : E. MAXWELL FRY. *The Significance of Crofting* : R. BRIDGER. *A Third Garden City? Street Furniture in New Towns* : G. WILLIAMS.

VOL. XXI, No. 110, JUNE 1953. *Taking Stock* : D. DONNELLY. *National Parks in the U.S.A. : II* : J. FOSTER. *Old Towns for New* : SIR P. ABERCROMBIE. *The Design of Rural Housing Layouts* : P. MAUGER. *Men and Landscapes* : J. D. U. WARD. *Farm Land and Building. Education in New Towns* : W. G. S. CROOK. *Trees for Industrial Localities* : R. MORLING.

VOL. XXI, No. 111, JULY 1953. *A Planner Outplanned* : R. STAMP. *Cement and the Countryside* : J. TAYLOR. *The High-Rise Fashion* : L. MUMFORD. *The Land Debate* : D. DONNELLY. *Steel Town. Problems of Planning Education* : L. B. KEEBLE. *Trees for Towns, I* : R. MORLING.

Cartel

VOL. 3, No. 4, APRIL 1953. *Advertising—Master or Servant?* : J. BRUNNER. *Ireland's Restrictive Practices Bill* : B. INGLIS. *The Return of the Brands* : R. EVELY. *French Law on Industrial Ententes* : J. AUGIER. *Coffee and Control. Bigger Firms—and Better? Canada's Fine Papers Combine.*

Progress (Lever Bros.)

VOL. 43, No. 238, SPRING 1953. *Portrait of a Contented People* : PREM CHAYA. *Big Business—Curse or Blessing?* : R. BIRD. *British Initiative Abroad* : R. SINCLAIR. *Whaling* : G. MAXWELL. *Citizens in the*

Making: R. CARTON. *A Note on Taxation and Prices*: SIR HENRY CLAY. *A Dissertation upon Kipperd Herring*: B. HOLLOWOOD. *People for the Dominions*: N. NICOLSON.

The Indian Economic Review

VOL. I, No. 3, FEBRUARY 1953. *Marx's Tableau Economique and "Under-Consumption" Theory*: S. TSURU. *An Analysis of New China's Agrarian Reform Law*: B. N. GANGULI. *Bank Capital in India*: V. SRI RAM. *Deficit Financing, Capital Formation and Price Behaviour in an Under-Developed Economy*: V. K. R. V. RAO.

Sankhya

VOL. 12, PARTS 1 and 2, DECEMBER 1952. *Some Aspects of the Design of Sample Surveys*: P. C. MAHALANOBIS. *An Extension of Wald's Decision Theory to Unbounded Weight Functions*: M. N. GHOSH. *Some Theorems on Minimum Variance Estimation*: C. R. RAO. *An Example of Non-Existence of a Minimum Variance Estimator*: D. BASU. *On Symmetric Estimators in Point Estimation with Convex Weight Functions*: D. BASU. *Minimum Variance Estimation in Distributions Admitting Ancillary Statistics*: C. R. RAO. *On a Class of Admissible Estimators of the Normal Variance*: D. BASU. *On Sequential Tests of the Equality of Variance of Two Normal Populations with Known Means*: S. RUSHTON. *A Property of the t-Statistic*: R. R. BAHADUR. *On Some Uses of the t-Distribution in Multivariate Analysis*: A. BHATTACHARYYA. *The Inverse Hyperbolic Sine Transformation on Student's t for Non-Normal Samples*: A. K. GAYEN. *Some Aspects of Stationary Time Series*: K. NAGABHUSANAM. *On the Estimation of Parameters Determining the Mean Value Function of a Stochastic Process*: H. B. MANN. *The Estimation of the ED50 for a Logistic Response Curve*: D. J. FINNEY. *Resolvable Balanced Incomplete Block Designs*: E. J. F. PRIMROSE. *On the Concept and Use of Orthogonal Semi-Polynomials*: C. CHANDRA SEKAR and P. N. CHAKRABORTY. *A Statistical Study of Absenteeism in Indian Labour*: M. CHAND and A. K. BANERJI. *Statistical Quality Control in an Indian Manufacturing Concern*: A. MAHALANOBIS.

The South African Journal of Economics

VOL. 21, No. 1, MARCH 1953. *Sterling Convertibility*: SIR F. LEITH-ROSS. *Uranium in South Africa: Atomic Energy Board. A Twenty-Five Year Plan—Some Reflections on the Policy Report*: I. S. LLOYD. *The "Pigou Effect" and other Aspects of Asset Holdings on Consumption*: R. J. RANDALL. *Skets van die Ekonomiese Ontwikkeling van die Belgiese Kongo in die lig van die Tienjaarplan*: F. VAN DAMME.

International Labour Review

VOL. LXVII, No. 4, APRIL 1953. *Practical Methods of Increasing Productivity in Manufacturing Industries. Towards Higher Labour Productivity in the Countries of Western Europe*: J. FOURASTIÉ. *Domestic Workers in Sweden*: B. ÅKERMAN JOHANSSON.

VOL. LXVII, No. 5, MAY 1953. *The United Nations and Full Employment*: A. A. P. DAWSON. *The Measurement of Productivity in State Undertakings and Public Services*: G. ARDANT. *Emigration from the Netherlands*: R. J. P. VAN G. BLEEKER and F. H. VAN DER MADEN.

United Nations Economic Bulletin for Europe

VOL. 5, No. 1, 1953. *Review of the Economic Situation in Europe during the Second Half of 1952. The Expansion of Western European Flat Products Capacity—a case study of development in steel.*

International Financial Statistics

VOL. VI, No. 4, APRIL 1953. *Quarterly Changes in the "Dollar Gap"*: 1946–52.

VOL. VI, No. 5, MAY 1953. *World Gold Production in 1952. United Kingdom Balance of Payments for 1952.*

VOL. VI, No. 6, JUNE 1953. *New Balance of Payments Statements for 1952. IFS Statistics on Gold and Foreign Exchange Holdings.*

Public Finance

VOL. VIII, No. 1, 1953. *The Control of Public Expenditure*: U. K. HICKS. *Some Aspects of National Budget Administration in Turkey*: J. W. MARTIN. *Adaptation of the Budget to the Tasks of a Modern State*: R. JACOMET. *Rearmament and Inflation*: A. ANGELOPOULOS. *The Budget and the Forms in which it is Presented*: K. HEINIG.

VOL. VIII, No. 2, 1953. *Some Problems of Financing Development in Sierra Leone, West Africa*: N. A. COX-GEORGE. *The Problem of Incorporating Imputed Income of Government Investment and Interest of the National Accounts*: M. FRANK. *British Public Debt in the Two World Wars*: D. I. HEWELL.

American Economic Review

VOL. XLIII, No. 2, MAY 1953. *Papers and Proceedings of the Sixty-fifth Annual Meeting of the American Economic Association.*

The Annals of the American Academy of Political and Social Science

VOL. 287, MAY 1953. *Judicial Administration and the Common Man.*

The Quarterly Journal of Economics

VOL. LXVII, No. 2, MAY 1953. *Revision of the Taft-Hartley Act*: S. H. SLICHTER. *The Structure of the Housing Market*: D. M. BLANK and L. WINNIK. *The Acceleration Principle Reconsidered*: R. S. ECKAUS. *Receivership in American Unions*: H. B. DAVIS. *Toward a General Theory of Sales Tax Incidence*: J. F. DUE.

The Journal of Political Economy

VOL. LXI, No. 2, APRIL 1953. *Arithmancy, Theomancy, and the Soviet Economy*: N. M. KAPLAN. *Frederick B. Hawley's Income Theory*: R. M. DAVIS. *Union Influence on Wages: The Construction Industry*: S. P. SOBOTKA. *The Demand for Money: The Development of an Economic Concept*: J. C. GILBERT. *Contemporary Economics Resurveyed*: M. BRONFENBRENNER.

Review of Social Economy

VOL. XI, No. 1, MARCH 1953. *Some Economic and Ethical Aspects of the Schuman Plan*: C. A. ZEBOT. *Papal Teaching and International Economic Relations*: R. J. MILLER. *The Point Four Program and Our Responsibilities to Underdeveloped Areas*: W. J. GIBBONS. *Union Cooperation in Promoting the Marshall Plan*: G. G. HIGGINS. *Codetermination in West Germany*: E. A. KURTH. *The Christian Trades Union Movement in Germany Before World War I*: M. DILL.

The Journal of Economic History

VOL. XIII, No. 1, WINTER 1953. *Baltimore's Aid to Railroads*: C. GOODRICH and H. H. SEGAL. *Yates and McIntyre: Lottery Managers*: H. G. J. AITKEN. *American Business and the Approach of War 1935–1941*: R. N. STROMBERG.

The Southern Economic Journal

VOL. XIX, No. 4, APRIL 1953. *Saving Free Enterprise from its Friends*: G. W. STOCKING. *The Impact of Multi-Unit Bargaining on the Economy*: T. R. SNAVELY. *Capitalism and the Rule of Love*: C. PHILBROOK. *Multiple-Unit Operations and Gross Farm Income Distribution within the Old Cotton Belt*: W. H. NICHOLLS. *The Leontief System*: J. M. RYAN. *Employment and Relative Earnings of Spanish-Name Persons in Texas Industries*: F. MEYERS.

Harvard Business Review

VOL. 31, No. 2, MARCH-APRIL 1953. *Trends in the Cost of Capital*: R. P. SOULE. *Obstacles to Business Growth*: K. POWLISON. *The "Joint Capital Trust"*: G. SIMONS. *Administering Salesmen's Compensation*: H. R. TOSDAL. *The Economics and Politics of Money*: G. L. BACH. *Enterprise on the Prairies*: C. M. WILLIAMS. *Does Nationalization Work? A Test Case from Britain*: W. W. HAYNES. *Human Relations in Collective Bargaining*: K. M. THOMPSON. *Internal Auditing as an Aid to Management*: W. T. JEROME.

Agricultural History

VOL. 26, No. 4, OCTOBER 1952. *British Policy and Native Agriculture in Kenya and Uganda*: G. H. PARKER. *Henry A. Wallace's Editorials on Agriculture Discontent, 1921-28*: M. O. SILLARS. *Antecedents of TVA: The Legislative History of Muscle Shoals*: N. WENGERT. *Russian Expansion in the Light of Turner's Study of the American Frontier*: D. D. TREADGOLD. *The Opium Poppy as a Food and Spice in the Classical Period*: A. C. ANDREWS.

Journal of Farm Economics

VOL. XXXV, No. 2, MAY 1953. *What Should Go into the Parity Price Formula?*: G. SHEPHERD. *Land Reform and Economic Development*: R. BARLOWE. *China's Road to Collectivization*: A. D. BARNETT. *The Nature of the Race between Food Supplies and Demand in the United States, 1951-75*: W. W. COCHRANE and H. C. LAMPE. *Some Economic Implications of Input-Output Relationships in Fryer Production*: E. L. BRAUM and H. G. WALKUP. *Prices as Indicative of Competition among Retail Food Stores*: K. D. NADEN and G. A. JACKSON. *Fifty Years of Farm Records in Minnesota*: G. A. POND. *Fuller Usage of Punch-card Equipment in Social Science Research through Improving Techniques*: W. E. PAULSON and R. L. SMITH.

Economic Geography

VOL. 29, No. 2, APRIL 1953. *The Railways of French North Africa*: B. E. THOMAS. *Land, People, and Progress in the Cook Islands*: W. B. JOHNSTON. *Tonitown: Ozark Vineyard Center*: L. HEWES. *Connellsville Beehive Coke Region—a Declining Mineral Economy*: E. W. MILLER. *Barstow, California: a Transportation Focus in a Desert Environment*: J. GARRISON. *The Fishing Industry of the Outer Hebrides*: W. A. HANCE.

The Journal of Accountancy

VOL. 95, No. 5, MAY 1953. *Factors Affecting Fee Setting in the Professions*: J. BACKMAN. *Procedure for Tax Refunds Over \$200,000 Explained*: H. T. REILING. *Show Surplus Restrictions from Treasury Stock Purchases*: F. K. RABEL. *Income Determination and Accounting for Emergency Facilities*: P. WEBSTER. *How to Play Audit Engagement to Cut Down Man Hours*: C. H. GRAY. *Accountant's Course when Client Needs Life Insurance*: M. D. BACHRACH.

VOL. 95, No. 6, JUNE 1953. *The Case against Life*: M. MOONITZ. *The Case for Life*: H. T. MCANLY. *Increasing Charitable Deduction by Non-Cash Gifts*: J. K. LASSER. *CPAs, Bankers help each other to help Clients*: A. R. JENNINGS. *CPA's Responsibility for Events after Statement Date*: W. POWELL. *Professional Obligations to the CPA*: V. TILLY.

University of Maine Bulletin

VOL. LV, No. 11, APRIL 1953. *Regulation W: Experiment in Credit Control*: R. P. SHAY.

Revue D'Économie Politique

VOL. 63, No. 2, MARCH-APRIL 1953. *La réforme monétaire, condition de l'unité européenne*: R. AUBOIN. *Le rôle de l'Amérique dans la stabilisation monétaire*: W. J. BUSSCHAU. *Réflexions sur une politique inflationniste du crédit*: M. BOUNIATIAN. *Le problème des interdépendances, chance d'une économie appliquée*: J.-J. BOULANGER. *Le problème de l'organisation de l'enseignement économique en France*: Introduction: C. RIST. I.—*Contre une coupure des études économiques et des études juridiques*: F. DIVISIA. II.—*Pour la création de Facultés de Sciences économiques et sociales*: M. ALLAIS.

Population

VOL. 8, No. 1, JANUARY-MARCH 1953. *Les problèmes de population européenne*: I. *Un plan d'études*. II. *Perspectives sur les populations*: A. SAUVY and J. BOURGEOIS-PICHAT. *Alcool, ou lait et viande?*: R. DUMONT. *Problèmes psychologiques de l'immigration en France*: J. STOETZEL and A. GIRARD. *Un démographe engagé: Arsène Dumont (1849-1902)*: J. SUTTER. *Influence de la météorologie et de la mortalité sur les naissances*: J. VORANGER. *Conception d'un dictionnaire démographique*: P. VINCENT. *Observations sur la disparition de l'analphabétisme*: R. BINTON.

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[To be reviewed.]

Banking and Foreign Trade. A Series of Lectures delivered at the Fifth International Banking Summer School, Christ Church, Oxford, July 1952. London: Europa Publications (for the Institute of Bankers), 1952. 8½". Pp. 256. 15s.

[This, like earlier volumes, contains the lectures delivered at the International Banking Summer School, held during July 1952. Prof. A. J. Brown opened with a discussion of "The Present Pattern of World Trade" in which he put the main emphasis on the economic forces shaping the pattern of trade and the current changes due to changes in those forces. Prof. R. F. Kahn, in speaking on "International Regulation of Trade and Exchanges," was concerned primarily with the edifice erected during the last years of the war to deal with commercial policy and the regulation of currencies—the I.M.F. and its articles of agreement, the I.T.O. and G.A.T.T.—the concept in the minds of those who planned them and the reasons why that concept has not been realised. Dr. Per Jacobsson, in discussing, on a more personal plane, the problems of "Trade and Financial Relationships between Countries—the Progress towards Multilateralism" provided many interesting and sometimes controversial *obiter dicta* about the ineffectualness of the International Monetary Fund, American opposition to the German rehabilitation scheme of 1950, the wisdom of aiming at convertibility, the virtues of flexible monetary policies. Mr. W. B. Reddaway dealt with "Government Intervention and Influence in Foreign Trade." His main conclusions were these; that the world should strive to get away from detailed and ever changing intervention; that a simple sweeping away of all restrictions is impossible; that a longer-term policy should be based on determined attempts by deficit countries to avoid excessive aggregate demand, improvement of competitive power (if necessary by devaluation) where deficits are chronic, the freeing of markets by surplus countries. These more academic contributions were followed by a group of lectures by experts on banking techniques. Mr. L. G. Pearce, Assistant Chief Cashier in charge of Exchange Control and Overseas in the Bank of England, provided a very interesting and useful account of "British Exchange Control—the System and its Effects." Mr. H. H. Thackstone, Chief Foreign Manager of the Midland Bank, described "The Methods of Financing Foreign Trade: The Part Played by the Banks." Mr. Paul Bureau gave an excellent account of "The Position of Sterling in International Trade." Sir Cecil Weir, formerly Chairman of the British Dollar Exports Board, discussed "Problems of Foreign Trade," Mr. F. E. Harmer "The Practical Carriage of Goods by Sea" and Mr. C. H. Johnson added "Some Practical Points regarding Documents of Marine Insurance and Clauses in relation to Foreign Trade."]

CHILDREN'S SAFETY CRUSADE TRUST. *The Child on the Road*. A report based on a study of the experience of 1951 presented to the National Federation of Women's Institutes. London: Economic Research Council for the Children's Safety Crusade Trust, 1953. 9½". Pp. 72. 4s.

[This is the report of a study group under the chairmanship of Professor J. Harry Jones. Most of its space is taken up with detailed statistical particulars of road casualties suffered in 1951, analysed by time of day, age of child and circumstances of accident. The most striking feature of the charts is that the

pedestrian accident rate is invariably highest for children aged about six, whereas the number of accidents to cyclists generally rises in each successive age group up till sixteen.]

CROSLAND (C. A. R.). *Britain's Economic Problem*. London: Jonathan Cape, 1953. 8". Pp. 5 + 224. 12s. 6d.

[To be reviewed.]

DOUGLAS (D. W.). *Transitional Economic Systems. The Polish-Czech example*. London: Routledge & Kegan Paul, 1953. 9". Pp. vii + 375. 25s.

[To be reviewed.]

FAY (C. R.). *Round about Industrial Britain 1830-1860. The Toronto Lectures*. Toronto: University of Toronto Press (London: Geoffrey Cumberlege), 1952. 9½". Pp. 227. 45s.

[To be reviewed.]

FLORENCE (P. S.). *The Logic of British and American Industry. A realistic analysis of economic structure and government*. London: Routledge & Kegan Paul, 1953. 8½". Pp. v + 368. 28s.

[To be reviewed.]

GAMBA (C.). *The Italian Fishermen of Fremantle. A preliminary study in sociology and economics*. Crawley, Western Australia: University of Western Australia, 1952. 10". Pp. 100. 10s. 6d.

[The author describes the development of the fishing industry in Western Australia and the legislation to which it has been subjected, particularly with regard to marketing. After two chapters devoted to these economic issues, the author goes on in the third to discuss the Italian community in Fremantle from the point of view of human ecology.]

GLASS (D. V.) (Ed.). *Introduction to Malthus*. London: Watts, 1953. 8". Pp. v + 205. 10s. 6d.

[To be reviewed.]

HURSTFIELD (J.). *The Control of Raw Materials. History of the Second World War*. London: H.M. Stationery Office and Longmans, 1953. 9½". Pp. v + 530. 35s.

[To be reviewed.]

HUTTON (G.). *We Too Can Prosper. The promise of productivity*. London: Allen & Unwin for the British Productivity Council, 1953. 8½". Pp. 248. 12s.

[To be reviewed.]

LAMBTON (A. K. S.). *Landlord and Peasant in Persia*. London: Oxford University Press, under the auspices of the Royal Institute of International Affairs, 1953. 9". Pp. v + 459. 42s.

[The main emphasis of this extremely learned volume is legal and institutional rather than economic, but it contains a great deal of value to any student of the Persian economy, and is likely to establish itself as the standard work in its field. The first part of the book traces the historical development of land tenure in Persia from early times until 1906. In the second the author surveys the existing situation, with much detail relating to conditions in different parts of the country. Concluding chapters deal with the standard of living of the peasant and the ever-present problem of indebtedness, and discuss means whereby improvements in the present unsatisfactory agrarian conditions might be effected.]

LENGYEL (S. J.). *International Insurance Transactions. Insurance in the balances-of-payments*. Melbourne: Faculty of

Economics and Commerce (London: Wadley & Ginn), 1953. 9½". Pp. 139. 55s.

[This extremely painstaking work falls into two parts. In the first the author describes the chief forms of international insurance transactions and attempts to assess trends in the balances of international insurance payments in recent times. The second part is a country-by-country survey, giving such official figures relating to insurance business as are available in each case, and supplementing these with estimates of the order of magnitude of the place of insurance remittances in the country's balance of payments, in cases where, as is usual, the official figures are silent on this point.]

LERNER (A. P.). *Essays in Economic Analysis*. London: Macmillan, 1953. 9". Pp. v + 394. 28s.

[To be reviewed.]

MCCLEARY (G. F.). *The Malthusian Population Theory*. London: Faber, 1953. 9". Pp. 191. 15s.

[To be reviewed.]

MOORE (A. M.) and PERRY (J. H.). *Financing Canadian Federation*. Toronto: Canadian Tax Foundation, 1953. 9". Pp. iii + 117. \$1.

[This study of the fiscal relations between the federal government of Canada and the provinces is divided into three parts. The first sketches briefly the course of events from Confederation in 1867 till 1941, and prepares the way for the detailed discussion in part two of the provisions of the federal-provincial tax agreements concluded between 1941 and 1952. In the final part the authors discuss the reasons why the agreements have in practice worked out reasonably well despite some seemingly obvious shortcomings in the principles on which they are based.]

NEWARK (F. H.), COOK (J. I.), HARKNESS (D. A. E.), FREER (L. G. P.) and NEILL (D. G.). *Devolution of Government. The experiment in Northern Ireland*. London: Allen & Unwin for the Institute of Public Administration, 1953. 8½". Pp. 99. 6s.

[This group of five papers on administrative and constitutional problems in Northern Ireland includes two essays likely to be of particular interest to economists: "Financial Relations between the Exchequers of the United Kingdom and Northern Ireland," by J. I. Cook, and "Agricultural Administration in Northern Ireland," by D. A. E. Harkness.]

THE NUFFIELD FOUNDATION. *Ten Year Review, 1943-1953*. London: The Nuffield Foundation, 1953. 8½". Pp. 50.

[This retrospective report records the main policies pursued by the Nuffield Foundation during the first ten years of its life and gives a general indication of the kinds of work supported. A more detailed account of particular projects and achievements is to be published separately.]

ORD (L. C.). *Industrial Frustration. Common sense for trade unionists*. London: Mayflower Publishing Co., 1953. 7½". Pp. vii + 178. 12s. 6d.

[In this posthumous book the late Lewis C. Ord restates his well-known views about industrial efficiency and the crucial importance of reducing to the minimum the proportion of the labour force occupied with "non-productive" or managerial functions. The book is marked by a good deal of overstatement, and many of the arguments used by the author hardly satisfy the requirements of scientific method; but much of what he says is interesting and worthy of attention, especially where he is drawing on his own personal experience.]

PEARL (M. L.). *William Cobbett. A bibliographical account of his life and times*. London: Oxford University Press, 1953. 9". Pp. v + 266. 25s.

[This bibliography is based chiefly on Professor G. D. H. Cole's collection, which is now in the library of Nuffield College, Oxford. It also contains a large No. 251—VOL. LXIII.

number of items not in the Cole collection which Mr. Pearl has been able to locate elsewhere. The extent of Cobbett's writings is so vast, and the editions of the more popular of them so numerous, that completeness is scarcely attainable; but further research is unlikely now to add more than a little to Mr. Pearl's list, and his long notes on the contents and circumstances of publication of each of the items included make a valuable contribution to the biography of Cobbett as well as to bibliography.]

ROBINSON (H.). *Britain's Post Office. A history of development from the beginnings to the present day.* London: Oxford University Press, 1953. 9". Pp. v + 299. 21s.

[This book is addressed to the general reader. It traces the growth of postal services in Britain from Tudor times up till the Second World War. Professor Robinson describes in some detail the gradual extension in the scale and scope of the Post Office's activities, and reviews the controversies that have from time to time arisen about its administration and the political status of the Postmaster-General.]

SLEEMAN (J. F.). *British Public Utilities.* London: Pitman, 1953. 9". Pp. v + 270. 20s.

[The first fifty or so pages of this useful text-book are devoted to a general discussion of the characteristic features of the industries customarily included under the term public utilities; the remainder of the book deals separately with railways, road transport, inland waterways, harbours and docks, civil aviation, the Post Office, broadcasting, gas, electricity and water supply. The treatment of each industry follows uniform lines, taking in turn its economic characteristics, its charges system and its history. The author's approach is realistic rather than theoretical, and although he endeavours to analyse public utilities in terms of economic principles, he does not enter into the modern theoretical controversies about price and output policy. This is no doubt a deliberate decision on his part, but it may be wondered if he does not push it too far by taking as axiomatic, without discussion, that public utilities must cover their costs unless there are some special non-economic grounds for subsidising them. For this reason the general chapters of the book cannot be taken as an entirely satisfactory introduction to the literature of the subject, though they contain much useful material and good sense. The book as a whole may, however, be recommended as a workman-like survey of its large field, and as a good antidote to excessively *a priori* treatments of its subject.]

TAWNEY (R. H.). *The Webbs in Perspective. The Webb Memorial Lecture, 1952.* London: University of London, 1953. 8½". Pp. 21. 2s. 6d.

[In the first part of this highly characteristic and stimulating lecture Professor Tawney discusses the aims which Sidney and Beatrice Webb set up for themselves in their work and the methods by which they sought to achieve them. He then passes on to consider the relevance of their ideas to present-day problems, and suggests that "While many of the Webbs' conclusions continue to be rejected, the premises of their thought have silently won their way."]

TREVOR-ROPER (H. R.). *The Gentry 1540-1640. Economic History Review Supplements; No. 1.* London: Cambridge University Press for the Economic History Society, 1953. 10". Pp. 55. 5s.

[This interesting and distinguished paper is the first of the series of supplements to the *Economic History Review* projected by the Economic History Society. In it Mr. Trevor-Roper advances reasons for doubting the validity in certain important respects of Professor Tawney's interpretation of the period 1540-1640 as the century of "the rise of the gentry."]

WEIR (SIR C. M.). *Civilian Assignment.* London: Methuen, 1953. 9". Pp. vii + 182. 21s.

[For thirteen years, from 1938 to 1951, Sir Cecil Weir was one of the men who were called in when Ministers and the Civil Service were confronted by a problem which required more than ordinary organising and administrative gifts for its

solution. Sir Cecil Weir has described some of the tasks that were thus loaded on to him. He starts with the Empire Exhibition at Glasgow in 1938. He goes on to be Commissioner of Civil Defence for the western district of Scotland in the critical early years. He is brought down to London in 1940 to create an export drive when gold and dollars are running out and lend-lease not yet in sight. He is put in charge of factory and storage space when departmental competition made control an inevitable necessity. He proceeds to the concentration first of the hosiery industry and then other industries as release of factory space and manpower become urgent. Penicillin is one of his next activities, sandwiched in between dozens of other responsibilities as Director General of Equipment and Stores at the Ministry of Supply. The latter include the jerrican and demobilisation clothing for the whole of the Forces. With the war over, he is at once involved in relief and rehabilitation of liberated areas. Then to Germany to succeed Sir Percy Mills in 1946 as head of the economic side in the Control Commission. Finally, after three years in Germany he becomes chairman of the Dollar Exports Board when it was dollar exports or death for the United Kingdom. Sir Cecil Weir's modest account of these busy years will delight those who knew and admired him and recall those busy days. But it is in some respects too modest. His problems and his colleagues are but lightly and briefly sketched, and we are allowed scarcely a glimpse behind the scenes of the very real difficulties and great responsibilities which Sir Cecil Weir encountered and conquered over those years.]

WILLMOTT (F. B.). *The Time for Decision. An industrialist looks at life.* London: The Saint Catherine Press, 1953. 7½". Pp. 202. 15s.

[The author is a well-known Birmingham industrialist. He is an enthusiastic believer in encouraging the corporate spirit in industry. He is confident that if this is achieved it will destroy the attractions of socialism and restore the country to prosperity and political greatness. His approach may be indicated by quoting the list of "preferences" with which his book concludes: "conscious necessity; solvency before bankruptcy; orderliness; country before party; unpopular measures before popular palliatives; wisdom before foolishness; stability for weakness; decision for indecision; exports before imports; national prosperity before electoral 'votes'; deflation before inflation; sound for unsound finance; overseas prestige before the loss of dignity as, for example, 'The Persian Calamity'."]

WRIGHT (L. C.). *Scottish Chartism.* Edinburgh: Oliver & Boyd, 1953. 8½". Pp. 242. 21s.

[To be reviewed.]

Indian

GADGIL (D. R.). *Poona: a Socio-Economic Survey. Part II.* Poona: Gokhale Institute of Politics and Economics, 1952. 10". Pp. 324. 30s.

[This is the second volume in a series of socio-economic studies of Poona, the first of which appeared, and was noted, in 1945. This volume covers a variety of aspects, including the growth of the town, its housing, community organisation, municipal government, education and public health.]

KRISHNA (V. S.). *International Economic Co-operation. Sir William Meyer Lectures for 1949-1950.* Madras: University of Madras, 1952. 10". Pp. 146. Rs 10/-.

[The six lectures were given before the University of Madras by Dr. Krishna, the Vice-Chancellor of Andhra University. Their subjects were: "The nineteenth century world economic order"; "disintegration and beginning of mutual aid"; "extraordinary aids"; "chronic disequilibrium and world economic development"; "technical assistance and provision of long term capital"; "equitable exchange rates and non-discrimination."]

PHELPS BROWN (E. H.). *Economic Growth and Human Welfare*. Three lectures delivered to the Delhi School of Economics. Delhi: Ranjit, 1953. 7". Pp. 55. 3s. 6d.

[Professor Phelps Brown discusses in these interesting and notably well-written lectures some of the human and social problems raised by the progress of economic development. In the first lecture he considers some of the chief difficulties facing countries at present embarking on a programme of industrialisation. He suggests that these difficulties are essentially the same as those faced by Britain and other older industrial countries at an earlier date in their history, and goes on to give his support to the view now so fashionable, especially in the United States, that the chief means of overcoming these difficulties lay in the development of a dynamic entrepreneurial class. In considering the circumstances most favourable to the development of the entrepreneurial mentality, the author accords high importance to ease of communications, as enlarging the sphere of business operations and making possible the conduct of business on a basis more impersonal and less bound by conventional customs and notions of morality than is likely to exist in a narrowly localised economy whose members are closely linked by personal ties. In the other lectures Professor Phelps Brown discusses with special reference to Great Britain some of the tensions and discontents arising in an industrial society and the response they evoke. In the brief space at his disposal the author is naturally obliged to leave many of his most interesting ideas without any documentation, and no doubt many readers will not agree with the whole of his interpretation of British experience. No one, however, can fail to be interested and stimulated by reading what he has to say.]

American

BLACK (J. D.). *Introduction to Economics for Agriculture*. New York: The Macmillan Company, 1953. 9½". Pp. v + 727. \$6.00.

[To be reviewed.]

CANNON (J. T.) and WICHERT (J. A.). *Marketing: Text and Cases*. London: McGraw-Hill, 1953. 9". Pp. vii + 627. 51s.

[This lively text-book is intended for the use of college students of marketing, and is based on the experience gained by its authors in teaching the subject in the University of Kansas. A feature is the inclusion of case studies throughout the text to illustrate the principles enunciated and to stimulate the student to think out practical problems for himself.]

CHARNES (A.), COOPER (W. W.) and HENDERSON (A.). *An Introduction to Linear Programming*. New York: John Wiley (London: Chapman & Hall), 1953. 11". Pp. 74. 20s.

[Linear programming and its economic analogue, known as activity analysis, have been among the more fruitful developments of mathematical economics in recent years. The basic formal results have, however, only been available in advanced mathematical contexts or in the cumbersome economic treatments produced at the Chicago cloister. The treatment of the elementary mathematical theory in this booklet by A. Charnes is thus to be welcomed, both on this count and for his extensions of the theory. This exposition should be of considerable value to anyone who has a grounding in linear algebra and wishes to learn something of the possibilities of this technique. About a half of the book is marred by what is termed an "economic introduction" due to W. W. Cooper and A. Henderson. The student with only a limited time at his disposal should not spend too much of it in trying to understand this introduction or why it was written.]

GORDON (R. A.). *Business Fluctuations*. New York: Harper & Brothers (London: Hamish Hamilton), 1952. 8½". Pp. vii + 624. 40s.

[To be reviewed.]

KUZNETS (S.) assisted by JENKS (E.). *Shares of Upper Income Groups in Income and Savings*. New York: National Bureau of Economic Research, 1953. 9". Pp. 725. \$9.00.

[To be reviewed.]

LEONTIEF (W.) AND OTHERS. *Studies in the Structure of the American Economy*. Theoretical and empirical explorations in input-output analysis. New York: Oxford University Press, 1953. 9½". Pp. v + 561. 88s.

[To be reviewed.]

MYERS (W. S.), JOHNSON (J. L.) and MARTIN (J. W.). *Kentucky Income Payments by Counties, 1939, 1947, 1950 and 1951*. Lexington, Kentucky: Bureau of Business Research, University of Kentucky, 1953. 11". Pp. 37.

[A further instalment in the series of regional income studies undertaken by the Bureau of Business Research in the University of Kentucky.]

NAFTALIN (A.), NELSON (B. N.), SIBLEY (M. Q.) and CALHOUN (D. C.) (Editors). *An Introduction to Social Science*. Chicago: J. B. Lippincott, 1953. 10". Pp. v + 1123.

[This massive volume is designed to provide the basic reading for a one-year undergraduate course in general social science. Its three parts are entitled respectively "Personality," "Work" and "Community." The text consists of 134 passages averaging about seven or eight pages in length, with brief introductory essays by the editors in each section. The authors drawn upon range from Plato and St. Augustine through Freud and Marx to Senator Kefauver and Professor Samuelson.]

PIERSON (F. C.). *Community Wage Patterns*. Los Angeles: University of California Press, 1953. 9½". Pp. 213. \$3.75.

[This is a study of the wage level and the inter-industry structure of wages in the Los Angeles area as compared with other parts of the United States. The author subjects to statistical analysis the relation between wages and the type of commodity produced, employment and productivity in different industries and industry groups, and also deals, necessarily in more descriptive manner, with the effects on wages of the growth of trade unionism in California in recent times. His general conclusion is that "wages in different industries and localities form a well-knit structure largely controlled by economic and social forces operating on a broad regional and national basis."]

TVA. *Two Decades of Progress*. Washington: United States Government Printing Office, 1953. 9". Pp. 76.

[This is the nineteenth annual report of TVA. It records its achievements in water control, chemical engineering and other spheres, and assesses the contribution it has made to an understanding of the economics of resource utilisation generally.]

WILLIAMS (J. H.). *Economic Stability in a Changing World*. Essays in economic theory and policy. New York: Oxford University Press, 1953. 8½". Pp. v + 284. 30s.

[To be reviewed.]

YANG (LIEN-SHENG). *Money and Credit in China*. A short history. Cambridge, Mass.: Harvard University Press, 1952 (London: Geoffrey Cumberlege, 1953.) 9½". Pp. 143. 25s.

[The bulk of this book is devoted to a detailed account of the different types of coins and paper money that have circulated at various times in the course of Chinese history. The author also deals at length with credit institutions and terms of lending and the changes which they underwent in the nineteenth century. In an introductory chapter Professor Yang discusses generally in the light of Chinese history and traditions the slow development of credit facilities and the orientation of such facilities as existed towards high-interest loans for consumption purposes.]

French

FLAMANT (M.). *Théorie de l'Inflation et Politiques Anti-Inflationnistes*. Paris: Dalloz, 1952. 8½". Pp. ix + 231.

[M. Flamant has attempted, in a short compass, to examine a number of the theoretical explanations of inflation which have been advanced. He considers the concept of an "inflationary gap" and the policies appropriate to the removal of inflation. The book bears the sub-title, "An Essay in the Application of Keynesian concepts." The problem of policy with which M. Flamant is concerned, indeed, is that of maintaining full employment without falling prey to inflation.]

FOURASTIÉ (J.). *La Productivité*. Paris: Presses Universitaires de France, 1952. 7". Pp. 118. 150 frs.

[This is a short study of the meaning of productivity, a discussion of various measures of it, and of the factors which influence its growth. The term "productivity" is much abused; the wide measures which have perforce been used have their greatest weakness in that it is very difficult to assign to them any precise meaning. In this dangerous field, M. Fourastié has attempted to combine simplicity with generality.]

GABILLARD (J.). *La Fin de l'Inflation. Observation Économique*, No. V. Paris: Société d'Édition d'Enseignement Supérieur, 1952. 10". Pp. vii + 359.

[To be reviewed.]

LE BOURVA (J.). *L'Inflation Française d'Après Guerre 1945-1949*. Paris: Armand Colin, 1953. 9½". Pp. 381.

[To be reviewed.]

LOGÈRES (MARC DE). *Les Mouvements de Prix aux États-Unis dans la période de reconversion*. Paris: Armand Colin, 1952. 10". Pp. 223.

[This book is designed to deal with: (a) a statistical survey of the development of American prices in the post-war years; (b) analysis of the main factors governing that development; (c) the influence of the State in regard to the American price-level; (d) similarities and differences between cyclical movements and problems of reconversion. M. de Logères has sought to cast light on important aspects of a remarkable period in the economic history of the United States.]

RIST (M.). *La Federal Reserve et les Difficultés Monétaires d'après Guerre, 1945-1950*. Paris: Armand Colin, 1952. 9½". Pp. 365.

[M. Rist has made a study of the position of the Federal Reserve Banks in the United States after the War. His analysis is conducted on both the theoretical and applied planes: it is preceded by a brief outline of the American banking structure. He examines the powers of the Federal Reserve system and what he sees as its subjection in recent years to the Treasury. The final sections are concerned with the author's interpretation of American experience in the light of contemporary monetary theory and the theory of central banking.]

Belgian

JACQUEMYNS (G.). *La Fermeture des Magasins le Dimanche et en Semaine*. Bruxelles: Parc Léopold, 1952. 8½". Pp. 60.

[This little book contains the results of inquiries conducted among the peoples affected, concerning the advisability of legislation to prohibit Sunday and late evening work among independent traders and artisans in Belgium.]

German

SCHNEIDER (E.). *Einführung in die Wirtschaftstheorie*. Volume III. *Geld, Kredit, Volkseinkommen und Beschäftigung*. Tübingen: J. C. B. Mohr (Paul Siebeck), 1952. 9½". Pp. vi + 220. DM. 14.

[This is the third and final volume of Professor Schneider's *Introduction to Economic Theory*, the first two volumes of which have already been translated into English and reviewed in the June issue of the JOURNAL, p. 407. In the brief compass of some two hundred pages Professor Schneider here covers the theories of money, banking and the determination of national income and employment. The treatment is abstract throughout but extremely clear; in the latter part of the book the treatment of the Keynesian model and its variants tends to be rather algebraic, but even here the student will be grateful for the simple presentation and derivation of the formal properties of the models.]

STISSER (R.). *Grundgedanken, Methoden und Ergebnisse der schweizerischen Agrarmarkt und Ernährungspolitik*. Kiel: Institut für Weltwirtschaft an der Universität Kiel, 1953. 9½". Pp. 183. DM. 15.

[This is a thorough survey of the fortunes of the Swiss agriculture in the last twenty-five years. Special attention is given to agricultural policy after 1938, the object of which was to change the structure of production in order to ensure a steadier income level.]

Swiss

HILL (W.). *Die Industrialisierung der Agrarstaaten und ihre Rückwirkungen auf die europäische Textilindustrie*. Zurich: Polygraphischer, 1953. 8½". Pp. 349. Sw. Fr. 17.70.

[This study falls into two parts. In the first the author traces in considerable detail the industrialisation of Japan, China, India and Latin America in the last half century. The treatment relies heavily on statistical series culled from many sources, and this section of the book provides a useful survey of the available material. The second part considers the effects of the industrialisation of these countries on the European textile industries and sets out the well-known and depressing conclusions.]

RIEDLE (H.). *Hermann Heinrich Gossen 1810-1858. Ein Wegbereiter der modernen ökonomischen Theorie*. Winterthur: P. G. Keller, 1953. 8½". Pp. 137. Sw. Fr. 12.

[To be reviewed.]

Dutch

VERDOORN (P. J.). *Welke zijn de achtergronden en vooruitzichten van de economische integratie in Europa, en welke gevolgen zal deze integratie hebben, met name voor de welvaart in Nederland?* The Hague: Centraal Planbureau, 1952. 9½". Pp. 95.

[This article analyses the consequences of the economic integration of Europe and, in particular, the possible effects that this may have on Holland. There are a number of suggestive, if ambitious, analyses of the relations between the levels of national income and production in tertiary industry, of the level of production and productivity, and of the amount of investment required for a given volume of production in various industries.]

Official

BRITISH

THOMAS (G.). *Labour Mobility in Great Britain 1945-1949. An inquiry carried out for the Ministry of Labour and National Service.*

London: Central Office of Information, 1953. 13". Pp. 71, and appendices.

[To be reviewed.]

CANADIAN

GOVERNMENT OF CANADA. DEPARTMENT OF TRADE AND COMMERCE. Private and Public Investment in Canada. Outlook 1953. Ottawa: Queen's Printer, 1953. 9½". Pp. 22.

[This report foreshadows a considerable increase in total investment in Canada in 1953, accompanied by some substantial shifts in its structure. These stem chiefly from the completion or near completion of defence projects. Expenditure on construction is expected to increase particularly rapidly, whereas a slight decline is expected in the volume of investment in machinery and equipment.]

GOVERNMENT OF CANADA. DEPARTMENT OF TRADE AND COMMERCE. Supply of Building Materials in Canada. Outlook 1953. Ottawa: Queen's Printer, 1953. 9½". Pp. 24.

[This is a companion to the report on prospects for investment in Canada in 1953 noticed above. Reasons are given for expecting that the supply of building materials in 1953 will on the whole be adequate to support the heavy construction programme in prospect.]

INTERNATIONAL

ORGANISATION FOR EUROPEAN ECONOMIC CO-OPERATION. European Economic Co-operation. A third Survey prepared by the Organisation for European Economic Co-operation for the Council of Europe. Paris: O.E.E.C., 1952. 9½". Pp. 25 + annexes. 5s.

[The main text of this report contains a brief survey of economic developments in Europe in 1951 together with an account of the work done by O.E.E.C. during that year. It is accompanied by three substantial annexes: the first and longest on the prospects for European economic expansion in the next few years, the second on international co-operation in the sphere of raw materials and the third an account of the work of O.E.E.C. in connection with overseas development.]

ORGANISATION FOR EUROPEAN ECONOMIC CO-OPERATION. The Internal Financial Situation in member and associated countries. Paris: O.E.E.C. 1952. 9½". Pp. 55. 2s. 6d.

[This is a short report prepared by a group of independent economists, namely C. Bresciani-Turroni, E. R. Lindahl, A. W. Margot, M. Masoin, L. C. Robbins, J. Rueff and E. Schneider. It contains critical discussions of internal financial developments and policies in the United States, France, the United Kingdom and Belgium in 1950-52, with briefer accounts of events in other European countries.]

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT. The Economic Development of Ceylon. Report of a mission organised by the Bank at the request of the Government of Ceylon. Baltimore: Johns Hopkins University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. v + 829. 60s.

[To be reviewed.]

UNITED NATIONS. Report on a Special United Nations Fund for Economic Development. New York: United Nations Department of Economic Affairs, 1953. 9". Pp. vii + 61. 3s. 9d.

[This is the unanimous report of a Committee appointed at the request of the Economic and Social Council of the United Nations, endorsed by the General Assembly in December 1952. The terms of reference required the Committee to prepare "a detailed plan for establishing, as soon as circumstances permit, a special fund for grants-in-aid and for low-interest, long-term loans to under-developed countries." The report recommends that the Fund—to be known as

SUNFED—should be financed by voluntary pledges of continuing contributions from member countries, rather than by an initial fully paid-up capital fund, and that it should not be established till a minimum of \$250 million has been pledged. The avowed purpose of the Fund would be to grant loans on more generous terms than those available from the International Bank or commercially, and to finance projects of a non-self-liquidating character that would otherwise be unable to secure support. It is recommended that assistance from the Fund should be given only to governments and only on the request of governments.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION. European Timber Trends and Prospects. Geneva: United Nations, 1953. 11". Pp. iii + 315. 25s.

[This large-scale study contains detailed surveys of the course of consumption, production and trade in each of the chief categories of industrial timber in Europe since 1913, and analyses likely future developments. The authors find that the absence of any increase in the consumption of timber in Europe between 1935-38 and 1950, and the actual sharp decline in consumption in Germany and the United Kingdom over that period, are to be attributed much more to supply deficiencies than to technical changes making possible the replacing of wood by other materials. The deficiency in supply was largely due to the reduced level of imports from the U.S.S.R. and North America. Calculations are furnished to show the likely balance of supply and demand for timber in 1960 on various assumptions, and suggestions are made as to the best means of increasing supply and economising use.]

DECEMBER 1953

REFLECTIONS ON SOME ECONOMIC TRENDS¹

I

I HAVE found a good deal of difficulty in making up my mind what to say to you in this Address. Asked for a title sometime ago, I said I would give you some "Reflections on Present Economic Trends." Nevertheless, it seemed to me that, since I cannot speak to you, as most of your Presidents have done, out of the profundity of their knowledge and learning on some particular economic problem, I might best secure your interest by recounting a few of my experiences in the financial world, having now reached a considerable age, and lived in that world through several decades of vast changes. This will leave me little time for my reflections on Economic Trends. I intend however to express certain opinions I hold, though you may think these are given in a somewhat dogmatic form, and without any attempt to offer a close-knit argument in support of them. This is a risk I have had to run, since time is too short for anything else. The coming years will alone prove whether I am correct or not in my judgments.

It is now over fifty years since I began active life after leaving Oxford. My first introduction to political economy was when I was reading for the Final History School in 1901. I believe it was in this year that political economy for the first time formed a part of any Final School, it being then introduced as a Special Subject in the History School. I remember I decided to take political economy instead of the French Revolution. I cannot say I learned very much, but I had the opportunity to attend lectures by two great economists, Mr. Edwin Cannan and Prof. Edgeworth, the latter of whom I got to know very well indeed at All Souls later on, and for whom I had the greatest affection and admiration. His lectures, however, were almost wholly unintelligible to me. They were never attended, according to my

¹ Presidential Address delivered to the Annual Meeting of the Royal Economic Society on July 2, 1953.

recollection, by more than six or seven undergraduates. He had a blackboard in front of him on which he wrote various signs, unintelligible to me, which he explained in a somewhat strange and obscure manner of speaking. Yet he had certainly a most subtle brain as well as a great sense of humour. No doubt some of you have read Lord Keynes's admirable biographical sketch of him. I remember at breakfast at All Souls one day the then Estates Bursar, Dibblee, quite a good economist himself, told the assembled company, including Edgeworth, that he had had either a dream, or it might have been a nightmare, the night before when it suddenly came to him that the phrase "marginal utility" must have had its origin in the name of Edgeworth. This I think Edgeworth took as a compliment. Edgeworth's lectures, as I say, were incomprehensible to me, because as it is well to confess at once, I have no capacity to understand mathematics or algebra. I have indeed to admit that, as time goes on my capacity to understand much that is written about economics grows less and less, as the mathematicians get more and more into the saddle.

After leaving Oxford I went almost at once to South Africa on Lord Milner's staff just after the end of the Boer War. During a stay of about seven years there, I served first under Lord Milner, then Lord Selborne and then General Botha and General Smuts. I was for six years Secretary of the Railway Committee of the Transvaal and Orange Free State railways, and therefore learned early in life something about nationalised railways. I got to know then that, while nationalised railways might be quite well run, they could perform no miracles that could not be performed by private railways. My last year in South Africa during 1908-9 I had also an opportunity of seeing how constitutions are made. I worked closely with General Smuts in preparing draft constitutions before the National Convention at which the new Constitution was made, and was during the whole of the Convention, that is for about a year, Secretary to the Transvaal delegates—Botha, Smuts, old General de la Rey, Schalk Burger, Kruger's Vice President, and two Rand magnates, Sir Percy Fitzpatrick and Sir George Farrar, the latter of whom had been condemned to death by Kruger's Government for being implicated in the Jameson Raid. We all thought, when the Constitution was signed, that the path was set for uniting the Dutch and British races in the South African Union, and this could and should have happened. But alas, things have turned out very differently.

Shortly after this I became a partner in an international banking firm with Lord Kindersley, with whom I have worked now

for over forty years. I am glad to have had those four years, from 1910 to 1914, under the old dispensation of the gold standard. I feel that my experience must necessarily be very different from those, many of them now very prominent, whose active early life was spent in the days of the great depression during the 1930s. To them the past seems to be merely a time of terrible evils. My early days were spent under conditions which were in some ways vastly superior to anything existing now. It is often customary now to assume that the recent past, say, the last hundred years has been a period of unmitigated evil, suffering and tyranny. There were no doubt great evils, great poverty and times of great unemployment, but on the whole this country was steadily improving the lot of the mass of the population, even if wealth was very unevenly distributed. I believe it to be the case that from 1850 to 1914 the national income of this country increased steadily on the average by some 3% per annum, the general standard of life doubling itself, according to Sir John Clapham, in the last fifty years of the nineteenth century.

These were certainly halcyon days for sterling. Its convertibility was never questioned. It was almost a law of nature. British bankers never had to bother about all the problems of exchange which plague us so much now. We were lending great sums on long-term to the world, and great sums also through acceptance credits on short-term. I have in mind that in the year 1913, just before the First World War, which transformed everything, foreign issues in London amounted to about £200 million. London did a lot in those days for what are now called the undeveloped or under-developed countries of the world, although I fear we had not got so far then as to think that this was a duty which ought to be weighing heavily on our national conscience. London bankers, roughly speaking, knew nothing of transfer problems or of inflation, or of the possibility of not being able to change a Bank of England £5 note at a fixed rate anywhere in the world for any purpose. Perhaps, anticipating a bit, I could tell you a story that illustrates banking knowledge of those days. I remember in the days after the First World War, sometime in 1919, going to that delightful old rabbit warren of a Treasury in Whitehall to see Sir John Bradbury, as he then was, who was head of the Treasury. He happened to tell me that Lord Cunliffe, then Governor of the Bank of England, had just been in to see him and had given him a copy of a Report that a Committee of which he was Chairman had made to Lloyd George, then Prime Minister, on the question of Germany's capacity to pay reparations. Sir

John Bradbury told me that the first item was a payment by Germany of £200 million in gold, and he asked Lord Cunliffe how he had arrived at this figure. Lord Cunliffe's gruff answer was, "Because it's twice as much as they've got." Sir John then asked Lord Cunliffe how the Committee arrived at the huge figure which they estimated Germany could pay. Lord Cunliffe, according to Bradbury, said in reply, "Do you know what the site value of Berlin alone is?" I doubt if Sir John Bradbury knew the answer or thought it relevant, but Lord Cunliffe's question throws a light on how much was then known about the Transfer problem.

Perhaps I might add a pendant to this story. A year or two later I was at a banquet at the Guildhall given to Mr. A. J. Balfour on his retiring from the Membership of the City. I was telling to my next-door neighbour this story of the conversation between Lord Cunliffe and Sir John Bradbury when another banker Peer, who was sitting on the other side of the table, intervened to say, "I was a member of that Committee. We were appointed by Mr. Lloyd George on Friday to tell him what Germany could pay and told we must report to him by the following Monday. We therefore added up what we understood to be the total cost to the allies of the whole war (whether it included the United States costs I am not sure), and we reported on Monday to the Prime Minister that this was what Germany could pay."

During the war, not being passed fit for military service, I left the Profit and Loss world for Government service again, this time in the Ministry of Munitions. In 1915 I was sent out with a friend of mine, Mr. Lionel Hitchens, who had been Treasurer of the Transvaal, by Mr. Lloyd George to Canada to re-organise the purchase of Canadian munitions by the British Government. We formed there, with the approval of the Canadian Government, the Imperial Munitions Board of Canada, which during the remainder of the war spent £250 million of British Government money—a large sum in those days—on munitions. I remained a member of the Board during the rest of the war. Of course we had by this time our own exchange problems in London, and it was highly important for us to get relief from remitting dollars to Canada. I remember urging on Sir Joseph Flavelle, the Chairman of the Imperial Munitions Board, an extremely able man, that it should be quite possible for Canada to lend money to England for the making of Canadian munitions. This was a wholly novel idea to him. He could not believe that Canada could possibly lend money to the United Kingdom. Canada, he said, was

naturally a borrowing country; she could not possibly lend money to another country. However, he discussed this matter with his great friend and my friend, Sir Thomas White, then Canadian Minister of Finance, who, though born in 1866, is still I am glad to say living, and ultimately the Canadian Government lent considerable sums to help us.

In the years 1917–18 I spent nearly a year in Washington, being jointly responsible with Sir Charles Gordon, also a member of the Canadian Imperial Munitions Board, and afterwards President of the Bank of Montreal, for the purchase of munitions from the United States. We were part of the Northcliffe British Mission. That, too, was an interesting experience. It was during this period that for the first time a representative of the British Treasury in the United States—it was then Sir Hardman Lever—sat in his office—in this first war it was not in Washington but in the offices of J. P. Morgan & Co.—knowing that he had no funds with which he could possibly meet the huge commitments of the British Government in that country very shortly falling due. This was an experience that was repeated again years later when I reached Washington early in 1941 just at the time of the first Lend-Lease Act, and when Sir Frederick Phillips was the British Treasury Representative.

In 1918 I returned to the Profit and Loss world with an interval of three months or so in 1919 as financial adviser at the Peace Conference to Lord Robert Cecil, who was then Chairman of the Supreme Economic Council of the Allies. It was here that I met for the first time Lord Keynes, who was then, as you all know, Treasury representative in Paris. I saw a good deal of him during those months. The two great financial problems we were concerned with were German reparations on the one hand and the economic problem of Europe on the other. I remember at one Inter-Allied Financial Committee Meeting, with, I think, Mr. Norman Davis the United States representative in the Chair, a characteristic remark of Lord Keynes. The minutes had been read, and the Chairman asked whether anybody had any comments. Mr. de Lasteyrie, the French representative, held up his hand and said he had a reservation to make. Lord Keynes turned to the Secretary and said, "You need not put that down. Just say that Mr. de Lasteyrie made his usual reservation on all subjects." As you no doubt all know, Lord Cunliffe and Lord Sumner, a well-known judge, were our reparations representatives. Lord Sumner took the view that Lord Cunliffe knew all about finance and economics and that his business was to back him up.

Lord Keynes's comment on Lord Sumner was that he was suffering from senile Teutophobia. Yet Lord Sumner, though no economist, was an extremely able lawyer.

I remember when the first report on reparations was to be put in to the Big Four, Lord Robert Cecil asked me to comment upon it. I wrote him a very short report, saying that I calculated that by the time I was eighty, then being about thirty, Germany would still be paying £400 million a year. If he thought that was politically and financially possible, it was all right, otherwise it was nonsensical. I was in Paris to help Lord Robert on the question of the broad economic problem of Europe, which was then suffering from shortage of food and other things, and growing inflation, in case the Council of Four ever really got down to consider it. But as they never did so, I ultimately said I must go back to London and my business. On Lord Keynes's resignation, Lord Robert wired to me to come back. I returned for two or three weeks, but then as it was clear that our prognostication that the Big Four would never deal with the problem would turn out to be true I came back to London.

After 1919 I went to one or two other interesting meetings. I was Vice-President of the Brussels Conference of the League of Nations in 1920, and I attended the Genoa Conference in 1922 at the request of General Smuts as a representative of South Africa. Most of the economic and financial discussions at these two Conferences were almost identical with those at the Conferences held after the Second World War. But there were big differences also. For instance, after the First World War, Resolutions were sure to be passed to the effect that the first step to take was to free Central Banks from political pressure and the general aim was to return to the Gold—or Gold Exchange Standard. In the same year I was asked by the German Government to be a member of a Committee to advise them on how to stabilise the German mark, which was then in a state of disastrous, ruinous depreciation. Lord Keynes was on the Committee, as also was Prof. Cassel, the well-known Swedish economist for whom I had a great affection. Lord Keynes, Prof. Cassel, Prof. Jeremiah Jenks an American professor and I signed a Majority Report, broadly reporting, according to my recollection, that nothing could be done to save the Reichsmark until some reasonable solution of the German reparation problem was arrived at. There were three other members, Dr. Vissering, who was President of the Bank of the Netherlands, Mr. Dubois, a Swiss banker, and Mr. Kamenka, a Russian banker. None of these three liked to take an attitude

on reparations which would at that moment be very repugnant to opinion in France, and they therefore signed a Minority Report. I remember that Lord Keynes and Prof. Cassel had to leave before the Minority Report was signed. The other members asked Prof. Jenks and me to stay to give them our advice, if they wanted it. A day or two later on going into my hotel, the Kaiserhof (later Hitler's Headquarters), I found a slip of paper from Prof. Jenks, saying he had attended a meeting of the Minority members, and was much impressed with their arguments and was inclined to sign their Report as well as the Majority Report. Would I join with him in doing so? I said I would not and dissuaded him also from signing the Minority Report, which was quite inconsistent with the Majority Report. I also remember—and this may be interesting to you—that on arrival in Berlin we were presented among other papers with a circular issued to the German public by Dr. Havenstein, President of the Reichsbank, an old Prussian official, animated, I feel sure, by the strictest sense of public duty, to say that the Reichsbank was quite well aware of the extreme scarcity of currency in Germany. However, steps had been taken to remedy this situation. The Reichsbank had bought new factories where bank-notes could be made. They had taken on so and so many men (I hesitate to state my recollection of the number of men because the number I have in mind seems impossibly large)—and the public might rest assured that in a short time the scarcity of money would be overcome by the provision of a very large number of additional Reichsbank notes. I think the exchange then was about 40,000 marks to the £. Later on, as you will remember, after the invasion of the Ruhr, Dr. Schacht brought into being the new Rentenmark, one of which was offered in exchange for 1,000 million of the old Reichsmark, which puts the latter's then value at 20,000 million to the £. The public were informed that the Rentenmark was safe because it was secured upon all fixed assets in Germany, and they accepted this, so to speak, successful confidence trick. They were profoundly weary of the terrible consequences of the disastrous inflation, which Germans indeed have never forgotten. In fact, the Rentenmark maintained its value through being kept scarce in quantity.

I saw a good deal of Germany during the reparations period. In the worst times it was, of course, a lunatic asylum. Prices were changed sometimes more than once a day in the shops. I remember two German sayings—one that if anyone ordered a bock of beer to drink he should order two at the same time, be-

cause by the time you had drunk one the price of the next one had gone up. The other saying was that the first thing that a German baby said when it was born was, "What's the dollar?" When I wanted to get a little money from a bank I used to take a rucksack over my shoulder to carry the bundles of notes. It was this period of huge inflation and the destruction of all stable classes in Germany, I shall never cease to affirm, which led later on to the great crisis of 1931, leading ultimately to the Hitler regime. The huge depreciation of the mark caused what was known as the Auction Sale of Germany. The exchange depreciated from day to day so much faster than internal prices that foreigners were able to buy everything in Germany at what would have been absurdly cheap prices in their own countries. Thus Germany was gradually and then more and more rapidly denuded of capital.

I remember when I was a member of the Committee on the stabilisation of the mark, to which I have referred, I bought in Berlin a pair of Zeiss binoculars for about 40,000 marks. This sounded quite a lot to the German seller, but only cost me about £1, which was vastly under the real value of my purchase. I remember also that my bill at the Kaiserhof for a stay, if I recollect correctly, of about ten days was something over 40,000 marks to be paid by the German Government. Naturally I had consumed in food, services and room space a great deal more than £1.

The result of all this was a vacuum of capital in Germany waiting to be filled up by foreign loans at high interest rates. After the Dawes and Young loans were made in 1925 and 1926 the great Governments of the world, at what was known as the Seven Power Conference, urged the bankers of the world to make loans and extend credits to Germany. The bankers in all financial centres, New York to the greatest extent, London next, but also Holland, Belgium, Switzerland and France, responded by making loans through public issues to Germany, as well as by granting short credits and making deposits in the banks, the total coming to very large sums. When the great crisis came in 1931 the bankers of the world attempted to withdraw all their short-term deposits falling due day by day, with fatal consequences to Germany's liquidity. The bankers, no doubt, had acted rashly, but it was at the instigation of their Governments. Particularly the United States bankers rushed into the business (to which they were quite new) of making foreign issues.

I well remember the beginning of the 1931 European crisis, following on the United States collapse in 1929. Just before the

1931 crisis broke out in Europe the Macmillan Currency Committee, of which I was a member, was on the point of finishing its work. It had been sitting, I think, for about eighteen months. I had been with Lord Keynes on a small Drafting Committee, together with Prof. T. E. Gregory. As usual when Lord Keynes was present, most of the drafting was done by his hand.

The day we signed the report I went back to my office, from which I had been more or less absent during the drafting of the Report for I think two or three months. Entering my partners' room I said to them that we had just signed our report. One of my partners looked up and said, "I suppose you know that a first-class crisis is going to break out this week-end in Central Europe?" This was the collapse of the Creditanstalt in Vienna, which led directly to the great financial crisis involving every country and almost made much of our Report already behind the times. In August 1931 as the crisis in Germany was reaching its height I happened to be staying in Berlin with Mr. Jakob Goldschmidt, Chairman of the Darmstädter Bank in Berlin, one of the big "D" banks. The crisis grew worse every day I was there, and Dr. Brüning, whom I had the pleasure of knowing quite well, was pressed every day to take drastic measures. The run on the banks, which was general, was particularly severe on the Darmstädter Bank, which was possibly the least strong of the "D" banks. It was either the day I left or the day after that the Darmstädter Bank closed its doors by the order of the Government, and, it was rumoured, at the urgent request of the Deutsche Bank, which anyhow probably did not mind seeing a rival disappear. During these days in Berlin millions of dollars and pounds were being drawn out, particularly by the American banks, but also by the English and Continental banks as well, as short-term deposits became due. It was obvious that if repayment of your money became due say on August 7 and you knew there were other banks who would certainly withdraw their loans becoming due on August 8, 9, 10 and so on, you would withdraw yours on the 7th.

I remember telephoning from Berlin to my partner, then Sir Robert Kindersley, urging him to get the British banks together and persuade them all to enter into a self-denying ordinance not to withdraw any more money, and also to get into touch with the New York bankers asking them to do the same. This, I think, was one of the first steps which led to what was called the Standstill, whereby international bankers in all countries who were creditors of Germany agreed to co-operate in withdrawing no more money from Germany and to enter into an agreement as between

themselves and the Germans as to how the debts would ultimately be redeemed. By that time I think only £20 million worth of gold was left in the Reichsbank. For the next five years or so I went for about six weeks every winter with Mr. Tiarks of Messrs. Schröder to Berlin to represent the British Banks at the Reichsbank meetings of Bankers from all the creditor countries, first for the drawing up of the Standstill Agreement and then in each subsequent year for its amendment and renewal. Those of us who were in Berlin in the years 1931-36 had every opportunity to follow the lunatic development of the Hitler craze. It is only in the last few months this year, twenty-two years later, that the latest Agreement about these debts has been negotiated with the German Representatives. Few of those bankers who took part in the first meetings are still alive.

When the Second World War broke out I was in London until the end of 1940. In October or November of that year I went, at the request of the British Government, with other business-men on what was called the Willingdon Mission to all the states in South America, to see whether we could develop British business with them and increase our exports to them. It was highly interesting, but except as a goodwill mission I doubt if it was or could have been productive. We had no means, in fact, of developing an additional export trade with those countries at that time, because such was the strain of the war that we could not afford to spend either labour or resources on additional exports. Lord Keynes I remember characteristically described the expedition as merely an example of export exhibitionism on the part of the Board of Trade. When I got to Washington from South America, the British Government requested me to form a Food Mission there. I did so, and remained in Washington for five or six years in various capacities, including being representative of the Treasury, and taking part with Lord Keynes and others in the American loan negotiations and in the negotiation of the Bretton Woods Agreement. But I do not think this is the appropriate moment to discuss these years, which must be well in your minds.

II

I have left little time for what I have undertaken to do, that is, to make some reflections on Modern Economic Trends. They must be brief.

Everyone must accept that the 50 million people on this island have no easy future, with world developments as they seem likely

to be, and are faced with an indefinite prospect of hard work. Nevertheless, I see no reason to think it cannot be a good future, if the world remains at peace, if there is a steady and continuous growth of world trade, and if the productive resources of the world can also be steadily developed particularly through the growth of international investment. It is through these things happening that the continuance here and elsewhere of a high level of employment and a growing standard of life depend. They in turn are dependent more than on anything else on the restoration of an orderly international monetary system and of free and stable exchanges, by means of which the movement of capital from creditor countries would be greatly facilitated. The restoration of a stable and convertible United Kingdom £ Sterling, at any rate for all current transactions, would be the greatest step of all towards these objectives. To achieve it should be in my opinion the first aim of all parties in this country. It requires the co-operation of all leading countries, particularly of the United States and this country, whose currencies are so much the most important, but also of the other Western European countries. The obstacles are many, particularly to complete convertibility, but that is all the more reason for putting the attainment of this end in the very forefront of our policy. It is indeed our primary interest to overcome these obstacles. Increased world trade, increased international investment are of the first importance to us, and only within a solid and stable currency and exchange framework can we freely develop all our natural qualities of intelligence, energy and readiness to adventure—and by “we” I do not mean only the Government but the community.

If we are to develop a surplus which will enable us to pay our debts, increase continuously our reserves and provide capital for sterling and other countries, we shall certainly need all these qualities, and we must not suppose that our Government will provide all of them for us.

Put another way, our task is year by year to persuade the rest of the world to buy from us annually, thousands of millions of £'s worth of a varied and varying assortment of products—nearly all manufactured products—with the proceeds from which we can buy our food and raw materials. If one kind of export drops off, we must find or, if necessary, invent another one. This means three things. We must keep right in the van so far as invention is concerned; we must be efficient and competitive at the actual task of production; and lastly, we must be good at selling what we produce. And salesmanship may be as difficult a job as invention

and more difficult than production, and is certainly a job for private enterprise and not for Governments.

It is at least equally important that we should constantly increase our invisible exports, which help us without making much demand on our labour supply. This also requires an adventurous spirit, a continuing effort to see how far we can provide services to the world through shipping, banking, insurance or capital for investment and development. The greater our investments abroad, the easier the task of paying for our imports.

All these tasks require capital, and therefore savings. If they are to be accomplished in the main through private enterprise (as I think they must be) they require private savings, which seem likely to be scarce. We cannot afford that they should be scarce.

Am I being controversial in saying that I agree fully with Lord Beveridge's recent words that a Welfare State, or as he would prefer to call it, a Welfare Society, must find "a means of preserving the value of money, if it is to avoid becoming a State without freedom"?

Thus I conclude that by far the most important function of the State, the responsibility for which is now through the nationalisation of the Bank of England concentrated in its hands, is to aim at the restoration and maintenance in co-operation with other countries of a stable framework of money, exchanges and prices. All the rest of its economic policy should be subordinate to this over-riding duty. By fulfilling it successfully it can best help to put us in a position to meet shocks from the external world, which we must expect, and to take such measures as are available to the Government of so open an economy to take, to prevent or at least to mitigate such unemployment as might inexorably befall us, if international trade were to slump.

Speaking very broadly, where I differ from much modern thought is, I think, in my constantly deepening impression of the enormous complexity of the world at large, and indeed of the special complexity of our own economic life with 50 million people on this very small island, and in my inability to accept the view that our difficulties can best be tackled and brought to order by the constant extension in all fields of the powers of Government. It is often suggested that Government should extend still more widely its ownership wholly or partly of financial or industrial businesses, and maybe commercial too, and all this no doubt accompanied by the maintenance of direct Government controls.

Economists who support in principle such a policy seem to me grossly to underestimate the vast complexity of life to which I

have referred. Some of them no doubt, if they accepted my view, would retort by saying that the greater the complexity, the more important it was that Government control should bring order out of the chaos and anarchy of private enterprise. But to me economic processes acting through markets and prices are the exact opposite of anarchy, being far superior to reliance on orders given by individuals, who can never know more than a fraction of the complex facts of the whole world. And it is with these that we are concerned.

The opposite view is to my mind like saying—what perhaps many people may have almost come to believe—that without a Ministry of Food, the British people cannot be fed, and that the wonderful smoothness with which, for instance, the vast population of London was fed day by day in normal peace-time was a symptom of chaos and anarchy.

I have recently read two books by two very well-known economists, the first by Professor Hayek, called *The Counter-Revolution of Science—Studies in the Abuse of Reason*, and the second by Professor Jacob Viner called *International Trade and Economic Development* containing a series of lectures given at the National University at Rio. I recommend them strongly to my hearers, partly because they are remarkable books, and partly, no doubt, because their arguments support the conclusions that my experience has led me to adopt. Professor Hayek's study seems to me a particularly profound one, but it can hardly be condensed into quotations. I will, however, give you one quotation from Professor Viner. "Theory," he says, "is always simpler than reality. Even when it seems terribly complex, it is still 'simpliste' as compared to the range of factors operating as conditions, as means, or as ends, in any actual concrete situation." He goes on to refer somewhat critically to the tendency towards simplification of what is really complex which manifests itself in excessive "abstraction" in modern economic theory. I cannot but agree with this view, if only for the reason that these abstractions in the form of diagrams or algebraical signs of one sort or another, so commonly set forth nowadays in, for instance, the pages of the ECONOMIC JOURNAL, are unintelligible to me. I have a sincere and humble admiration for the skill and brains of those who are, I believe, termed econometricians and of other abstract practitioners and have great hopes that they may arrive at some valuable conclusions. Yet will not so excessively complex and human a world as ours generally evade their analysis? Is there an economist or a social philosopher, for instance, who can predict

what is going to happen six months, three months, one month ahead? If anyone could, for example, predict securely even one month ahead the course of investment prices, he could without fail make a fortune, and what is still better, a fortune not, for the present at any rate, subject to inordinate taxation at least until his death. Even the most distinguished man can see very little way ahead. Lord Keynes wrote his last article for the *ECONOMIC JOURNAL* in my office in Washington. In it he predicted that it was likely there might be not a scarcity but a plethora of dollars in the forthcoming years after the war!

And the world is not only complex; its economic events are affected day by day by the unpredictable thoughts, prejudices, decisions and actions of human beings, not only the great and powerful, but the innumerable multitude. How greatly economic life has been affected by Hitler, by Stalin, even on a smaller scale by Peron, acting with the complete approval of the masses, who appear to support him in accomplishing the ruin of his country.

But while I am against Governments owning, in whole or in part, competitive industry (a policy I think not now seriously advocated in any country on this side of the Iron Curtain except ours), since that would lead them deeper and deeper into the world's complexities, with which they are not fitted to deal—what I have already said proves that I do not deny for a moment that Governments have an enormously important part to play. To co-operate effectively towards restoring and maintaining an orderly national and international monetary system presents our Government with an immensely difficult and important task, and one involving the wise and courageous use of both monetary and fiscal measures. This duty alone will put as much on its plate as it can cope with effectively.

Since I have taken part over many years in lending to other countries, I should like to add a few words on the question of providing capital for what are called the undeveloped or underdeveloped countries of the world. I believe all parties are agreed as to the importance of this question, and that therefore all my hearers will concur with me in thinking that this is another and important reason why any British Government should put in the forefront of its policy the restoration of our external strength, since otherwise we can play no part. It seems at times that some people, in their enthusiasm, fail to realise what is involved on our side if we are to be providers of capital for countries outside our own borders, even Sterling Area countries. It is only out of a

surplus on our own Balance of Payments that we can find capital for other countries, provided, that is, that we rule out finding the money out of our ultimate reserves, or by ourselves borrowing the equivalent from some third country.

Thus the more we lend, the bigger surplus on our Balance of Payments we must have, and therefore, except in so far as we increase our production, the more we must restrain our own consumption, whether for current or capital purposes, and the more we must eschew all inflationary policies tending to lead to increased imports. It might be tempting at times to combine an inflationary policy, with all its stimulating qualities, with liberal loans to other countries, but such a course would soon end in crisis and disaster.

We must, moreover, remember that we already have uses for any Balance of Payments surplus we earn in paying off the debts we still owe to other countries, which are large, as well as in building up our reserves.

Thus our first task now, if we want to give any considerable aid to other countries, is to estimate what our means are, and whether by producing more or by stinting ourselves in our current consumption, we really are or can become a creditor nation, in other words a nation which has surplus funds to lend. Certainly to provide ourselves year after year with a surplus for all these purposes will tax our strength to the utmost. The solution of this task brings into question every aspect of our national economic and financial policy. Since at the moment we are (if account is taken of all our obligations) more of a debtor than a creditor country, we have quite a way to go yet to be a really large provider of capital to the external world.

But what about much the greatest creditor country in the world, the United States? Why should not the United States play the part now that we have done almost up to the beginning of the last war? Well, there are many reasons. One is that we were only too willing to buy, in fact we had to buy, huge imports from our debtors, with the result that they were enabled—as a rule—to pay the interest and sinking fund payments due on the sums we had lent them. But the United States has no need for the vast continuing imports that we had need for. How, then, are the debtors to meet their interest and sinking fund obligations?

But there is a prior difficulty affecting all creditor nations. It is an unfortunate fact that the world is now totally different from what it was, say, up to 1914, or even in the twenties or thirties, and is in fact about the worst possible world to give encouragement to

foreign investment. How different a world it is, is perhaps more apparent to those who knew by personal experience what it was like early in this century. Does anyone in my audience suppose that private investors, say in the United States or Canada, with the strongest and safest investments at hand in their own safe countries, these countries themselves needing huge sums of capital, are going freely and widely to invest their savings in a world where by and large there is little political or currency stability, where the rights of private capital are now much less regarded, and where sometimes, as soon as the borrowing country has received the money, the charge of exploitation may be made against the lenders? I think we must put out of our heads the idea that there will be any very large amounts of private money directly available at present from creditor countries for under-developed countries, for instance, through public issues in the New York market. The money must come from Governments or semi-Government institutions, such institutions as the International Reconstruction Bank or the United States Export & Import Bank, and no doubt also to some extent from large industrial or financial interests—as, for example, in the case of the proposed big water-power and aluminium development planned for West Africa.

There is a greater chance of investment in Sterling Area countries by the British public through the machinery of the London market or otherwise, but I repeat that the essential preliminary is a surplus on our Balance of Payments, though, if we had labour and resources unused, such investments might themselves act as a stimulus for the additional production needed.

For the rest, if it is Governments or semi-Governmental institutions which must do the lending, certainly in very large sums, then politics at once come in, and we all know what that means.

It is worth while to repeat that those who lay great store on large-scale and continuous investment by creditor countries in undeveloped or under-developed countries should hope and work for, first, international peace, secondly, the restoration of a durable international monetary system, and thirdly, a world in which the minimum rights of foreign investors will be recognised and protected.

While international investment is highly desirable, we have to recognise, however, two limiting factors, to which sufficient importance is sometimes not given.

First, lending to any country must, as I have always indicated, be within the limits of the power of that country to earn and remit to the lending country the interest and sinking fund payments as

they become due. There is in addition a second reason for caution. I am not at all a believer in flooding primitive or even better-developed countries with masses of money. Capital can usefully be absorbed only gradually, and in any case most of the work involved in raising standards of life must be done internally by the Governments and peoples of the countries in question by their own efforts. To pour in capital galore is often like giving a starving man a grossly big meal.

What is of great importance is that the process of investment of foreign funds in countries which can make profitable use of them should be moderate and continuous. If investment is very big and then is discontinued, the country concerned goes quickly from a boom to a slump. The United States, and to a lesser extent the United Kingdom, poured great sums abroad in the twenties; the United States particularly perhaps into South American countries, and then in 1929 the flow came to a sudden stop with disastrous consequences. That was, if I am not mistaken, the origin of the Bankers' Ramp. It would be unfortunate if it were followed in the fifties by the Governments' Ramp. The nature of the times, however, is likely to protect the Governments from such a misfortune.

One last word. When this country, through the City of London made loans more or less to all the world in the nineteenth and early twentieth centuries, none of those loans were (so far as I recollect) tied loans, *i.e.*, there were no conditions imposed that the money must be spent here.

If international lending in the future is to be a valuable aid to the restoration and maintenance of a sound international equilibrium, it is even more necessary now than it was then that this same principle should be observed.

BRAND

London.

BUFFER STOCKS AND INTERNATIONAL COMMODITY PROBLEMS

STOCKPILING by an international agency when raw commodities are cheap, for reselling when commodities become dear, has been recommended with impressive frequency as a device for damping the short-term price fluctuations that plague international markets. The President's Materials Policy Commission is merely the most recent in a distinguished list of semi-official sponsors.¹ Its predecessors have acted under such auspices as the International Labor Office, the League of Nations, the Food and Agriculture Organisation of the United Nations and the U.N. Secretary-General.² Among professional economists whose endorsement has loaned prestige to these particular recommendations will be found such names as Colin Clark, J. B. Condliffe, J. K. Galbraith, E. S. Mason, Hla Myint and W. W. Riefler. Keynes³ and Harrod⁴ lead off the catalogue of those whose published work has supported variants of the buffer-stock device, national or international.⁵ Considered criticism from a source extraordinarily familiar with the behavior of international commodities⁶ seems so far to have done little to weaken the enthusiasm of the advocates.

That nations should move most cautiously towards—or, like the latest Commonwealth Economic Conference, perhaps away from—implementing these proposals is entirely understandable once discussion draws closer to commodity specifics than has been

the general custom. Distressing gaps open up in our data on the cyclical behavior of raw-commodity stocks. This is true not alone on a global basis, where the gaps might be expected, but within the leading industrial nations as well. To quote Abramowitz: "Our collection of series representing raw materials held by manufacturers is . . . inadequate to be the basis for any really well-founded theory about their behavior. Certainly [our] hypothesis must rest as much upon its own inherent reasonableness as upon any evidence we can present."¹ The Bennett study, thus far the sole detailed analysis of the commodity environment in which an international buffer stock must operate, made considerable headway in specifying both the commodities which physically lend themselves to storage and the price targets that might reasonably be set. On the primary variable—world stocks—its analysis was thin: stock data assembled with considerable pains proved too incomplete or unreliable to warrant publishing.

While secular improvement may be expected in the data, major complications in commodity trade, thus far given little weight, appear seriously to limit the usefulness of the storage device itself. What may be more important still is that the world trading system, and especially the exporter partners, has been moving perceptibly away from the sort of environment in which internationally held buffer stocks might stand some chance of success. If the potential of this "new piece of machinery" is less than has been believed, underlying problems may well be brought into sharper focus and ingenuity diverted into more promising channels.

I

Patterns of world trade and economic characteristics of traded commodities, which should be widely known, introduce complexities enough to deflate the more extravagant expectations held for a storage agency. At best, we may merely have a set of problems to be anticipated and overcome, but the jolt to the very premises of an international operation may in fact be more serious. The following are typical complications:

1. International commodity trade is by no means evenly diffused among the various countries of the world. Rather, just as there are key currencies in international monetary transactions, there are key commodities and key countries in trade. The

¹ *Resources for Freedom*. A Report to the President by the President's Materials Policy Commission (Washington, 1952), Vol. I, *Foundations for Growth and Security*, pp. 83-90.

² International Labor Office, *Intergovernmental Commodity Control Agreements* (Montreal, 1943), pp. xxiii-xxxii; League of Nations, *Economic Stability in the Postwar World*, Report of the Delegation on Economic Depressions, Part II (Geneva, 1945), pp. 265-75; Food and Agriculture Organisation of the United Nations, *Proposals for a World Food Board* (Washington, 1946); *Report of the Preparatory Commission on World Food Proposals* (Washington, 1947), pp. 21-30; *FAO Report on World Commodity Problems* (Washington, 1949), pp. 12-22; and United Nations, *Measures for International Economic Stability* (New York, 1951), especially pp. 17-26.

³ "The Policy of Government Storage of Foodstuffs and Raw Materials," *ECONOMIC JOURNAL*, September 1938, Vol. XLVIII, 449-60.

⁴ *Towards a Dynamic Economics* (London, 1948), pp. 161-9.

⁵ The literature was reviewed briefly in M. K. Bennett *et al.*, *International Commodity Stockpiling as an Economic Stabilizer* (Stanford, 1949), pp. 178-88.

⁶ J. S. Davis, *International Commodity Agreements: Hope, Illusion, or Menace?* (New York, 1947), pp. 30-5.

¹ M. Abramovitz, *Inventories and Business Cycles* (New York, 1950), p. 187.

division between dollar commodities (wheat, cotton, tobacco, sugar, nickel, etc.) and sterling ones (wool, jute, rubber, tin, copper, etc.) is only a part of the story. The degree of concentration of world exports from or imports to individual countries is even more relevant. The high proportion of coffee trade that moves from Brazil and Colombia to the United States would make the role of an international agency, inserted between buyer and seller nations, extremely delicate. Where one country is largely responsible for available exports—as Pakistan for raw jute, Canada for nickel and the United States for sulphur—exporters would look with considerable disfavor upon an agency which, by accumulating stocks (some of them presumably to be stored in importer countries), weakens their bargaining power in current trading operations. These features are not characteristic of such agricultural commodities as wheat, cotton and sugar, but are quite typical for some of the industrial raw materials covered in the Report of the President's Materials Policy Commission.

2. Few argue that importers stand to benefit as much from stable prices as export-dependent economies would gain from stable markets. The question, which specific exporters gain from buffer operations in a particular commodity, must therefore be answered. If the crutch is for the weak, such commodities as wheat, cotton and tobacco, predominantly exported from the United States, would appear to be ruled out. There can be no strong argument for transferring the burden of their stockholding to an international agency. For one thing, excessive stock accumulation by the Commodity Credit Corporation would more quickly bring its own corrective, either through attempts at production control or by diversion of product to low-price use, *e.g.*, possibly wheat as feed. There may be better grounds for offering contra-cyclical support to such wheat exporters as Canada and Australia, but these, too, are not among the weakest primary-exporting countries. Petroleum, which is by contrast exported from nations much lower on the ladder of economic development, is ill-adapted to storage in quantity for reasons of sheer bulk.

3. "Secular changes" in supply or demand of particular commodities have long-run effects, but can take place with shocking rapidity. Within a few years in the late 1920s, introduction of high-yield cane varieties brought a sharp decline in Java's sugar-production costs. The serious displacement of an old, or the inauguration of a new, major internationally traded good, can be quite abrupt. Silk's unsuccessful fight with synthetic fibers for

the United States market was a short one; moreover, the price level at which wool, jute or rubber can hold their long-term position in competition with synthetics and substitutes may be sharply below the range expected only five years ago. While the major foodstuffs are less liable to these particular risks, industrial raw materials fed into modern technological processes are highly susceptible. Shifts between different producing regions may be equally spectacular and disturbing. Operation by a buffer-stock agency may not merely impede adjustment; there is also a serious risk that the agency will in the course of time find itself saddled with obsolescent commodities or obsolete grades. Where industrial change suddenly opens up new markets for commodities, as for rubber in the first two decades of this century, storage operations can avail little against the secular increase in demand and its price effects.

4. Many raw commodities originating in the tropics—including coffee, tea, cocoa, rubber and copra—are tree crops. The long gestation period separating planting from first commercial harvest precludes any quick expansion of productive capacity. New plantings, especially by native growers, are rarely officially recorded. Since increases in capacity are accordingly long concealed, and market conditions at the date when trees actually come into bearing must be anticipated a long time in advance, there is a serious danger that expansion will be excessive. Besides, variable costs are low, so that current output falls little in response to moderate price declines, while productive capacity is even less elastic downward than upward. The difficulty of rationally adjusting tree population under these circumstances is clear.¹

What is less obvious is that a buffer-stock operation might make responses of current output and tree plantings more perverse rather than less so. Transitory peaks in prices can hardly be taken as signals for expanding capacity; they do provide incentives for collecting all available produce from the current harvest. Transitory troughs do not lead to destruction of trees; they do bring some relaxation of harvesting efforts.² A more moderate price range could easily bring stability—even undue stability—

¹ This point is made also by R. S. Porter, "Buffer Stocks and Economic Stability," *Oxford Economic Papers*, January 1950, New Series, II, 108.

² The contrary hypothesis—that the supply curve will be backward sloping—is theoretically possible, though little reflected in evidence drawn from major traded commodities, *e.g.*, K. E. Knorr, *World Rubber and Its Regulation* (Stanford, 1945), pp. 59–67, and P. T. Bauer and B. S. Yamey, "Competition and Prices: A Study of Groundnut Buying in Nigeria," *Economica*, February 1952, New Series, Vol. XIX, 31–43.

in current output, yet provide so strong an incentive to increase capacity as to undermine the storage operation. In short, the economic problems of tree crops can be further complicated by a device which regulates only current market price.

5. Price stability for exports similarly goes only a short way towards correcting the trading difficulties of countries heavily dependent on export receipts from a few primary products. Cyclical stages of demand pressure are periods of real scarcity of goods relative to claims for goods. Peak prices for raw commodities may be chopped off. Yet primary-producing countries will experience essential scarcity of manufactured goods by delayed delivery dates, even at unchanged prices. Besides, commitments tend to be made with the expectation that relatively high price levels for primary exports will continue indefinitely. The normal lag between placing orders and receiving deliveries may accordingly lead, as it has spectacularly in the recent past, to arrival of manufactured goods in volume only after terms of trade have moved unfavorably, generating balance-of-payments difficulties along the way. Storage operations in raw commodities will not alleviate the felt shortage of manufactured imports, nor will they assure continuity of development programs geared to maximum levels of foreign-exchange receipts.

6. The Second World War and its aftermath leave a residue of commodity distortions which will not be corrected by setting up a buffer stock. The partition of India and Pakistan, no less than the war-time stimulus to substitutes for sacking, cast a shadow over the future of jute. Cuban sugar production, which filled the gap in the world's post-war supplies, can hardly persist at the peak level reached in 1952, and would have been faced with distress conditions much sooner had sales not been financed by American aid funds. United States wheat and oilseeds, which also expanded in response to transitory needs abroad, may be faced with comparable readjustment problems. Where the fear used to be that equilibrium prices would be politically too low to satisfy producer groups, it is entirely likely that equilibrium prices are now too *high* to permit a country like the United Kingdom to enjoy its accustomed consumption of some imported food-stuffs. How is United States synthetic rubber to be priced, in order that the natural-rubber economy of Malaya and Indonesia may not be put under too severe pressure? Commodity by commodity, in short, there are difficult solutions to be worked out. The buffer-stock device has the advantage that it appears to contribute something towards solving each of the problems

simultaneously; but in every case a real answer must be found quite independently of storage operations.

7. It is frequently stated that "prices of most raw materials tend to react sharply to small shifts in supply and demand."¹ There are senses in which this statement is meaningful; yet for industrial raw materials the most serious problems arise precisely because the swings in demand (for use and for private stocks) are wide, not narrow. Though data on year-to-year changes understate rather than exaggerate the swings, such information confirms this objection. Natural rubber (like tin) is particularly useful for demonstration purposes, since practically the entire world output moves into trade. It may not be surprising that net world exports of natural rubber, after declining slightly in 1949, rose by more than 20% in 1950, from 1,361,000 metric tons to 1,652,000.² But year-to-year fluctuations of this dimension were also experienced in a secondary pre-war cycle like 1936-38, when net world exports moved as follows (in thousand metric tons):³ 1935, 891.6; 1936, 879.6; 1937, 1150.3; and 1938, 900.1. Piecemeal data such as these merit study, if one is to have any advance understanding of the level of storage required to achieve the objective for specific commodities. At recent moderate prices (say 25 cents per pound) even 200,000 metric tons of rubber would represent a commodity investment of over \$110 million.

8. Although this discussion has avoided the issues associated with commodity-reserve currency, it can properly raise the alarm against misleading analogies between monetary and commodity operations. "Monetising" commodities⁴ would indeed assure for them, temporarily at least, a market that was as good as gold. But gold is peculiarly suited to monetary use, precisely because, due to its durability, the accumulated stock is many times larger than current output.⁵ In any case, the price at which the United

¹ *Report of the President's Materials Policy Commission*, Vol. I, p. 83.

² F.A.O., *Yearbook of Food and Agricultural Statistics 1951* (Rome, 1952), Vol. V, Part 2, pp. 153-4.

³ Calculated from International Institute of Agriculture, *International Yearbook of Agricultural Statistics 1940-41* (Rome, 1941), pp. 470-5.

⁴ E.g., B. Graham, *World Commodities and World Currency* (New York, 1944), Chap. IX.

⁵ One writer argues that a huge commodity stockpile, equivalent to as much as a five-year supply, is an effective defense against the political pressure of producers. R. J. Scanlan, "Individual vs. Group Commodity Reserves for Price Stabilization," *Journal of Farm Economics*, May 1951, Vol. XXXIII, p. 229. This is rather strong medicine, the effects of which upon the economic organism seem not to have been fully recognised, even where storage for so long a period is physically possible.

States Government is to-day prepared to buy gold is not to the taste of the mining industry. Sales and purchases by a buffer-stock agency would, like open-market sales and purchases of securities by a central bank, absorb and release expendable funds.¹ But the control exercised by national monetary authorities over the supply of money is of a different order from the influence exerted by a storage agency over commodity production. Similarly, the limits of authority open to an Exchange Equalisation Fund² are considerably wider than to a commodity stockpiling agency. The former can, with Treasury assistance, push down the exchange rate; a buffer-stock board that set its base price too low would quickly run out of its stocks and its powers.

II

A number of arguments suggest the conclusion that the present environment of foreign affairs and national economic policies is set strongly against the international-stockpiling technique.

1. The distinction between strategic stockpiling and commercial buffer-stocks is by no means as easy to draw as was believed possible as recently as 1949. One of the nice problems—not the primary one—in arriving at any international agreement on atomic weapons is the question of *where* bombs are to be stockpiled. Stores of cotton, wheat and sugar, along with the scarcer industrial raw materials and many other commodities, are, under appropriate conditions, clearly strategic goods. The question of their location is an important one, only in part to be decided by availability of warehouse facilities. Wheat stockpiled in Australia would be of little help to the United Kingdom in an emergency, while rubber stockpiled in the United States would certainly be requisitioned by the government in the event of a “hot” war. Had cotton stocks in the hands of the Commodity Credit Corporation early in 1950 been held instead by an international buffer-stock agency, the quantities available to American consumers after the Korean outbreak would have been considerably reduced and, indeed, international allocations could hardly have been avoided. The closer stocks lie to the Iron Curtain, or the longer the sea voyage necessary between present warehouse and ultimate destination, the more influence non-commercial considerations exert.

No buffer stock could conceivably have been accumulated since

¹ *Report of the President's Materials Policy Commission*, Vol. I, p. 187.

² L. St. Clare Grondona, *National Reserves for Safety and Stabilization* (London, 1939), pp. 30–1.

the Second World War sufficiently large to soak up the demand for inventories generated when the Korean war broke out and, still more, after the Chinese entered the conflict. The price inflation of 1950–51 was a product of the garrison state, and can hardly be considered in the same terms as the peace-time cycles of 1937–38 and 1948–50, although this distinction is confused both in the Report of the President's Materials Policy Commission and in *Measures for International Economic Stability*. By the same token, while the wide price instability of commodities like jute, rubber or tin *may* jeopardise their long-term markets, strategic considerations are probably more important. The scientific effort that goes into finding ways of economising on the use of tin and natural rubber gets much of its stimulus from the military disadvantage of shipping commodities long distances by sea.

2. Protectionist policies in the 1930s clearly kept domestic prices far above international prices in depression. Importers who were prepared to purchase, *e.g.*, the United Kingdom, could buy their products at bargain rates, but the general attempt to keep domestic economies stable made for greater instability in international markets. The margin between international and domestic prices could, however, be expected to narrow with a price rise, so that they ultimately converged and moved up together.

New dimensions of policy have become important in the post-war world. The increased attention paid by governments to the immediate interest not alone of their producers but also of their consumers has led to international prices that are frequently above those ruling in exporting countries, and the gap has widened as the price level soared. The United States now promptly imposes export controls as part of its domestic stabilisation program. That decision for cotton explains why export prices in other countries, such as Egypt and Brazil, could early in 1951 reach levels as much as double the average spot price in United States markets.¹ The case of sugar is broadly parallel. While the United States is a net importer of raw sugar, the intimate trade relationship with Cuba made it possible for the United States Department of Agriculture to buy up her entire crop carry-over late in 1950. United States import quotas were raised, and export restrictions imposed. Sugar for other destinations became so scarce relative to demand that by June 1951 other countries

¹ “Prices of Major World Trade Commodities Expressed in U.S. Dollars,” *International Financial Statistics* (International Monetary Fund, Washington), June 1951, xxxiii.

were in the unusual position of paying a 30% premium for Cuban sugar, and a dollar commodity at that, above the New York price.¹

Restraining price in the interest of the domestic consumer has been, since 1945, by no means confined to the United States, to the largest trading nations or even to war months.² Governments in many traditionally exporting countries are prepared to forego immediate foreign markets in favor of the domestic consumer, individual or industrial. This is true of vegetable oilseeds and food grains, as well as of cotton and sugar. At a quite early stage of industrialisation or national prosperity, domestic processing of clothing, of soap and edible vegetable fats and of sugar-containing foodstuffs is introduced. Governments give particularly tender attention to the welfare of these enterprises, while production of the relevant raw commodities is so little concentrated geographically that at least some domestic output is frequently available. If commodity prices turn sharply upward, external demand is reinforced by local demand for commercial inventory purposes. Governments respond by placing embargoes against export of the raw commodity, and in some cases by entering the market themselves to accumulate public stockpiles. The response to higher world prices is accordingly doubly perverse: not only is the desire to hold stocks inflamed on a world-wide basis, but also the supplies available to foreign trade begin to dry up at the source.

For the oilseeds, the consumer theme has been important in India's policy throughout the post-war period. Almost 1 million tons have ceased to move abroad, and the minor outflow of vegetable oils in no way compensates for the loss of linseed and peanuts. For other countries as well, it is not difficult to find such statements as the following: ³

"The food-grain surplus of Pakistan, if it [at] all exists, is of negligible proportions in relation to the total needs of the country. Further the 'surplus' is only at a relatively high price and could be increased by maintaining a higher price and turned into a deficit even in a 'normal' year by reducing price to a level to ensure adequate consumption for the mass of the people."

¹ U.S. Dept. Agr., Prod. and Mktg. Admin., Sugar Branch, *Sugar Reports*, No. 15, April 19, 1952, p. 6.

² In this connection, see also M. Ezekial, "Public Price Policies and Trends in International Trade," *Journal of Farm Economics*, December 1952, Vol. XXXIV, especially pp. 654-6.

³ *Pakistan Economics and Commerce* (Lahore), July 1952, Vol. I, p. 363.

Clearly one of the main shifts in policy attitudes that is associated with the attainment of national independence is the restricted role assigned to external markets, for exports as well as for imports. That long-term disadvantages can exceed short-term gains may, in a good many cases, be true; but the existence of new attitudes seems an incontrovertible economic fact. The policies may be irrational, shortsighted, misguided or unsuccessful, but they do introduce a new variable in international trade, and one that tends to increase price instability in international markets.

3. Price stability for internationally traded goods is in any case not the universally accepted goal it has commonly been presumed to be. Countries exporting tin and sugar quickly showed a conspicuous lack of interest in international commodity agreements after June 1950, although negotiations had been approaching a final stage. Export taxes, on the other hand, became increasingly important in this period. In some cases the higher taxes represented a legitimate attempt to prevent heavy temporary demand from having its full impact on the domestic economy, lest it raise cost structures and thereby create difficulties for the future. An equally honorable objective was that of siphoning off into the public coffers a share of purely wind-fall gains. But in inflationary booms demand as well as supply tends to be highly inelastic, and there is every likelihood that the incidence of the export tax will be, not always unintentionally, mainly on the importer. This certainly appears to have been the case for Scandinavian forest products, especially wood-pulp, leading to much ill-feeling among European trading partners, and ultimately, retaliation.¹

4. Nations obviously participate increasingly not only in foreign-exchange receipts from exports but in the trading process as well. Governmental purchasing of tin and rubber proved to be only a passing episode in the United States, though bulk purchases by the Ministry of Food have had greater staying power.² State selling agencies are important for cocoa, wheat, rice, copra; in the extreme case they handle the entire export line. Nationalisation of Bolivian tin and Iranian petroleum, and strong likelihood of similar action elsewhere, brings governments

¹ "The Pulp War," *Economist* (London), April 26, 1952, Vol. CLXIII, p. 234.

² FAO, Committee on Commodity Problems, *The Long-Term Contract* (CCP 52/57, 1952, mimeographed) and United Nations, Economic Commission for Europe, "Note on British Long-Term Food Purchase Contracts," *Economic Bulletin for Europe*, First Quarter 1951, pp. 41-55. There have of course been some recent withdrawals.

squarely into the arena, now hardly a market-place, where prices are set. A hidden premise of the buffer-stock device would seem to be that a base price *can* be set on economic grounds, and held within economically specified limits. Instead, the agency would quickly find itself involved in international diplomacy. Its dealings would, to a considerable degree, be with governments, not with individual firms.

5. Too little attention has as yet been paid to the fact that the shift in world commercial leadership from the United Kingdom to the United States brings its parallel in the altered relative significance of various internationally traded goods. The staple foodstuffs that Britain imports heavily—grain and flour, meat and dairy produce, vegetable oils and oilseeds—do not bulk large in America's imports, and even cotton enters the American picture more as an export than as an import. Coffee and sugar are important, but they are collectively overshadowed by a large number of industrial raw materials associated with a mechanised economy and a motorised, electricity-dependent public. These are mainly items of which sales, manufacture and offshore purchases respond quickly and sharply to every change in business conditions. There is a modern trade paradox in all this. In the nineteenth century the high import component in Britain's basic diet assured the sustenance also of her trading partners. The twentieth-century trading world is oriented not to the American consumer's minimum needs but to his greater prosperity. The phenomenon is based as much upon modern technology and the role of consumer durables as it is upon any institutional peculiarities of the American economy.

III

In so unreceptive an environment the prospects for an international buffer-stock scheme are poor. The search for alternative if less-spectacular methods of overcoming specific commodity problems needs certainly to be pressed. Fortunately, the range of choice may be wider than is generally realised. Emergency famine relief, for example, can be met with no provisions for commodity stockpiling. A Working Party has recently reported to the F.A.O. that funds, together with a stand-by arrangement with commodity shippers, are by themselves sufficient for the purpose.¹ Long-term business contracts between United States publishers and Canadian mills contribute to the stability of the

¹ FAO, Committee on Commodity Problems, "Report of a Working Party on an Emergency Famine Reserve," CCP 52/55 (Rome, 1952, mimeo.).

newsprint trade.¹ If major recessions are to be avoided by public measures in advanced industrial countries, then it is not unthinkable that monetary and fiscal policies tailored to the explicit needs of primary-producing countries² have definite advantages over action by an international agency. Australia set aside part of grower receipts from inflated wool prices in 1951 as prepayments against future income taxes,³ while New Zealand operated a comparable forced-saving scheme. One does not expect such measures to be highly popular with producers, but at least the controversy remains a domestic affair.

Other commodity problems are appropriately met only by negotiations among governments and the exercise of a high degree of diplomacy. In periods of extraordinary demand, international allocations—whether by an International Materials Conference⁴ or an International Emergency Food Council—effectively release peak pressures even when the situation is beyond the help of a buffer stock. Here is a reminder that commodity inflation and commodity deflation are not entirely symmetrical phases of a cycle and that a single device that seeks to offset both may not be a sufficiently precise instrument.

After the rationalisations are cleared away and the alternatives canvassed, there nevertheless remain situations which call for some novel approach on the storage front. For commodities that must undertake a long ocean voyage—like tin, rubber or wool—the time lag in shipment complicates the adjustment of current arrivals to current rates of industrial operation. One reason for sharp price falls is that stocks in manufacturers' hands may pile up for half a year or more after production has fallen off; one reason for sharp price rises is that, even if raw-commodity production can be stepped up quickly (which is certainly not true of wool), increasing the volume of arrivals in major importing countries can introduce a time lag of as much as five to six months.⁵

¹ "These contracts frequently stipulate that the publisher will take the entire output of the manufacturer . . ." J. A. Guthrie, *The Economics of Pulp and Paper* (Pullman, 1950), p. 90.

² Interest in this theme is reflected in such titles as: H. C. Wallich, *Monetary Problems of an Export Economy* [Cuba] (Cambridge, 1950); A. R. Prest, *War Economics of Primary Producing Countries* (Cambridge, England, 1948); and C. G. F. Simkin, *The Instability of a Dependent Economy* [New Zealand] (London, 1951).

³ FAO, *The State of Food and Agriculture, Review and Outlook 1951* (Rome, 1952), p. 40.

⁴ See, e.g., International Materials Conference, *Report on Operations 1951-1952* (Washington, 1952).

⁵ Abramovitz, *op. cit.*, pp. 182-4 and 207-17.

While manufacturer- or trader-held stocks act as something of a private buffer after the peak, they may be pretty much worked off before the revival in activity occurs. Under such circumstances, some means of increasing the volume of stocks actually located in individual importing countries, before prices climb but not immediately after prices decline, has much to be said for it. In some instances, moreover, the financial commitment of holders might be reduced by arrangements for purchases at a price that is not intended to support the market but only to cover out-of-pocket expenses.¹ It should also be recalled that the early Keynesian proposals for national stockpiling drew a clear distinction between subsidisation of storage in the importing country and governmental ownership of the stored commodities. Finally, where, as in the case of Cuba's 1953 sugar crop, definite action is taken to cut output back commensurate with reduced market prospects, at least the financial burden of holding old-year stocks need not all be borne by the exporter. The moral argument for some external form of credit is particularly strong, because under such conditions of easy supply a considerable portion of customary working stocks are typically pushed back into exporter hands.

Importer stockpiling, two-price systems, new sources of credit all have failings of their own. If they widen the range of discussion, they also lower the level of generality. More is to be expected from painstaking processes of isolating the specific economic difficulties we seek to overcome, and of differentiating according to commodity characteristics, than from grand proposals, however well intentioned and emotionally appealing, that lack a sufficient tie with the facts of trade.

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¹ That suggestion is made in League of Nations, *Report of the Committee for the Study of the Problem of Raw Materials* (Geneva, 1937), p. 59.

THE ESTIMATION OF EQUIVALENT-ADULT SCALES FROM FAMILY BUDGETS ¹

1. INTRODUCTION

A KNOWLEDGE of the effects of household composition on the household's pattern of expenditure is important for many aspects of social policy as well as in demand analysis. The fixing of taxes (or subsidies) that may affect population policy, such as income-tax relief on account of children and family allowances, requires some theory as to how the standard of living of households is affected by additional dependants. Such a theory requires quantitative rather than qualitative knowledge. Knowledge of the same kind is required in demand analysis, whether based on time-series or on family budgets, in which it is generally necessary to compare aggregates of households containing persons of different age-sex groups. Equivalent-adult coefficients are used in this type of work which are, however, often based on physiological rather than economic considerations. These physiological scales have for long been used in assessing the nutritional standards of households, but their use is inappropriate in economic contexts without further justification.

The object of this paper is to present a method of determining scales of equivalent-adults based on an explicit consumption function. This method is then applied to a sample of 2,200 family budgets collected in the United Kingdom in 1937-38.²

¹ An earlier version of this paper was read to the Fourteenth European meeting of the Econometric Society held in Cambridge in August 1952. In the preparation of that and the present version I have had the benefit of the advice and help of a number of friends. In particular, my thanks are due to H. S. Houthakker for suggesting the problem of this paper to me; to Richard Stone, Director of the Department of Applied Economics, and to J. A. C. Brown, also of the Department, for helpful discussions on the method; to J. E. Fothergill, without whose constructive help with Hollerith problems this paper would not have been completed; to Dr. M. V. Wilkes, Director of the University Mathematical Laboratory, for permission to use the EDSAC; and to Mrs. A. V. Church and Mrs. A. Pink for the considerable work of preparing the data and carrying out the many computations.

² This is the working-class inquiry undertaken by the Ministry of Labour, and at present under further analysis at the Department of Applied Economics in Cambridge. It is hoped to publish the full details of this analysis in a forthcoming monograph to be issued by the Department. Details of the organisation of the inquiry and preliminary results may be found in "Weekly Expenditure of Working-class Households in the United Kingdom in 1937-38," *Ministry of Labour Gazette*, December 1940, January 1941 and February 1941.

The two main methods adopted by past writers in measuring the "cost of children" or coefficients of equivalent-adults have generally yielded results which did not have statistical measures of significance or were not directly applicable to economic problems on account of the omission of the income variable in the analysis. In Section 2 a general account is given of the effects of the size and composition of the household on its pattern of expenditure, and a theoretical framework is established within which the earlier methods are briefly reviewed.¹

The method adopted in this paper is outlined in Section 3. It has many formal analogies with the method of Sydenstricker and King given in a fundamental paper written in 1921 which dealt with many of the problems of principle and practice encountered in this work, but which was virtually ignored in the subsequent literature.² To the writer's regret this contribution came to his notice only after the details of the present method had been worked out. Recently, Professor Friedman (1952) has also published a paper commending an adaptation of this approach, but without presenting any significant numerical results.

On account of the difficulty of separating the effects due to the different persons in the household, the computations involved in these analyses are usually heavy. In the present analysis the non-linear formulation adopted is treated by an iterative type solution which would have been prohibitive but for the possibility of access to the EDSAC, the electronic computer of the University Mathematical Laboratory in Cambridge. This and other features of the method are outlined in Section 4.

The results of the calculations that have been carried out are given in Section 5, and refer to six food groups as well as to all food. Section 6 presents the conclusions to be drawn.

2. EFFECTS OF HOUSEHOLD SIZE AND COMPOSITION

The subject of this paper may be put more definitively as the comparison of the effects on household-consumption patterns resulting from the addition to the household of a person of a particular age-sex group (for example, a male adolescent) with those resulting from the addition of a standard person. The standard person usually adopted as a basis for comparison is the adult male, and other person-types are expressed as fractions of the adult male, thus providing an equivalence coefficient.

¹ The reader requiring a survey of equivalent-adult scales used in earlier investigations should consult the excellent paper by Woodbury (1944).

² See the paper by Ogburn (1931) for an analysis of the reasons for this.

In principle, two aspects of the problem may be distinguished. First, there is the question of how an increase merely in the number of persons in the household would affect consumption, all persons being of the same type. Secondly, there is the comparison of the effects resulting from the addition of persons of different age-sex groups. In the practical analysis of empirical material, such as family budgets, it is difficult to separate the two questions, since if attention is confined to households containing the same type of person, as required by the first question, the number of available observations is effectively reduced so that no significant answer is obtained. The answer given to the first question, though generally implicit, will plainly affect the estimates obtained as answers to the second aspect of the problem.

As a result of the extensive researches of Henderson,¹ in connection with the Royal Commission on Population, and of Nicholson (1949), there is now a considerable amount of evidence on the effects of an additional person on household consumption. The evidence is based on special analyses of the British inquiry into household expenditure used also in the present paper. It shows that the effect on consumption of the addition of an extra person to the household with an unchanged income is complicated and depends, *inter alia*, on whether household consumption is considered or consumption per head, and whether the good is a necessity or a luxury. The principal result that emerges is that the household's demand for necessities (for example, standard foodstuffs) increases as household size increases, though consumption per person decreases. For luxuries there is a decrease in household consumption per person.

These results may be rationalised by supposing that the Engel curve for the household is of the form

$$x/n = f(M/n) \quad (1)$$

where x is household expenditure on the commodity, n is household size and M is household income; that is, the function relating household expenditure on the commodity to income and household size is homogeneous of the first degree. In this case the effects of an increase in household size may be conveniently set out as in Table I distinguishing inferior goods (negative income elasticity),

¹ The work of Henderson is somewhat broadcast in the journals (see table of references at end); the calculations that are of particular interest here may be found in the Memorandum submitted by Hajnal and Henderson to the Royal Commission on Population on "The economic position of the family," especially Part I D, "The impact of children on family expenditure," pp. 9-16; and Henderson (1949), pp. 140-4, "The impact of a child."

necessaries (income elasticity less than unity) and luxuries (income elasticity greater than unity).

TABLE I
Effect of an Increase in Household Size on Consumption

(Increase : +. Decrease : -).

	Inferior goods.	Necessaries.	Luxuries.
Household consumption	+	+	-
Consumption per person	+	-	-

The term in brackets on the right-hand side of (1) may be regarded as a measure of the standard of living of the household which determines the dependent variable on the left-hand side, that is, the expenditure per person on the particular commodity considered.

If the household is composed of t different types of person equation (1) must be modified to the form

$$x / \sum_1^t \beta_i n_i = f(M / \sum_1^t \alpha_i n_i) \quad (2)$$

where n_i is the number of persons of type i and α and β are equivalent-adult scales which, in general, differ. The β -scale is termed the specific scale and, clearly, varies between commodities. For example, for women's clothing all the equivalence coefficients will be zero except for that of the adult female (and possibly the adolescent female), but for foodstuffs all the coefficients will be positive. The α -scale, on the other hand, should be the same for all commodities, since the term on the right-hand side of the equation is considered as a measure of the standard of living of the household. It will thus be an average of the specific scales.¹ It is termed the all-items scale, or income scale (following Houthakker).

The change in the consumption of a particular commodity as a result of the addition to the household of a person of type k will thus depend on the coefficients α_k , β_k (for the particular commodity), and the income elasticity of the commodity. More precisely, the magnitude of the change in its consumption will depend on the difference (approximately) between β_i and the product of α_i and the elasticity; the effect of an increase in

¹ The weights are approximately proportional to the expenditures on the commodities; the solution given by Houthakker (1952, p. 10) is equivalent to this for Engel curves that are straight lines through the origin. The determination of the α -scale as a weighted average of the specific scales was proposed by Kirkpatrick in 1921-22, and has been used in the U.S. Wage Earner Study of 1934-36; see Woodbury (1944), p. 461, for references.

household size can thus be regarded as composed of a specific effect, via the β , and an income effect via the α .¹

In positing the equation (1) it is assumed that a doubling of income and of household size will leave consumption per person unaffected (supposing only one type of person is in the household), that is, there are constant returns to the scale in the terminology of the theory of production. While this assumption may be substantially correct and may explain the broad phenomena of consumption patterns it is apparent that it will not be exactly true in general.² The effect of economies (or diseconomies) of scale will then also be analysable into : (a) a specific effect due to economies in the consumption of the particular item, and (b) an income effect due to economies in the consumption of all other goods which will lead to the household's distributing its purchases according to a standard of life higher than that indicated by the measure of household income per person.³

With this theoretical framework in mind it is now possible to review the methods adopted in earlier analyses. These may be examined under three heads.

(i) The recent investigations to determine the cost of children may be regarded as attempts to estimate children's coefficients on the *income scale*. The methods employed by Nicholson and Henderson in their investigations (based on a suggestion made by Rothbarth in 1943) involve the choice of a standard commodity the consumption of which depends only on the standard of living of the household and not otherwise on the number of children. In the terminology of this section the children's coefficient in the specific (β) scale for the commodity is required to be zero. By finding the Engel curve for the standard commodity separately for households without children and households with children, it is possible to derive by difference the amount of income it would be necessary to give to the household with children in order to raise its consumption of the standard commodity to that of the household without children. By assumption this is the transfer of income necessary to equalise the standards of living and provides an estimate of the children's coefficient on the income scale.

¹ Differentiating (2) with respect to n_k gives

$$\frac{1}{x} \frac{dx}{dn_k} = \left(\beta_k - \alpha_k \eta \frac{\sum \beta_i n_i}{\sum \alpha_i n_i} \right) / \sum \beta_i n_i$$

where η is the income elasticity for the commodity. The result in the text follows if $\sum \beta_i n_i / \sum \alpha_i n_i$ is approximately equal to unity.

² A practical discussion of this point may be found in Stone (1951), pp. 10-11.

³ A similar argument may be developed for the general case in which household size is measured on α - and β -scales.

Four such standard "commodities" have been used in past analyses: (a) household savings; (b) excess income, that is, the income left after the purchase of the household's necessities¹; (c) expenditure on adult clothing²; (d) expenditure on drink and tobacco.²

Analyses using these methods have not, however, led to any firm results.³ Some reasons for this may be: (a) the basic unreliability of the information on the consumption of the standard commodities. It is well known that returns for drink and tobacco are heavily understated, and the savings figure is regarded as so unreliable that in many surveys it is not even asked for. (b) The fact that a very narrow range of expenditure is used for determining the total cost of a person. (c) The assumption that the children's coefficients on the β -scale are zero may not hold true sufficiently precisely. (d) The method is based on finding the difference between two curves whose parameters are estimates subject to error. (e) Since the two curves are determined from only a selection of the budgets, the available information is, in general, used in an inefficient manner.⁴

(ii) The second type of method considered here may best be regarded as an attempt to derive *specific scales*. It is based on the simple proposition that consumption depends on household composition. The effect of income is entirely neglected, and the equivalence scales are estimated by simply taking the regression of consumption on the different types of persons.

In accordance with the argument of this section, this method can be expected to give valid results only if the income elasticity of the commodity is zero. If the good is a luxury the method is obviously inapplicable, since an increase in household size is accompanied by a lower expenditure on the commodity: in the case of standard foodstuffs, which is the usual field of application of the method, it is to be expected that the effects shown for children (and other "additional" members of the household) will be underestimated by an amount which varies directly with the income elasticity of demand for the commodity.

The importance of the method from the point of view of this paper is that its applications have shown the possibility of

¹ Used by Rothbarth (1943).

² Used by Nicholson (1949), and Henderson (1950).

³ See, for example Henderson (1950) p. 281, who, in surveying a number of alternative calculations, says, "those given provide a sufficient variety to show that no great reliance can be placed on any results obtained from the data available for analysis."

⁴ See Kemsley (1952), p. 198.

obtaining coefficients within reasonable margins of error which may be assessed statistically, as in the recent paper by Kemsley (1952). In that paper he considers expenditure on all food and, separately, expenditure on bread as varying with household composition. Since the income elasticity for bread is close to zero, this method should yield good estimates for its specific scale; but for all food, with an elasticity of about a half, it is to be expected that this method will yield coefficients that are on the low side.¹

(iii) Finally, there are the various scales of nutritional requirements based on some standard of optimum health. In their simple form they generally ignore the possibility of substitution between the various nutritional elements, and cannot be regarded as reflecting the average pattern of consumption. While they may be approximately equal to specific scales, they should not be used in economic contexts without explicit justification.

3. EQUIVALENT-ADULT SCALES BASED ON BEHAVIOUR EQUATIONS

It will be apparent from the last section that the possibility of estimating economically meaningful scales of equivalent adults depends upon the successful separation of specific and income effects. Conceptually, this may be most conveniently considered in terms of an economic behaviour equation such as (2). If this equation is written with an additive error term, thus,

$$x/\sum_1^i \beta_i n_i = f(M/\sum_1^i \alpha_i n_i) + \epsilon \quad (3)$$

it should be possible to estimate the coefficients α_i and β_i (for the particular commodity) from family budget observations using regression methods in the same way as income elasticities are derived; that is, the parameters are estimated so as to minimise the sum of squares of the residuals.

Whatever form of functional relationship is assumed for f , it is apparent that there will be considerable difficulties if both the α - and the β -scales have to be estimated simultaneously from the same data. In order to avoid this, a method has been suggested in an earlier paper² which, while it has not in practice been adopted here (for reasons given at the end of Appendix A), is

¹ This method has also been used by Quenouille (1950): the methods of Clements (1940) and Williams and Hanson (1941) are similar in some ways, though not based on least squares.

² Houthakker and Prais (1952), pp. 74-6.

worth explaining in order to clarify the principles underlying the present approach. This simplification is based on the use of another type of information yielded by family budget data, namely that on the quality of the commodities bought by the household. It is clear that for a number of reasons individual households do not pay the same average prices for commodities that are physically approximately similar: in particular, households with a higher standard of living will generally pay more per physical unit of the commodity on account of their preference for better qualities. Taking the average price paid as an indicator of quality, it was shown that there is a regular relationship of a semi-logarithmic form between quality and income per equivalent adult.

If it can be assumed that the specific equivalent-adult scale for expenditure on a commodity is the same as that for the quantity of the commodity, it follows that there will be no specific effects in the determinants of the average price paid, regarded as the ratio of expenditure to quantity. Accordingly, the relationship between the average price paid for a commodity and the standard of living of the household is of the form

$$p = a + b \log (M / \sum_1^i \alpha_i n_i) \quad . \quad . \quad . \quad (4)$$

where p is the average price paid per unit of the commodity.

The use of information on the average price paid for a commodity, or a group of commodities, at various income levels could thus provide a method of estimating the income scale. The values so derived could then be inserted into (3) and the information on expenditures used to provide estimates of the specific scales.

The conceptual features of the method proposed here may be summarised as follows:

(a) The scales are to reflect the actual behaviour of households of different composition and not their idealised behaviour as in nutritional work.

(b) A different scale is distinguished for each commodity.

(c) The income scale which reflects the total effects of household composition on consumption is a weighted average of the specific scales. With the assumption made above it can, however, in principle be estimated independently from information on average prices.

(d) The net effect on consumption of the addition of a person of a particular type to the household can be predicted only if both the specific and the income scales are known.

4. THE METHOD ADOPTED

This section outlines the principal features of the method adopted in the calculations presented below. In order not to burden the text with the laborious practical details of the work, these have been collected into a number of Appendices to this paper, to which the interested reader may refer as necessary.

The estimates given in this paper are for the specific scales for six food groups and for all food. These groups are: (1) dairy produce; (2) vegetables; (3) fruit; (4) farinaceous foods; (5) fish; and (6) meat. Their precise composition is given in Appendix B. The scales were estimated on the basis of the expenditure equation (3), assuming that the standard of living of the household is to be measured by income per person, that is, that all the coefficients of the income scale are known to be equal to unity.

This assumption brings the approach outlined in the previous section within the bounds of practicality. It is, of course, not ultimately crucial, since once all the specific scales have been derived they can be averaged to provide a better estimate for the income scale and the calculations then repeated. But at this stage some such assumption has to be made, and the assumption of equal coefficients seemed to be the simplest.

Writing m for $M/\Sigma n_i$, the basic equation describing expenditure simplifies to

$$x/\Sigma \beta_i n_i = f(m) \quad . \quad . \quad . \quad (5)$$

which can be transformed so as to linearise the β 's, thus

$$x/f(m) = \Sigma \beta_i n_i \quad . \quad . \quad . \quad (6)$$

Once $f(m)$ is known the specific scales can be determined by the ordinary least-squares procedure.

Two alternative assumptions were made about the form of the function f . The first was that it was semi-logarithmic

$$f(m) = a + b \log m \quad . \quad . \quad . \quad (7)$$

in accordance with some earlier results on the shape of the Engel curve¹; and the second, that it was of the constant elasticity form

$$f(m) = A m^\eta \quad . \quad . \quad . \quad (8)$$

where A and η are constants, the latter being the income elasticity for the commodity. Both curves require estimates of two parameters, one of which is a "scale" parameter and the other a "slope" parameter.

¹ See Prais (1953).

On combining (8) with (6) it is apparent that since only the ratios of the β 's are required and not their absolute values, there is no loss of information in leaving the "scale" parameter A on the right-hand side. The basic equation then becomes

$$xm^{-\eta} = A \sum \beta_i n_i \quad (9)$$

which is non-linear in only one parameter, η , but linear in the remaining t parameters.

A similar procedure is possible for the semi-logarithmic assumption which leads to the equation

$$x/(c + \log m) = b \sum \beta_i n_i \quad (10)$$

where c has been written for a/b .

The method adopted for estimating the β 's can now be simply stated: the procedure is to compute the correlation coefficient between the composite variable on the left-hand side of the equation (9) and the determining variables n_i on the right-hand side. The correlation coefficient is to be calculated for different values of the parameter η and that value chosen which maximises the correlation coefficient. The β 's corresponding to the maximising value of η are then calculated. The same applies to (10), *mutatis mutandis*.

The above is a brief account of the comparatively lengthy procedure that has had to be adopted in order to obtain estimates of the β 's. The difficulties arise from the basic non-linearity of the equation treated, and, as always in such cases, it is necessary to devise some *ad hoc* procedure which generally is less satisfactory and less elegant than the classical procedures for the linear case. While the above brief account has attempted to present the principles at the basis of the procedure there is a further approximation involved in the calculations, an account of which is given in Appendix A.

One further point requires explicit mention here. It will have been noted that instead of minimising the sums of squares of the residuals of (9), or (10), the criterion of maximising the correlation coefficient has been adopted. In the linear case the two criteria are identical, but here since the variance of the left-hand side depends on the value of a parameter, it would be wrong to consider simply the sum of squares of the residuals. The use of the correlation coefficient provides an adjustment for the changing variance of the left-hand side, since it, in effect, divides the residual variance by the original variance.

The whole procedure was programmed for the Cambridge electronic computer, the EDSAC, so that the machine itself

iterated for the maximum value of the correlation coefficient. Once all the data had been fed into the machine together with an initial value of the parameter c , or η , a first estimate of the β 's was calculated and the correlation coefficient found. The value of the parameter was then increased by a fixed interval and the calculation repeated so long as this led to an increase in the correlation coefficient. If the coefficient decreased the interval of iteration was automatically reduced, so that near the maximum value the function could be mapped out to any desired degree of detail.¹

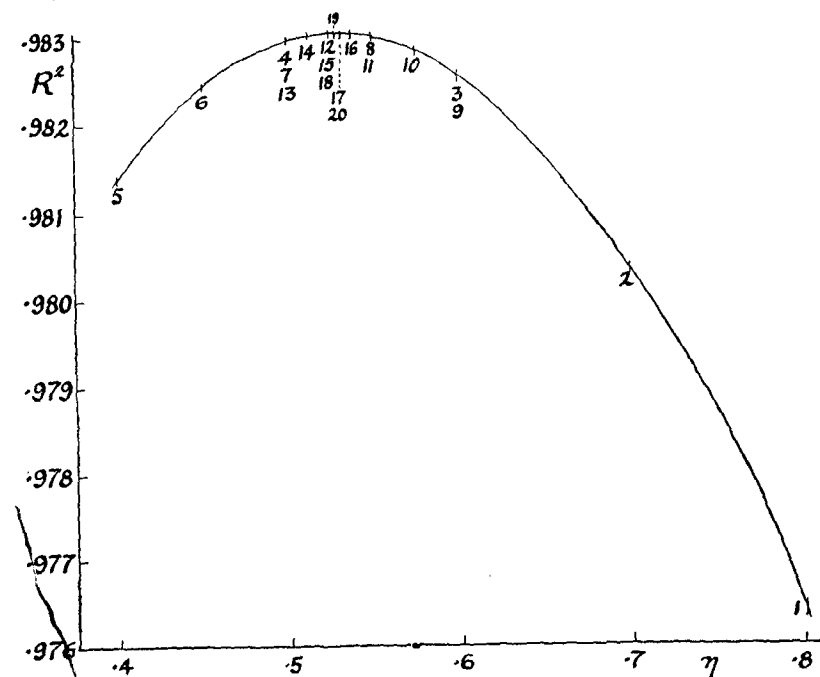


Diagram Illustrating the Convergence of the Iterative Procedure

The process of iteration may be best understood with the help of an actual calculation as in the diagram. This refers to the calculation for all food on the constant elasticity formulation (9). The value of the elasticity is measured along the horizontal axis, and the corresponding value of the square of the correlation coefficient along the vertical axis. The points are numbered in the order in which they were calculated by the machine and, on account of the simple method of choosing the next value of the parameter, some of the points near the maximum occur more than

¹ For an account of electronic computation in the context of econometrics, see Brown, Houthakker and Prais (1953).

once. It will be seen that after the seventeenth iteration η approaches very close to the value 0.53.

5. THE RESULTS OF THE CALCULATIONS

The analysis was applied to the data available from the British working-class inquiry into household expenditures of 1937-38. In this inquiry information was collected on both expenditures and, where possible, quantities from households who kept account of their purchases for four weeks spread over a period of a year. We were able to use the returns for some 2,200 households.

Eight types of person were distinguished in our analysis: (1) adult male; (2) adult female; (3) adolescent male (aged 14-17); (4) adolescent female; (5) child aged 10-13; (6) aged 5-9; (7) aged 1-4; and (8) baby under 1 year. There is no reason why further types of persons should not be distinguished, and there is, indeed, much to be said for treating the husband and wife of the household differently from additional adults. In view of the novelty of the method, it was thought, however, that the above classification would be adequate at this stage.

The estimates obtained according to the semi-logarithmic formulation (10) and the constant elasticity formulation (9) are given respectively in Tables II and III. Each column gives estimates for the eight types of person, with the adult male coefficient set equal to unity, together with the income elasticity for the commodity,¹ the value of the square of the correlation coefficient and, in row 11, a figure for judging the reliability of the estimates, the use of which will be explained below (pp. 804-5).

Before commenting on the individual results it is as well to point out a principle which should be kept in mind in interpreting them. The present analysis separates out the total effect on a household's consumption resulting from the addition of an extra person, but this may not always be due solely to the consumption of that person himself. For example, the addition of a child to the household will lead to an increase in expenditure on children's clothing, but it may also lead to an increased expenditure on mothers' aprons and the like. This method attributes such increases in ancillary expenditures by other members of the household to the particular member added.

Whether this is a desirable property of our estimates or not depends on the purposes for which they are required. For

¹ In the case of the semi-logarithmic formulation the elasticity declines with income; the value given corresponds to the average income.

nutritional studies which are based on the consumption of individual members of the household, this is clearly not a desirable feature, though where the magnitude of such ancillary expenditures may be expected to be small it will not affect the successful

TABLE II
Specific Scales for Foodstuffs on the Semi-logarithmic Formulation

	Dairy.	Vegetables.	Fruit.	Farinaceous.	Fish.	Meat.	All food.
1. Adult male . . .	1	1	1	1	1	1	1
2. Adult female . . .	0.97	0.91	1.22	0.85	0.91	0.70	0.88
3. Male 14-17 . . .	0.87	1.03	0.65	1.01	0.68	0.55	0.81
4. Female 14-17 . . .	0.71	0.72	0.68	0.73	0.59	0.48	0.65
5. 10-13 . . .	0.75	0.87	0.66	0.89	0.84	0.54	0.71
6. 5-9 . . .	0.58	0.78	0.65	0.65	0.41	0.35	0.57
7. 1-4 . . .	0.63	0.75	0.59	0.55	0.43	0.30	0.52
8. <1 . . .	0.83	0.36	-0.36	0.39	0	0.09	0.35
9. Elasticity . . .	0.40	0.48	0.68	0.27	0.53	0.47	0.46
10. R^2 . . .	0.947	0.869	0.766	0.929	0.704	0.932	0.984
11. Standard Error . . .	0.05	0.08	0.11	0.05	0.12	0.04	0.02

TABLE III
Specific Scales for Foodstuffs on the Constant Elasticity Formulation

	Dairy.	Vegetables.	Fruit.	Farinaceous.	Fish.	Meat.	All food.
1. Adult male . . .	1	1	1	1	1	1	1
2. Adult female . . .	0.96	0.89	1.18	0.84	0.89	0.68	0.86
3. Male 14-17 . . .	0.85	1.05	0.70	1.01	0.71	0.54	0.82
4. Female 14-17 . . .	0.69	0.73	0.70	0.73	0.62	0.47	0.65
5. 10-13 . . .	0.69	0.85	0.59	0.88	0.83	0.48	0.69
6. 5-9 . . .	0.54	0.77	0.60	0.64	0.39	0.31	0.55
7. 1-4 . . .	0.58	0.74	0.56	0.54	0.43	0.26	0.51
8. <1 . . .	0.75	0.33	-0.42	0.38	-0.03	0.05	0.32
9. Elasticity . . .	0.41	0.57	0.88	0.29	0.66	0.52	0.53
10. R^2 . . .	0.945	0.869	0.764	0.929	0.703	0.930	0.983
11. Standard Error . . .	0.05	0.08	0.11	0.05	0.12	0.04	0.02

application of the method, as in the study by Clements (1940). For purposes of economic policy, on the other hand, it would seem that the inclusion of ancillary expenditures is generally a desirable feature of the method so that when the cost of a child is assessed, for example, it will take account of all the expenditure on clothing that it may occasion.

We turn next to consider the results for the various commodities, noting first that the results of the two tables are very similar. What differences there are affect the income elasticities

for the commodities—which are always higher on the constant-elasticity estimate—rather than the coefficients which are the interest of this paper.

Secondly, the adult male is here seen to account generally for the largest proportionate expenditure on foodstuffs. This might have been expected, since the estimates are based on the Ministry of Labour's working-class inquiry in which a large proportion of the households had male manual workers. The difference for expenditure on meat is particularly large.

Thirdly, the difference between the sexes is to be noted also in the adolescent group, aged 14–17, in which the male has a consistently higher coefficient than the female. Indeed, for vegetables and farinaceous foods, the male adolescent has a higher coefficient than the adult male.

Fourthly, the coefficients for children decrease smoothly with age. The coefficients for the infant under one should not be taken too seriously, since the ancillary effect is particularly large here. The great quantity of milk he appears to be drinking no doubt goes largely to his mother, and the negative coefficient for fruit may only mean that the mother with an infant eats less fruit than otherwise: since she is shown to have a large coefficient of 1.2, this would only be reduced to 0.8 on the arrival of the infant. The infant's coefficients for fish and meat, on the other hand, seem to be realistically low.

There are no doubt many other features of these results that will strike the reader. It would have been desirable to make some comparisons with earlier investigations, but this is only possible directly for the scale for all food, since the individual scales published by nutritionists refer to nutritional elements rather than to food groups. The main characteristic of our scale for all food is that it gives, on the whole, a higher weight for very young children than do most other scales. (Children under 1 on the Amsterdam scale, for example, are given a coefficient of 0.15, and those between 1 and 5 have an average coefficient of 0.35; these may be compared, respectively, with our coefficients in Table II of 0.35 and 0.52.

Finally, we comment on the reliability of the estimates and the degree of confidence that may be placed in them. Estimates may be subject to error both on account of fluctuations due to the statistical element in dealing with a sample of observations and on account of the possible errors in the basic assumptions. In econometric work the statistical error is generally large because of the paucity of observations; even two thousand observations are

not necessarily sufficient to provide estimates which are sufficiently accurate for all purposes.

The matrix of the correlations between the types of persons and the inverse of the moment matrix, which provides the variances of the estimates, are given in Appendix B. The variances of the coefficients may be derived from the latter by the usual formula for the variance of a ratio given by

$$\sigma_x^2 = x^2[\sigma_u^2/u^2 - 2\sigma_{uv}/uv + \sigma_v^2/v^2] \quad (11)$$

where $x = u/v$; in this case the taking of ratios generally doubles the standard error. Row 11 of Tables II and III gives the standard error of the adult female coefficient calculated in this way; the adult female coefficient for all food in Table II is thus to be read as 0.88 ± 0.02 . The standard errors of the other coefficients are in proportion to those given in row 11, the proportions being approximately unity, slightly more for the adolescents and the infant (about 1.2) and slightly less for the children (about 0.8).

These sampling errors have been calculated as if (9) and (10) were ordinary linear equations; since this is not so, the left-hand side depending on an estimated parameter, the standard errors have thus been somewhat underestimated. Nevertheless, as far as the sampling error is concerned there can be little doubt that the first decimal place of the coefficients is well determined: indeed, the regularity of the pattern revealed is such that one is tempted to place some confidence even in the second decimal place.

Rather more serious may be the errors due to the assumptions made about the income scale. If this has been overestimated it will lead to an overestimate of the specific scale by an amount depending on the income elasticity of the commodity. The evidence so far available is not sufficient to suggest whether the equal values adopted for the income scale is unrealistic: while for food the costs of an infant may be only a third of that of an adult, it is precisely then that extra expenditure is incurred on prams, baby cots and clothing which may well outweigh the economies achieved in other directions. On account of the high income elasticity for fruit, its scale is therefore subject to a greater margin of error than the others.¹

¹ In the earlier version of this paper the estimates of the scales that were obtained showed values of the children's coefficients that, on the whole, were much closer to unity than those given here. These high values were due to a bias in the estimation procedure resulting from the method of grouping that was adopted. This bias does not exist in the estimates presented in the present version.

6. CONCLUSIONS

A method has been presented for the analysis of the effects of household composition on consumption which distinguishes "specific" from "income" effects, and the analysis has been applied to yield specific scales for six food groups. The conclusions which may be drawn from the analysis and its results are as follows:

(a) The effect of the addition of an extra person to the household on the consumption of a particular commodity depends, approximately, on the difference between the coefficient of the person on the specific scale for the commodity and the product of the income elasticity and the coefficient on the income scale.

(b) Unless specific and income effects are separated, biased results will in general be obtained in statistical analyses of the data. In particular, unless the income elasticity is zero, an analysis of consumption and household composition which ignores the effect of income may be expected to yield coefficients which are biased downwards.

(c) Using explicit economic-behaviour equations, it has been possible to obtain estimates of specific scales for food-stuffs which are subject to a moderately small margin of statistical error. The necessity to assume an income scale is a drawback at this stage, but once specific scales are derived also for non-food items it should be possible to improve this step in the argument.

(d) The results show that in the sample investigated the proportion of food consumption to be attributed to females is about 15% less than that to males. Consumption is shown as consistently lower for younger children than for older, it being about half that of an adult male for children under school age.

(e) The next step in research along these lines should be to obtain comparable estimates for various non-food items of expenditure. Once these are known it will be possible to compare the standards of living of households of different composition on a much firmer basis.

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APPENDIX A

SOME DETAILS OF THE CALCULATIONS

In this appendix some further details are given of the calculations and a brief indication of the method by which the procedure was adapted for the electronic computer.

The least-squares estimator of the regression coefficients of a vector of observations y on a matrix of observations on k variables X is given by

$$b = (X'X)^{-1}X'y \quad . \quad . \quad . \quad (12)$$

In the present application $(\mathbf{X}'\mathbf{X})$ is the moment matrix of household composition, and has for its elements sums of cross-products of the form $\sum n_i x_j$. These observations were available on Hollerith cards, and could be computed in a straightforward manner.

The vector $\mathbf{y}$, however, is here the composite variable on the left-hand side of (6), and the cross-products of the vector $\mathbf{X}'\mathbf{y}$ are thus of the form

$$\sum n_i x / f(m) \quad . \quad . \quad . \quad . \quad (13)$$

where x represents expenditure, as in the text. It was clearly impracticable to compute this expression for each of the 2,200 households, especially since the value of $f(m)$ changed at each iteration, and a method of grouping had to be adopted. The justification of this method depends on the fact that $f(m)$ is a smooth function of income per person. Accordingly, it is possible to divide the data into groups for which m is approximately constant, calculate $\sum n_i x$ for each of these groups, then weight inversely by $f(m)$ and sum over all groups. If S denotes summation over groups this method thus replaces (13) by expressions of the form

$$S \frac{1}{f(m)} \sum n_i x \quad . \quad . \quad . \quad (14)$$

If there are g such groups the cross-products $\sum n_i x$ can be arranged in a matrix of $\mathbf{Z}$ of order $t \times g$, where t is the number of types of person distinguished. If the vector of length g with the elements of $1/f(m)$ is denoted by $\mathbf{f}$, it follows that an estimate of $\mathbf{X}'\mathbf{y}$ will be given by

$$\mathbf{X}'\mathbf{y} \simeq \mathbf{Z}\mathbf{f} \quad . \quad . \quad . \quad . \quad (15)$$

The closeness of the estimate depends on the number of groups distinguished; but the error introduced by the approximation adopted should not introduce any bias into the result.

Ten groups were distinguished as follows ("income" being measured as total expenditure per person per week):

Income range.	Average income.	Number of households.
<13s.	10s. 4d.	249
13s. to 15s. 6d.	14s. 5d.	181
15s. 6d. to 18s.	16s. 9d.	196
18s. to 21s.	19s. 6d.	247
21s. to 24s.	22s. 6d.	243
24s. to 27s.	25s. 8d.	230
27s. to 31s.	28s. 9d.	222
31s. to 35s. 6d.	33s. 1d.	204
35s. 6d. to 42s.	38s. 7d.	187
> 42s.	54s. 2d.	249

The matrix $(\mathbf{X}'\mathbf{X})^{-1}$ was first computed, and this was stored in the electronic computer together with the matrix $\mathbf{Z}$ for the particular commodity, the vector of average incomes, and programmes for computing the function $f(m)$, for adjusting the values of its parameters, and for matrix multiplication.

Having computed the vector $\mathbf{f}$, the matrix then multiplies a matrix by a vector to give (15), and once again to give the coefficients $\mathbf{b}$ by (12). The residual sum of squares is then computed from

$$\mathbf{e}'\mathbf{e} = \mathbf{y}'\mathbf{y} - \mathbf{b}'\mathbf{X}'\mathbf{y} \quad . \quad . \quad . \quad (16)$$

that is, the inner products of two vector are required.

Aside from the time required to punch the number tapes and prepare the programme for the computations, about twenty minutes of machine time were required for the calculations for each commodity.

The reason for not using the information on prices, in the way mentioned in the text, is that it would have been impossible to obtain the required cross-products without an enormous and uneconomical amount of computation. The information available on the Hollerith cards gave only quantities and expenditure, hence prices would have had to be computed and, further, some earlier calculations on grouped data showed it would have been necessary to use averages of quite a number of price series on account of their comparatively large variance. There did not appear to be any method of grouping, such as that given by (14), which could have simplified the calculations.

APPENDIX B

THE VARIABLES AND THE CORRELATION MATRICES

The precise definitions of the variables used in the calculations is as follows:

1. Dairy produce: Milk (fresh, skimmed, dried, including dried-milk preparations), cream, butter, margarine, cheese.

2. Vegetables: Potatoes, greens (cabbage, cauliflower, lettuce, peas and beans, etc.) roots, tomatoes, onions, dried legumes (lentils, split peas, etc.), tinned and bottled vegetables.

3. Fruit: Oranges, apples, bananas, dried fruit, tinned and bottled fruits.

4. Farinaceous foods: Bread, flour, cake mixture, oat-
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meal, rice, sago, etc., macaroni, cereals, biscuits, buns and cakes.

5. Fish: Fresh, shell, dried and cured, fried, tinned.

6. Meat: Beef, veal, mutton, lamb, pork, bacon and ham, sausages, tinned meat.

7. All Food: Includes expenditure on meals away from home.

8. Income: As usual in family budget studies, total expenditure was used as a measure of income.

The correlations between the eight types of persons are given in the following matrix:

	Adult male.	Adult female.	Male 14-17.	Female 14-17.	10-13.	5-9.	1-4.	<1.
	n_1	n_2	n_3	n_4	n_5	n_6	n_7	n_8
n_1 . . .	1							
n_2 . . .	0.837	1						
n_3 . . .	0.379	0.375	1					
n_4 . . .	0.379	0.375	0.191	1				
n_5 . . .	0.444	0.414	0.395	0.417	1			
n_6 . . .	0.415	0.403	0.264	0.224	0.436	1		
n_7 . . .	0.368	0.366	0.143	0.120	0.252	0.434	1	
n_8 . . .	0.232	0.224	0.074	0.111	0.161	0.246	0.344	1

The inverse of the moment matrix, that is $(X'X)^{-1}$, the elements of which are proportional to the variances and covariance of the regression coefficients, is given below. The number of persons was the sum of the number found in each of the four weeks of the inquiry, and the figures have further been multiplied by 10^6 : to return to original units, the values below should therefore be multiplied by 16×10^{-6} .

	Adult male.	Adult female.	Male 14-17.	Female 14-17.	10-13.	5-9.	1-4.	<1.
	n_1	n_2	n_3	n_4	n_5	n_6	n_7	n_8
n_1 . . .	56							
n_2 . . .	-40	52						
n_3 . . .	-8	-10	184					
n_4 . . .	-9	-9	7	193				
n_5 . . .	-7	0	-33	-41	105			
n_6 . . .	-4	-3	-6	0	-22	79		
n_7 . . .	-6	-7	7	10	-2	-28	119	
n_8 . . .	-8	-4	14	-8	-5	-19	-78	847

A REVISED THEORY OF EXPECTATIONS¹

PROFESSOR G. L. S. SHACKLE'S *Expectation in Economics*² has, in the four years since its first publication, aroused much interest; but it has not stimulated quite the volume of controversy which the importance of its subject would justify. For we can hardly hope to explain what is happening in the economic system if we do not understand how people make up their minds when they are faced by uncertainty about the future. I find it strange and ludicrous (for instance) to see economists trying to explain the business cycle—which must surely be vitally affected by changing expectations—by means of mechanical models which owe nothing to a theory of expectations. In this early and rudimentary stage of our knowledge we need (I think) several rival theories, so that we can look at the implications of each and find observed facts which will enable us to discriminate between them. As long as it remains without rivals, Professor Shackle's theory will be pursued by the doubt that some other explanation of reality might be found equally plausible.

There is, of course, one rival already in the field; the belief that a business man forms a probability distribution of the outcomes of a particular line of action, and summarises the effect of the action by forming the mathematical expectation of the outcome. It is very difficult to believe that such a process really takes place below the level of consciousness—which is perhaps why the idea peeps shyly into economic literature from behind a mantle of vagueness. This article is an attempt to provide another general theory of expectations, and at the same time to try to remove three weaknesses in the Shackle theory.

The first of these can more conveniently and briefly be explained at a later stage in the argument; the essence of it is that Professor Shackle has necessarily to assume that both utility and his "potential surprise" are fully numerical. The second weakness is a lack of generality in the treatment of focus-outcomes. A business man is supposed to focus his attention on a single gain

¹ This article is a version of a paper for a symposium on "business decision making under uncertainty" at Section F of the British Association for the Advancement of Science, meeting at Liverpool in September 1953. The initial stimulus was obviously due to Professor Shackle; Mr. R. A. D. Egerton and Mr. R. F. Harrod have also kindly allowed me to steal ideas from them.

² Second edition (Cambridge University Press, 1952).

and a single loss—two outcomes which, after watering their desirability (or undesirability) by the surprise to which their occurrence would give rise, prove more stimulating than all alternative brews. But why two? Why not three or four? Why not one? A strong favourable stimulus might occupy the mind to the exclusion of all the chances of loss. It is possible to devise experiments in which it is clear that attention is focused on more than two outcomes; but these are admittedly artificial, and I was first led to take the matter seriously by the occurrence of a complicated Stock Exchange situation in which it seemed clear that three outcomes were simultaneously present in the minds of investors.

The second weakness is a more fundamental one, and relates to the nature of potential surprise. We will suppose (and this seems reasonable) that a business man can put the outcomes of a given action in order of their likelihood, as he sees them from his present viewpoint with his present information. He can form, that is to say, what we can call a *subjective probability ordering*; and by a *degree of belief* I shall mean simply the position which an outcome occupies in this ordering. It is quite true, as Mr. J. D. Sargan points out,¹ that having got so far there is no logical barrier in the way of defining a subjective probability in every way analogous to the "objective" probability obtained as a statistical frequency. Similarly, there is no barrier in the way of my proceeding to Timbuctoo next week; it perhaps introduces a dangerous irrelevancy to suppose that the mind makes journeys which it has no intention of making.²

For the present, therefore, the degree of belief is simply a position in an ordering. Now the outcomes which are on the top step in this ordering, the "most likely" ones, must clearly carry zero potential surprise; no rational man would be surprised at the occurrence of one of a group of outcomes which he regarded as more likely than any outside the group. But what of the outcomes on the step one below the top? These must, it appears, be associated with some potential surprise greater than zero.³ In

¹ "Subjective Probability and the Economist," *Yorkshire Bulletin of Economic and Social Research*, February 1953, p. 53.

² It is also noticeable that Mr. Sargan requires the services of the mantle of vagueness when he comes to discuss (*op. cit.*, p. 59) what the entrepreneur does with his subjective probability.

³ This appears to follow from the postulates in Shackle, *Expectation in Economics*, 2nd edition, p. 130; and it is explicitly stated on p. 11. It is also the deduction which I made in my review article (*Economic Journal*, March 1950, p. 100).

other words, all unsurprising outcomes are equally likely. Now this does not, I think, conform to the natural usage of words; one can very well feel that it is more likely that the Conservatives will win the next General election, without assigning any degree of surprise to the possibility that Labour will win. Many a deep pit has been dug by those who unconsciously use words in two senses; and in this case Professor Shackle may be found to have fallen into one of his own digging ¹:

"Suppose I am watching a cricket match when Hutton is batting. If his final score turns out to be 500, I shall be surprised, because experience and Wisden show that human fatigue and the wearing properties of grass pitches make such a score scarcely feasible. But if his score turns out to be 50, or 49, or 81, or 2, or (alas, let me whisper it) even nought, I *shall not be in the least* surprised. Potential surprise is to be attached in some *greater than zero* degree only to those imagined things which seem *incongruous* or *extravagant*, that demand a *stretch of the imagination* or a special search for points of contact with what is familiar. When my friends meet me in the street they do not stagger back dumbfounded because out of all the million people in Liverpool it is just myself who has turned up."

That, I suggest, is an admirable description of the common-or-garden idea of surprise. It marks off, among Hutton's scores, a subset carrying zero surprise, from 0 to (say) 200. The complementary subset (containing propositions such as that Hutton will score *something other than* 47) all carry zero surprise. Then by axiom 3 (Shackle, p. 130), which appears to be a necessary and sufficient condition for equality between degrees of belief, all Hutton's scores from 0 to 200 carry *equal* degrees of belief. Or, on p. 11, we find the inner subset *defined* by those outcomes which have *equal* degrees of belief higher than the belief attaching to outcomes outside the subset; and the outsiders have attached to them a degree of potential surprise greater than zero.

But this is plainly nonsense. One need be no student of form to think it more likely that Hutton will make 50 than 0, or more likely that he will make 50 than 200. In my subjective probability-ordering, I attach a higher degree of belief to the chance ² of meeting in the streets of Liverpool the Lord Mayor than to the chance of meeting Professor Shackle; but neither of these events would surprise me.

¹ "A Comment on Mr. J. D. Sargan's paper," *Yorkshire Bulletin*, February 1953, p. 65.

² The word has no concealed statistical significance.

The trouble is, however, that once one admits varied degrees of belief into the inner subset it is no longer obvious that the outcomes at the extremes of that subset will attract more attention than those in the middle. Let us start again at the beginning.

The problem of making up one's mind in face of uncertainty is a problem of *simplification*. There are commonly many lines of action, and many possible outcomes to each—perhaps a whole continuous set of them. There is a mass of information about similar actions taken in the past, which has to be judged and interpreted in relation to the changed circumstances of the present and future. There are many different ways in which Nature or the unknown actions of other men may upset one's calculations. Under the circumstances it is remarkable that we ever manage to make up our minds at all; and we surely only do so by a subconscious simplification of the issues. If we are to understand the impact of expectations on economic life, we must understand how the simplifying process works; and that is why we shall learn nothing at all from studying rudimentary experiments in decision which are already as simple as they can be made.

Let us fix our attention on an investor who is about to buy some stocks and shares. His actions are much more easily observed than those of an entrepreneur who is extending his factory or branching out into a new product, but the problems are similar. Suppose I buy 100 shares in Standard Motors at 6s. 6d. Then the outcome, in terms of capital value, at a given date in the future, can be looked at as one of a range of "conceivable values" at that date. Looking at an hour hence, the range will be narrow—perhaps 6s. to 7s. For six months it will be wider—4s. to 12s. Looking ahead five years it might be nil to 20s.

Now the human mind does not, I think, carry very easily a picture of a continuous variable. Attention will at once be concentrated on *typical outcomes* in imagined future situations; the first rule of simplification being that all variables must be reduced to a few discrete values. The number of typical outcomes depends in part on the liveliness of the imagination in conjuring up alternative future situations, and in part on the distance of the image-date (*i.e.*, on the time available for disturbing elements to enter in). We may find that, in looking at a fairly close date, a man's calculations are based on a *single* typical outcome. He has made up his mind about what will, he thinks, happen; he has no side-glances at alternative possibilities.

The formation of the set of typical outcomes is a process of broad judgment very difficult to analyse. The mind seems to be under some pressure to reach definite decisions; the sensation of "not knowing what one thinks" is unpleasant, and therefore one tends to give undue weight to any scraps of firm information, and to brush aside disturbing factors because they are too vague to be assessed. A belief that Standard Motors will be worth 7s. next week may be based on no more than the projection of a trend; but, where all else is vagueness, it is an attractive simplifying assumption to suppose that trends go on for some way into the future.

So far I have diverged from Professor Shackle merely by introducing a preliminary process of breaking down the continuous range of outcomes into parts represented by typical outcomes. It seems to me that even this gives a picture of the process too precise to be realistic; very often expectations are of the kind "If things stay as they are, Standard Motors shares will go up"; "if purchase tax is lowered, they will go up a lot"; "If their latest model of car is a failure, they will go down." But ultimately, in order to make choices between different ways of employing funds, an investor will have to "put a figure" to ideas like "will go up" and "will go up a lot"; I think that he will then arrive at a typical expected value for each set of circumstances, rather than a whole range of values.

Now the various typical outcomes, associated with imagined future situations, command various degrees of belief. Strictly speaking, these are affected, not only by the subjective probability-ordering of the imagined future situations themselves, but by varying degrees of belief in one's power to decide on a typical outcome. Thus a result which would be *certain* if an unlikely situation came to pass might command more belief than a doubtful guess about a more likely situation. This would involve a problem of combining orderings, of which we shall get a more important example in the next paragraph; and it is perhaps a fair simplification to suppose that "best judgments" rank fairly equally in their degree of acceptance, so that the typical outcomes will be in the same order of belief as the imagined situations which give rise to them.

Let us now suppose that the stimulus of a given outcome is compounded of the anticipated pleasure or pain which that outcome creates in us as we think of it happening, and our degree of belief in its happening. In following Professor Shackle in this step we find ourselves up against a crucial difficulty, which causes

in his theory the first weakness which was briefly mentioned above. *A function of two variables, either or both of which is defined only in its ordering, will not in general have unique maxima.* Suppose, for instance, that we represent the stimulus by multiplying the money outcome by an index of degree of belief (or of potential surprise, if that is preferred). Let the outcomes £100, £300, £400 carry degree of belief indices $1, \frac{1}{2}, \frac{1}{4}$; so that the stimuli are 100, 150, 100. Then by changing the degree of belief indices (without altering their order) to $1, \frac{1}{3}, \frac{5}{6}$ we can make the stimuli 100, 100, 125 and shift the greatest one from the second to the third position. And in fact the situation is worse than this, for the money-outcomes ought to be replaced by rankings of the utility to which they give rise.

This means that the representation of the stimulus by a mathematical function (Shackle, p. 18) or by a curve (p. 20) is invalid unless *both* utility and potential surprise (or probability) are *fully numerical*. This means that, within the chosen range of their indices, they should be what I will christen as "twiceable"; i.e., such that relations like "twice as surprising" or "half as useful" have a meaning. Professor Shackle does in fact provide (p. 10) for a definite (though strictly personal) numerical scale of potential surprise. The essential condition for the existence of such a scale is an ability to *compare differences*; for if we can say whether the interval of utility, potential surprise or probability from *A* to *B* is greater or less than that from *B* to *C*, we shall be able to move *B* until $AB = BC$, or $AC = 2AB$. Interestingly enough, mankind certainly has a partial ability to compare such differences; as a strong opponent of the onion, I have no difficulty in saying that the difference between my preferences for onions and cabbage exceeds that between cabbage and carrots. But I doubt if we can claim that this ability extends to finer comparisons of differences; and I do not therefore find Professor Shackle's double assumption wholly plausible. It is important to realise that the difficulty produced by rejecting it is not one which is removable by a little ingenuity. It is a logical impossibility to derive a unique ranking by compounding two pure rankings, or one ranking and a numerical index.

Introspection suggests, however, that the difficulty is not due to our having followed a false trail thus far; it has a real counterpart in the processes of the mind. I prefer lamb to beef, and sprouts to cabbage; I therefore have no difficulty in deciding to have lamb and sprouts instead of beef and cabbage, but if the menu offers me lamb and cabbage or beef and sprouts I am

conscious of a difficulty in making up my mind.¹ When the matters under consideration are more weighty, the tension thus created may become great indeed. To fight an act of aggression may do both more good and more evil than to give in to it; and the agony of deciding what to do in such a situation is surely due to the existence of contrary rankings of preference, side by side, and incapable of being given a numerical measure.

But business men are observed to make up their minds. Let us look more closely at the size of the problem. It seems to me likely that, just as the mind simplifies a continuous distribution of outcome by concentrating on a few typical outcomes, so also it will simplify the degrees of belief. It will not be sensitive to small differences of belief, or (rather) it will never give that minute attention to differences of circumstance which would enable small differences of belief to appear. Instead, it will rank outcomes in broad groups, the "perfectly possible," the "just possible," and so on. It seems to me that Professor Shackle's "potential surprise" properly appears as a result of this simplification; it is a special case in which the top group of unsurprising outcomes, the "perfectly possible" group, contains no appreciable differences of degrees of belief. But, if this is so, then potential surprise has no business to turn itself into a continuous function outside the central subset; corresponding to that subset we should have a number of other groups, each containing items equal in surprise and in degree of belief.

We now have a picture of degree of belief like a short staircase, perhaps of one, two, six or ten steps. On each step stand a number of typical outcomes of varying height (i.e., attractiveness). Clearly between those gains carrying *equal* belief we need only look at the largest; so only one on each step need be considered. Clearly also we may be able to exclude others from consideration on the grounds that they are both smaller and less to be believed in than their fellows; so that the total number of gains competing for attention will be less than or equal to the number of typical (gain) outcomes, and less than or equal to the number of steps of belief. It will be noticed that at this point it has become necessary to speak explicitly of gains. The point of view we are taking supports Professor Shackle's view that losses must be looked at

¹ Mr. W. E. Armstrong (ECONOMIC JOURNAL, March 1948, p. 1), chooses the alternative path of deducing, from the fact that people are observed to make up their minds, that both utility and subjective probability must be numerical. But I do not think that Mr. Armstrong sufficiently examines what happens when we cannot make up our minds.

separately; for in this strictly non-numerical system there is no way of comparing the sweetness of a gain with the bitterness of a loss.

Let us call the set of outcomes thus selected for consideration *primary typical gains and losses*. Each has associated with it two rankings, one in the scale of utility and one in the scale of belief. Now let us compare the course of action typified by these expected outcomes with another course of action. To do so we may have to extend the staircase of belief; but quite usually the outcomes of the new course of action will have parity of belief with some of those of the old, because they will arise out of the same imagined circumstances. Thus one may say, "If there is war, share A will be worth 20s.; if there is war, share B will be worth 2s. 6d." The two outcomes, 20s. and 2s. 6d., may both stand on the same step of belief, corresponding to one's degree of belief that there will be war.

Now I think that it is realistic to suppose that the courses of action (call them A and B) will in the first place be compared *in each of the imagined future circumstances*; that is to say, separately for each of the steps of belief. This seems to me to be the natural way of thinking. "Course A will be better than Course B if there is inflation; but B is wiser if there is to be a change of Government . . ." and so on. (If two of these imagined circumstances carry the same degree of belief, one will, of course, compare the bigger, or primary, outcome.) This step is a departure from Professor Shackle's theory, in which A and B are *first* summarised into focus gains and losses and *then* compared; though I shall show that they become identical in a special case.

What are the possible results of this comparison?

(1) A may be unequivocally better than B; that is to say, for each step of belief, its primary gains may be larger, and its primary losses smaller, than those for B; or vice versa. This definite answer may not be so unusual as it sounds, for it may be that the previous steps of simplification have reduced the number of primary typical gains and losses to one or two. If there is only one gain and one loss to be compared, then one would expect a definite answer 50% of the time, even if losses are unassociated with gains.

(2) The *weight of the evidence* may favour A, or favour B. We must go carefully here, lest a numerical degree of belief sneaks in by the back door. But if A is superior to B, except in one or two imagined circumstances which are not of the most likely,

then we would, I think, without making much comparison of stimuli, be willing to come down on the side of A. The reason may be simply that a decision has to be made, and the compulsion to make it makes us snatch at any evidence however slight.

(3) A is uniformly more risky than B (or vice versa); that is to say, on each step of belief A has the better primary typical gain, but also the worse primary typical loss. If there is only *one* step, this is just the kind of situation which can be dealt with by Professor Shackle's gambler indifference curves; his special case, in which no outcome is surprising, corresponds exactly to my special case with only one step of belief. If there are several steps, we shall get several pairs of points on the gambler indifference map. We may either get an unequivocal answer, that for each level of belief A's point is preferred to B's, or vice versa; or the weight of evidence may favour one or the other; or we may be left in doubt.

(4) This doubt can also arise in the more general case, if neither outcome is uniformly better, nor uniformly more risky, nor preferred on the weight of the evidence. We have now arrived, I think, at the irreducible minimum of doubt. If we did not go through the earlier stages of reducing the number of outcomes and steps of belief to a very few, this doubt would be a usual occurrence. "The more one looks at the matter, the more difficult it appears"; *i.e.*, a close analysis, by increasing the number of possibilities brought under consideration, makes it more difficult to decide. It is simplification which makes decision possible—but, even then, doubt may sometimes remain.

What do we do about it? There are four reactions which seem to me to be possible. One is to look for a third course of action which can beat both the other two—*i.e.*, to make the decision between them unnecessary. Faced with the choice of lamb and cabbage or beef and sprouts I may look on the menu for plaice and chips. Another is to delay action, if that is possible; this may have some significance in the study of the choice of assets, for people may be liquid for a period because they are unable to make up their minds about how to employ their money. A third possibility is to do *both* the actions, between which decision is so difficult; this is surely the origin of hedging. A fourth is to trust to Chance, to toss a coin, to use some irrelevant adjunct of A or B as a reason for preference.

The theory outlined above is less general than Professor Shackle's, in that it works with discontinuous variables; but it is more general in allowing comparisons of more than two outcomes.

It is, I hope, free from the objections which I have raised to the concept of potential surprise and to the nature of the stimulation function, but without letting numerical probability back into the picture. It explicitly recognises the existence of an irreducible doubt; and in doing so it seems to me to cover a wider range of the possibilities of which I am aware in my own business decisions. But it is not yet in a form for testing. The next step is, I think, to accumulate case-studies on investment decisions (whether for financial or "real" investment) and to examine them to see if they enable us to discriminate between the rival theories.

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DISTRIBUTION OF INCOME IN CEYLON, PUERTO RICO, THE UNITED STATES AND THE UNITED KINGDOM ¹

THE following study of distribution and level of incomes in Ceylon is an early venture of the sort in Asia. Ceylon's size distribution of income is compared with data of fair reliability from one other "under-developed" country in North America, and with excellent data from two "developed" countries, one of North America, one of Europe.

Ceylon is a nearly six years' old independent member of the British Commonwealth, with a population of 8 million and land area about half that of England. In the region of densest population in the south-west, around Colombo, the monthly average temperature varies only 3° the year round, between 79° and 82°. In the mountainous country of the central south the climate becomes semi-tropical and temperate, depending on altitude. At Nuwara Eliya, 6,200 feet up, monthly average temperatures vary between 58° and 62°. In the lowlands of the south-west the main agricultural crop is coconuts; at slightly higher elevations rubber; and beginning in the rubber area and extending up highest mountain flanks the various grades of tea—low, middle and high-grown.

Nearly 18% of the population were in 1950 living in urban areas; and 10% on extensive estates, in considerable part foreign owned and operated by Europeans, and producing the bulk of the export crops, tea, rubber and coconuts. The remaining approximate 72% of the population live in rural areas, producing some rubber and coconuts on small holdings, but more characteristically growing rice and minor crops on minute holdings. Pressure of population on land—rapidly growing since DDT's victory over malaria in the late 1940s—has reduced the median peasant rice-holding to under one-half acre.

The value of income produced in the Island is subject to sharp variations. About a third of gross income originates from the three export crops, whose prices can vary sharply. The terms of trade were at an index of 60 in July 1952, as compared with 123 in March 1951, the peak of the post-Korean boom.

¹ I have been helped by Mr. M. Swaminathan of the Economic Research Department of the Central Bank of Ceylon in tabulating and checking the Ceylon data.

Ceylon can be used as a sample for South Asia and even for some other parts of Asia.¹ Its economy is in transition, with feudal aspects in land tenure and in some social relationships; with very little industrial production; with well-organised estates side by side with traditional small-scale peasant production; with much hope of economic advance and fear of retrogression in a newly independent and uneasy democracy. It has special advantages as a subject for study. The facts of its economic life are not blurred by internal conflict or external invasion; its borders are marked unmistakably by the Indian Ocean; its area is not so vast nor its economy so diverse that the significance of summary figures is lost in dispersions of the basic data.

SIZE DISTRIBUTIONS OF INCOME

Our basic information comes from a survey administered by Dr. Harry Cullumbine in December 1950, in co-operation with the Department of Medical and Sanitary Services of the Ceylon Ministry of Health and Local Government.² The survey was designed to find the relation between disabling illness, and income and other possible determinants. The interviewers were mainly Sanitary Inspectors. Each of them was asked to visit twenty-five houses in his area. Since the Inspectors are distributed approximately on a population basis, it was hoped that this procedure would provide a fair distribution of houses visited over the whole Island.³ The twenty-five houses were chosen at random: a list of thirty random numbers was set against a numbered list of houses in the area (obtained usually from village headmen), and the interviewer was asked to obtain information from the first twenty-five houses at which there was someone at

¹ A 1949 estimate for a minority of income receivers in Japan—certainly less than one-fourth—is in the *Statistical Yearbook of Japan*, 1950, p. 374, Table 199-B. The original information is from tax sources, and is affected by tax avoidance and evasion. Cf. United Nations, *Economic Bulletin for Asia and the Far East*, January–June 1952, pp. 22–4. A 1948 population census in the Philippines included questions on income. Results are published in W. I. Abraham, *The National Income of the Philippines and its Distribution* (Provisional Text, Manila, 1952). In India a sample survey for national income purposes was undertaken in 1950–51, with results not available at time of writing this article.

² The manuscript report, which may be published later, is H. Cullumbine, *A Survey of Sickness and Disability Illness, Ceylon*, 1950. This study is based on the original near—18,000 returns.

³ Estate dispensers were used for those estates where they were available. There was hence some understatement in the final total for estates, for which we have entered a correction.

home at the time of visit. The data on household income attempted to include real income in the form of home-produced foodstuffs, and the rental value of houses lived in by their owners. About one-eightieth of the total population was sampled: 17,946 households, in which were 94,128 persons.

We have thrown out some returns in which income or other relevant data were missing. Income is not always easy to estimate, especially for families with appreciable income in real form, or with irregular receipts, like craftsmen and paddy cultivators. But the original interview forms were gone over for reasonableness by district revenue officers and estate superintendents. We see no reason to expect any persistent bias or wide error. The median income for all Ceylon per household per month, before income tax, came to Rs. 73 (Rs. 876 a year); the mean income was Rs. 96 (Rs. 1,152 a year). Since the income tax affects only the extreme upper tail of Ceylon incomes (an individual is free of income tax unless his income exceeds Rs. 400 a month), median income after income tax was the same as median income before tax. Mean income after income tax was Rs. 94 per household per month (Rs. 1,128 a year).

By incomes, rupees per year.	Percentage of families.	Percentage of total income. ¹	
		Before tax.	After tax.
0– 300	8.7	1.1	1.1
300– 600	25.1	10.7	10.8
600– 900	21.9	13.5	13.5
900–1,200	13.6	12.3	12.4
1,200–1,800	14.0	18.0	18.0
1,800–2,400	7.0	11.6	11.7
2,400–3,000	3.8	8.3	8.3
3,000–3,600	1.7	4.8	5.0
3,600–4,200	1.7	5.5	5.2
4,200–4,800	0.5	1.8	4.3
4,800–5,400	0.6	2.4	
5,400–6,000	0.1	0.7	
6,000–7,200	0.6	3.3	5.4
7,200–8,400	0.2	1.5	
8,400–9,600	0.1	1.0	0.9
9,600 and over	0.4	3.5	3.4
Total	100.0	100.0	100.0

¹ Average income for each intermediate group was calculated so as to allow for the spread of incomes as indicated by the frequencies in the preceding and the following groups. For the class Rs. 0–300 the midpoint was taken as the average; for the Rs. 9,600 and over class, the average was taken, on the basis of sample returns, as Rs. 10,800.

One rupee exchanges for 21 U.S. cents, or for 1 shilling and 6 pence. If it seems that the Ceylon income level is unbelievably

small, one may remember that in a northern climate an individual needs more food, more clothing, more shelter, and perhaps more recreation that costs money than in Ceylon's benignant isle, where, as Bishop Heber informed us, every prospect pleases.

The complete distribution of income is given in the Table on p. 823.¹

Despite some doubts as to reliability, we give below, and plot in a Lorenz chart, data on the 1946-47 distribution of income in Puerto Rico. The basic information combines income-tax returns (for higher incomes) with sample studies (for lower). It

Families ranked from poorest to richest.		Percentage of total income.
By incomes, U.S. dollars per year.	By tenths.	
Under 529	Lowest four tenths	10.8
529-703	Fifth tenth	5.6
703-876	Sixth tenth	7.2
876-1,090	Seventh tenth	8.8
1,090-1,401	Eighth tenth	11.2
1,401-2,162	Ninth tenth	15.6
2,162 and over	Highest tenth	40.8 *

* United Nations Statistical Paper Series E, No. 3: *National Income and its Distribution in Under-developed Countries*, New York, 1951. The data are based on H. S. Perloff, *Puerto Rico's Economic Future*, University of Chicago Press, 1950, pp. 164-7. The total figures for all income indicate substantial under-reporting, "possibly of as much as 25 per cent." There is understatement among very low incomes because of a tendency to neglect small items of miscellaneous income, though they can aggregate to a considerable percentage of total income. There is also understatement among the highest incomes because of income taxes—both from the desire to avoid reporting an income that brings one into the income-tax bracket and from the desire to minimise income-tax liability (an especial temptation among professional people). The Puerto Rico income tax affected only those in the ninth tenth (to a moderate extent) and the highest tenth.

is subject to errors of understatement for highest and lowest incomes, and sampling errors for lowest incomes. The data show by a wide margin more inequality in Puerto Rico than in any other of our four countries. The median annual income was U.S. \$798; the mean was U.S. \$1,050. We lack data on incomes after income taxes.

¹ The number of families from the estate sector constituted about 6% of the original sample. We estimate that the actual proportion would be 10% (adjusted from the 1946 census figure of 12%). To enter a correction for this estimated under-sampling of the estate sector, the number of families in each income group was adjusted by multiplying by a factor chosen so as to make the resulting totals conform to the following proportions in the three sectors: rural 72%, urban 18%, estate 10%.

The United States has since 1946 carried on under the auspices of the Board of Governors of the Federal Reserve System, with the work actually administered by the Survey Research Centre of the University of Michigan, an annual survey of consumer finances. The returns below are for "spending units"; that is, for persons of the same family who live in the same dwelling and pool their incomes to meet major expenses. The 1950 median income for spending units in the United States was, before income taxes, \$3,000. Mean income was \$3,520, and mean income after Federal income taxes \$3,220. The following gives the distribution of total money income.

Spending units ranked from poorest to richest.		Percentage of total money income.	
By incomes, dollars per year.	By tenths.	Before income tax.	After Federal income tax.
Under 830	Lowest tenth	1	1
830-1,430	Second tenth	3	3
1,430-1,990	Third tenth	5	5
1,990-2,510	Fourth tenth	6	7
2,510-3,000	Fifth tenth	8	8
3,000-3,550	Sixth tenth	9	10
3,550-4,080	Seventh tenth	11	11
4,080-4,950	Eighth tenth	13	13
4,950-6,210	Ninth tenth	15	15
6,210 and over	Highest tenth	29	27
Total		100	100 *

* *Federal Reserve Bulletin*, August 1951, pp. 929, 935.

The following table consists of data on the distribution of personal incomes in the United Kingdom for the calendar year 1949, with effects of income and surtaxes calculated on the basis of fiscal 1949-50 tax-rates.¹ The basic data are income-tax returns, in which a married couple enters as one individual. The approximate median income before tax was £282 a year, and after income and surtax, £267 a year. The mean income before tax was £430, and after tax approximately £377.²

¹ *National Income and Expenditure of the United Kingdom, 1946 to 1950*, Cmd. 8203, H.M.S.O., p. 22.

² The approximate median incomes are calculated on the rough assumption that unallocable incomes (see footnote to the table) are proportionately distributed through all income ranges. Median income after tax assumes additionally that the average percentage income reduction due to tax for the income range in which the median income lies, is applicable also to the median income. The mean income after tax assumes that the average percentage tax deduction to which allocable incomes are subject can be applied also to unallocable incomes.

Incomes, pounds per year.	Number of incomes.		Total income before tax. ¹		Total income after income tax and surtax.	
	Thou- sands.	Per- centage.	£ millions.	Per- centage.	£ millions.	Per- centage.
Under 250	10,900 ²	44.6	2,209	24.4	2,185	27.5
250- 499	10,310	42.2	3,546	39.2	3,360	42.3
500- 999	2,443	10.0	1,614	17.8	1,375	17.3
1,000-1,999	545	2.2	728	8.1	539	6.8
2,000-9,999	219	0.9	760	8.4	436	5.5
10,000 and over	11	0.05	190	2.1	44	0.6
Total	24,428	100.0	9,047	100.0	7,939	100.0

¹ All allocable transfer incomes have been included in incomes under £250. In addition, there are amounts that could not be allocated to a particular range of income. They consist of income not subject to tax (e.g., interest on National Savings Certificates, co-operative society dividends, incomes in kind, etc.), the investment incomes of life-assurance funds, certain other incomes not assessed to tax, and that part of employees' incomes which is allowed as a deduction before assessment to tax (e.g., for national insurance contributions and expenditure on tools). Such unallocable incomes are estimated at £1,460 million in 1949 (*ibid.*, p. 22).

² There is a difficult problem of estimation of the number of incomes below £250, which is not given in the Cmd. 8203 table. We estimate as follows: The Commissioners of Inland Revenue 92nd Report, Table 87, gives 8.7 million incomes between £135 and £250 for the fiscal year 1948-49. We take it that for the calendar year 1949 this number would not be appreciably different. The Commissioners' total for income receivers, their spouses and dependants omits about 8% of the population, or 4 millions, of whom most would fall in the under £135 bracket, the rest being omissions of those above £135 and errors. 40% of the whole population are income receivers (counting a married couple as one receiver), but this proportion is appreciably higher among lower income groups because of the pressure of the wolf against the door, because more of them are single persons, and because children are decidedly fewer among very low-income families (*Royal Commission on Population Report*, Cmd. 7695, p. 140). A 50-60% range would give 2.0 to 2.4 millions, or a total of 10.7 to 11.1 millions for all income receivers under £250.

For an alternative and independent approach: The number in the work force in mid-1949 was 23.0 millions (Ministry of Labour *Gazette*, H.M.S.O., February 1951, p. 46). The number receiving pensions under the National Insurance Act in 1949 was 4.0 millions (National Insurance Act 1946, *First Interim Report* of the Government Actuary, p. 19, H.M.S.O.). This gives an estimated total of income receivers, to which there would be only minor qualification, of 27.0 millions. By the 1951 census, a bit over 2.6 million married women were then gainfully occupied. We take it that the number would not have been appreciably different in 1949, and thereupon have an estimate for total incomes in 1949, counting a married couple as one individual (as in the national income data), of 24.4 millions. There were 13.5 incomes above £250, leaving 10.9 million incomes under £250.

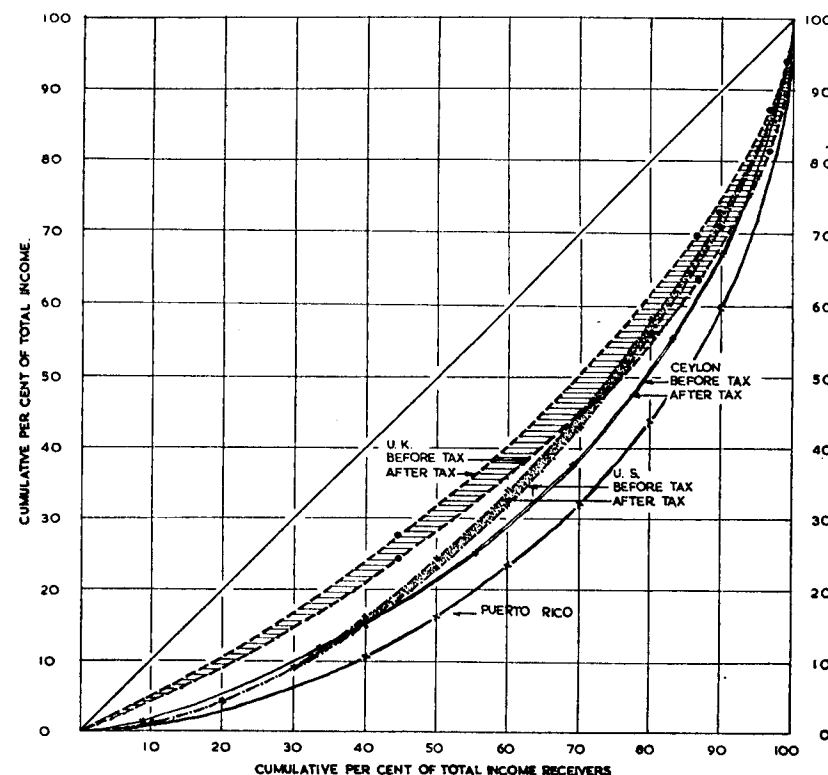
We take 10.9 millions as our estimate of the number of incomes below £250. (To take a range of 10.7 to 11.1 millions, as I once intended, would give a range of percentages for the six income groups of 0.5, 0.4, 0.1, 0.02, 0.01 and 0.0003—too small a range to significantly affect the chart below.)

Below is a Lorenz type chart, with cumulative percentages of total income, after deduction of income tax, on the vertical axis, from 0 to 100: and with cumulative percentage of total income receivers on the horizontal axis, from 0 to 100.

If a country had equal income distribution, the Lorenz curve would be a 45° straight line, starting at the origin and extending

upward to the right. That is, any 10% of income receivers would get 10% of income; any 20%, 20% of income; and so on. All actual distributions bulge downward: the greater the concavity, the greater the degree of inequality. Complete inequality means

CEYLON, U.K. AND U.S. INCOME DISTRIBUTIONS



that 99+ % of income receivers get no income, and one lone person gets it all. The Lorenz curve follows the bottom horizontal axis, then up the vertical axis.

There is some uncertainty about the comparison of our distributions at low incomes, still more at the high-income extreme. But in general Puerto Rico has the most unequal distribution, then Ceylon, then the United States; then the United Kingdom with the most nearly equal distribution. We can put this visual impression into figures through an index of concentration, in which 100 represents complete inequality and 0 complete equality.¹

¹ Suppose we divide the area, *A*, between a Lorenz curve and the 45° line of complete equality, by the total area, *B*, below and to the right of the 45° line. Then if there is complete inequality in a distribution, *A/B* equals 100%; if there is complete equality, *A/B* equals 0%. *A/B* is the index of concentration.

The concentration ratios are :

	Before income taxes.	After income taxes.
Puerto Rico	53	— ¹
Ceylon	43	42
United States	40	38
United Kingdom	35	27

¹ Unknown. But since Puerto Rico income taxes affected only the two highest tenths, the after-tax figure was only slightly lower than the before-tax figure.

There was probably a bit more inequality in Ceylon in December 1950 than at earlier or later times, since this was nearly the peak of the Korean boom, with windfall returns accruing to, presumably, people who were already high income receivers.

Some conscientious caveats should be entered here. The figures on incomes, while reasonably accurate, are not strictly comparable, since the definitions of the income receiver vary. The concept of income differed. Real income was in the main excluded from Puerto Rico, United States and United Kingdom data, included in Ceylon. There are qualms about the accuracy of the Puerto Rico data, given above. Finally, the figures for Ceylon, though the concept of "income" used in the Survey was valid and though the returns were checked, emerged as a by-product of a medical survey conducted primarily to investigate the incidence of disease. And so they lack the reliability we should desire.

Despite these qualifications, it is highly probable that the ranges of inequality shown by our calculation would be preserved in a more accurate and more completely homogeneous comparison.

The greater inequality in Ceylon than in the western countries accords with the impression of an average westerner in Ceylon. In fact, the impression is more emphatic than our data bear out. The reason is partly that the westerner is struck by the luxurious life of a minute segment of the population who have large American cars, huge houses, flocks of servants, and jewellery by the pound. The typical westerner has not associated in his home country with a comparable wealthy segment of the population, nor are the western rich and not-so-rich nearly so given to conspicuous spending as are their parallels of the East. In the West Veblen has in fact or by coincidence won—in part—his battle. Beyond a certain point of grandeur, the conspicuous spender feels uneasy in point of taste and perhaps of morality. In the East the older tradition remains hardy. A Colombo well-off family

with an income the equivalent of £2,600 (or \$7,300) a year considers it suitable to marry off a daughter in a sumptuous festival boasting 2,000 guests. A college graduate in a good job paying £750 (or \$2,100) a year thinks it only decent that his wife should possess £1,800 (or \$5,000) of jewels. The mischievous notion that Woolworth's has something that looks almost as good is still distant.

In the East, furthermore, the Westerner's blanket impression of a widely different pattern of life and of general poverty blurs to him the existence of the gradations that spell middle-class living: a diet that contains meat rather than one without; concrete, stone or wood floors rather than dirt; tile roofs rather than palm thatch; brick walls rather than wattle-and-daub; sarongs and sarees of good-quality cotton instead of the cheapest.¹

The high degree of equality in the United Kingdom stands out. Before tax United Kingdom inequality is four-fifths that of Ceylon; after tax, two-thirds.² Even before tax, income is distributed more equally in the United Kingdom than in any other country after income tax (looking to the overall picture and neglecting qualifications in the upper income range). And the income tax hits inequality harder in the United Kingdom than in either other country (four times as hard as in the United States, by the index of concentration measure). Has the United Kingdom gone too far toward equality? The above comparison gives an arithmetic emphasis to the question of whether incentives are being sacrificed too much.

But presumably an optimum degree of inequality, which compromises justly between humane considerations on one hand and incentives on the other, would, if one were able to estimate it, differ among different economies: industrial and agricultural, mixed-capitalist or semi-feudal, developed or "under-developed." What is desirable in one country might limit economic progress in another. And the actual degree of inequality existing in any country may be more the result of the type of economy and its level of development than of the influence of government taxes and other policies.

In Ceylon as in other countries, if we look forward to raising incomes of lower income groups, we must aim principally to raise the productivity of those at the bottom of the income scale rather than transfer income from the rich to the poor. If in late 1950 all income in excess of Rs. 4,800 a year were taken away and distributed to those getting less than Rs. 1,200 a year, we should raise the average incomes of the latter by only Rs. 66 a year.

¹ Cf. United Nations, *Economic Bulletin for Asia and the Far East*, January-June 1952, pp. 24-5. ² By comparing indexes of concentration.

If the lower limit of expropriation were Rs. 7,200, the contribution would be Rs. 24. This figuring assumes what could not be completely true, that production would continue undiminished after the redistribution took place.

INCOMES BY SECTORS OF THE ECONOMY

Of the three major sectors of the economy, the urban sector has highest incomes, the estate next :

	Rupees per month.	
	Median income.	Mean income.
Urban sector . . .	121	165
Estate sector . . .	90	101
Rural sector . . .	58	78

A conspicuously small percentage of estate and urban families fall in the "very poor" range of below Rs. 75 a month. A conspicuously large percentage of urban families fall in the relatively high income levels of Rs. 500 and up.

BY OCCUPATIONS

The following tabulates income levels by occupations. The groupings of occupations are not ideal from an economic point of view, being chosen originally for homogeneity from the point of view of susceptibility to diseases :

	Percentage of families in sample.	Rupees per month.	
		Median income.	Mean income.
1. Higher professions : doctors, lawyers, planters, business men, Civil Servants, etc.	1	329	359
2. Sedentary work : teachers, clerks, tailors, draughtsmen, accountants, postmasters, etc.	8	179	200
3. Field officers of the Government : public works, policemen, surveyors, rural development officers, village headmen, etc.	3	167	191
4. Factory and office supervisors : store-keepers, factory overseers and foremen, nurses, midwives, market supervisors, etc.	1	172	192
5. Heavy labour : all estate labour, harbour workers, fitters, mechanics, masons, carpenters, road workers, etc.	31	70	85
6. Light labour : domestic servants, salesmen and shop assistants, boutique traders, etc.	24	60	82
7. Agricultural labour : farmers, peasant cultivators, gardeners, etc.	30	49	64
8. Others	2	103	154

The ratio of the lowest average income to the highest average income is nearly 6 to 1. The parallel ratio in the United States between the average incomes of the lowest and the highest major occupations has been recently 2.4 to 1,¹ another measure of the greater inequality of income in Ceylon.

BY FAMILY SIZE

The larger the family, through every family size, the larger is the income. "Families" are here identified with number of persons resident in a given household : persons did not need to be related nor to pool their incomes (as in the United States data). In fact, the great majority of households did fulfil these sharper criteria.

Family size.	Rupees per month.	
	Median income.	Mean income.
1	36	61
2	50	69
3	58	79
4	62	87
5	65	95
6	71	102
7	71	104
8	80	119
9 and over	102	141

In the West this positive correlation would indicate principally that families better able to take care of children were voluntarily choosing to have more. But if there are more children in Ceylon better-off households (as is likely), a lower mortality rate is the cause. Pregnancies are most numerous among low income families. If we divide the households into income ranges of Rs. 0-100, 100-300 and 300-and-over a month, the lowest income group had a 57% higher pregnancy rate per thousand females, but also a 31% higher sickness rate per thousand persons.² And although Ceylon's average income is much higher

¹ *Current population Reports of the Bureau of the Census*, Pamphlet 60, No. 3 (Washington, 1947), p. 24. The estimate is for the year 1946.

²

Income per month, Rs.	Median income per month, Rs.	Median family size.	Median income per capita.	1950 sickness rate from all causes, per 1,000 persons.	1950 pregnancies, per 1,000 females.
0-100	50	4.2	11.9	255.9	15.5
100-300	148	5.1	29.0	231.3	14.8
300 and over	393	5.6	70.2	196.0	9.9

than that of most countries of Asia, between a quarter and half of all admissions to Ceylon hospitals are attributed to malnutrition.

Two other causes are contributory to rising family size with rising income: there are more income receivers in large households, and relatives move in when a family is relatively well off. This last has a curious aspect as a built-in cultural tax on industry.

Median incomes are higher in estate than rural, and in urban than estate, sectors for every family size:

Family size.	Median incomes, rupees per month.		
	Rural sector.	Estate sector.	Urban sector.
1	29	47	100 ¹
2	44	71	82
3	49	83	95
4	55	87	99
5	58	93	104
6	63	107	125
7	62	116	128
8	69	129	170
9 and over	74	158	183

¹ This anomalous figure may be due to the residence in urban areas of a large proportion of high-income people whose families do not live with them.

BY RACES

There is a wide range among incomes by races:

	Percentage of families to the total sample.	Rupees per month, mean income.
Europeans	0.01	—
Other races than those listed	0.2	219
Indian Moors	0.2	215
Eurasians (especially those of mixed Dutch-Ceylonese ancestry)	0.9	207
Malays	0.4	144
Ceylon Moors	5.0	117
Ceylon Tamils	12.0	107
Indian Tamils	10.0	106
Sinhalese	71.0	89

“Europeans,” which means anyone of European ancestry, were represented in the original sample by only two families; and though European average income is plainly higher than that of any other racial group, the figure was thrown out on grounds of an unreliably small sample. Ceylon and Indian Moors are descendants of traders, the former being the longer resident in Ceylon. Ceylon Tamils are descendants of South Indians, whose

ancestors have been resident in Ceylon for centuries, though they still speak Tamil, a South Indian language. Indian Tamils live mainly on the estates, and are migrants attracted into Ceylon within the last century and a half by expansion of estate production. Sinhalese, the most numerous of Ceylon peoples, are descended mainly from North Indian invaders of several thousand years ago.

The amount of the differences in income, race by race, is less interesting than the fact that the differences exist. Why should Malays earn 62% more than Sinhalese, who are the most firmly rooted of all groups in Ceylon and regard Ceylon as “their country”? And “other races” 146% more? The obvious answer is that a still traditional society favors the prolonged existence of non-competing groups. Conspicuous racial and economic differences—in features, color, dress and language—make it easier for traditional inequalities of opportunity to persist. In addition, there may be some differences of native ability. Probably much more important are cultural variants in habits of work, regularity, time preference and choice of occupations. The Sinhalese is conventionally viewed as an easy-going fellow, with high time preference for the present—and within the present, for leisure rather than for the chattels of this world. These influences must have their effects in varying incomes, despite the greater general pressure in a society relatively close to subsistence to raise one's income.

The income differences by races in Ceylon are much larger than one would expect among long-resident and assimilated peoples in England or the United States initially of diverse national origin, although some partially assimilated people in the United States—Negroes, Mexicans—have incomes sharply divergent from those of the rest of the population.

On the basis of the above and some other not inconsistent information¹ one may present a hypothesis on economic development: that it will be found, as more data are accumulated, that income distribution in “under-developed” economies, by size, by occupations and by national groups, is more unequal than in developed economies. The persisting cause is immobility in the widest sense: High incomes, and surpluses in general, are less subject to erosion in a traditional than in a commercial-industrial society. Some aspects of this are listed above. Others are concentration of land ownership, poor

¹ United Nations, *National Income and its Distribution in Under-developed Countries*, Statistical Paper Series E, No. 3, New York, 1951, pp. 15-32.

educational facilities for poor children, high interest rates, and monopolistic advantages to distributors of goods. This last is probably a matter of importance in "under-developed" countries: less knowledge among customers of market qualities and prices, and isolation enforced by deficient transportation are continuing causes. Monopoly is a fact in under-developed areas. In high-income countries it is an epithet or a sophisticated argument.

For after-income-tax comparisons, an additional factor is worth contemplating. Where nearly all people are very poor, the sentiment for reducing a wide range of above-average but still moderate income groups to plainly less than adequate consumption can hardly be strong.

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A NOTE ON DISEQUILIBRIUM AND THE EFFECTS OF THE ELASTICITIES OF SUPPLY AND DEMAND

GIVEN a unique position of equilibrium in the market for a single commodity, and given that a disturbance exogenous to this market upsets this equilibrium, what is the shape of the path back to (or away from) the equilibrium position? This is the question which this note endeavours to answer. Walras arrived at a unique position of equilibrium by assuming that individuals "cried" prices on the market until the equilibrium price for the commodity supplied was attained: only when this equilibrium price was discovered were any commodities exchanged. Edgeworth, doubting the validity of such an idea on any actual market, introduced the concept of "re-contracting." The problem lay virtually dormant, as far as English writings were concerned at any rate, until Kaldor published his well-known "Note on the Determinateness of Equilibrium,"¹ and raised the haunting spectre of the "cobweb."

Yet our question still remained unanswered for those classes of commodities which were not ensnared in any spider's meshes, and even for the unfortunate commodities no DEFINITE PATH of movement was discovered. The fact that producers of some commodities are unable to respond fairly quickly to the effects of price changes on the market (commodities displaying "discontinuous adjustments," to use Kaldor's term) is now generally agreed to be one of the main causes of the cobweb.² It appears that a clear-cut distinction exists between these "long-supply-adjustment-period" commodities, as we may term them, and those brought to the market under conditions of a "short-supply-adjustment-period" (i.e., in Kaldor's terminology, displaying "continuous adjustments"). The exposition of the cobweb theorem by means of supply and demand diagrams³ seems to lend itself to this simple dichotomy. But we may well ask why this division should be so rigid. Cannot the many commodities which an economy produces be placed in an order in this respect,

¹ N. Kaldor, "A Classificatory Note on the Determinateness of Equilibrium," *Review of Economic Studies*, Vol. I, February 1934, pp. 124-36.

² Cf., e.g., R. Cohen, *The Economics of Agriculture*, London, 1947, pp. 99-101.

³ Cf., e.g., Mordecai Ezekiel, "The Cobweb Theorem," *Readings in Business Cycle Theory*, London, 1950, pp. 422-42.

rather than in two distinct classes? In reality, there is no commodity whose supply on the market conforms to the condition of "continuous adjustment." In other words, can any indication of the magnitude of the damping (or anti-damping) of the fluctuations around an equilibrium position be obtained? These questions must be answered by a more distinct formulation of the variations around the equilibrium position. A second factor, however, upon which there is also general agreement, is the ratio of the elasticity of supply to the elasticity of demand. Let us start our analysis at this point.

We may define the elasticity of supply, n , according to the original Marshallian definition, so that $n = (q/Q)(P/p)$, where Q and P are the original (equilibrium) quantity and its price, and q and p are the increases in quantity and price, respectively. The elasticity of demand is defined as a positive coefficient, so that $e = -(q/Q)(P/p)$.

In view of the fact that our problem is essentially dynamic, though not in the originally Frischian sense,¹ we shall adopt the usual period concept. We shall simply assume that at the end of one period, and only at the END of a period, the elasticity of supply of our commodity acts, while at the beginning of the next period, and only at the BEGINNING of a period, the forces set in motion by the elasticity of demand take effect.² Only at the end of this second period does the elasticity of supply again make itself felt. In other words, the effect of the elasticity of demand is instantaneous, while that of the elasticity of supply operates with a time-lag. The length of our period, therefore, is what we termed above the supply-adjustment-period, i.e., the time-lag between a variation in price from the demand side and the corresponding variation in output SUPPLIED ON THE MARKET.³

As we wish to analyse movements on a single market only, first, we rule out any interaction with other markets; secondly, and more importantly, it must be noted that income effects are completely ignored. We assume that Q is the equilibrium quantity of our commodity supplied and demanded at price P on a particular market in period 0. At the end of period 0, due to some exogenous factor, the quantity of our commodity supplied decreases by q , so that, at the beginning of period 1, the price of the commodity is raised by the effect of the elasticity of demand. This proportional price increase at the beginning of period 1 is

¹ Frisch adopts the differential rather than the difference equation.

² Cf. F. Benham, *Economics*, London, 1947, p. 239, note.

³ Cf. Kaldor, *loc. cit.*, p. 133.

$q/(eQ)$, where e is the elasticity of demand;¹ the price-level at the beginning of period 1 is, consequently, $P(1 + q/eQ)$. The proportional increase in the quantity supplied at the end of period 1, in response to this price increase, is $\frac{nq}{eQ}$, where n is the elasticity of supply.² The quantity supplied at the end of period 0 and demanded at the beginning of period 1 was $(Q - q)$, hence the absolute increase in the quantity supplied at the end of period 1 is $(Q - q) \cdot \frac{nq}{eQ}$, so that the quantity supplied at the end of period 1 is $(Q - q)\left(1 + \frac{nq}{eQ}\right)$. This increase in quantity supplied, however, is encountered by demand at the beginning of period 2, so that the proportional fall in price at the commencement of period 2 is $\frac{nq}{e^2Q}$, while the price of the commodity is $P\left(1 + \frac{q}{eQ}\right)\left(1 - \frac{nq}{e^2Q}\right)$. Therefore, at the end of period 2 the proportional fall in the quantity supplied is $\frac{n^2q}{e^2Q}$. It follows that at the end of period 2 the quantity of the commodity supplied is $(Q - q)\left(1 + \frac{nq}{eQ}\right)\left(1 - \frac{n^2q}{e^2Q}\right)$. The price of the commodity at the beginning of period 3 is $P\left(1 + \frac{q}{eQ}\right)\left(1 - \frac{nq}{e^2Q}\right)\left(1 + \frac{n^2q}{e^3Q}\right)$. By continuing this arithmetical process from period to period we can, consequently arrive at the table on p. 838.

As the process continues as set out in the table, the quantities supplied at the beginning of each period determine the prices ruling from the demand side, while at the end of each period the prices so set up determine the quantity supplied. This is a highly important point which cannot be overstressed, and we may stay for a moment to analyse it. In effect, we are assuming that, on the demand side the independent variable is quantity and the dependent variable price; while, on the supply side, the independent variable is price while the dependent variable is quantity. This seems to be the usual procedure. We have already noticed the methods of Walras and Edgeworth in obtain-

¹ Both the elasticity of demand and the elasticity of supply must be regarded throughout this article as "long-period" elasticities; cf. Kaldor, *loc. cit.*, p. 133, note. It may be noticed here that a simple method of presenting these elasticities is to link them to the level of income, so that for every level of income there is a distinct set of elasticities; since we are ruling out income effects in this article, we can, therefore, assume a single set of elasticities.

² Cf. note 1 above.

Fluctuations of Quantities and Prices around an Equilibrium Position

End of period.	Quantity supplied.	End of period.	Demand price.
—	Q	—	P
0	$Q - q$	0	$P\left(1 + \frac{q}{eQ}\right)$
1	$(Q - q)\left(1 + \frac{nq}{eQ}\right)$	1	$P\left(1 + \frac{q}{eQ}\right) \cdot \left(1 - \frac{nq}{e^2Q}\right)$
2	$(Q - q)\left(1 + \frac{nq}{eQ}\right)\left(1 - \frac{n^2q}{e^2Q}\right)$	2	$P\left(1 + \frac{q}{eQ}\right)\left(1 - \frac{nq}{e^2Q}\right)\left(1 + \frac{n^2q}{e^3Q}\right)$
3	$(Q - q)\left(1 + \frac{nq}{eQ}\right)\left(1 - \frac{n^2q}{e^2Q}\right)\left(1 + \frac{n^3q}{e^3Q}\right)$	3	$P\left(1 + \frac{q}{eQ}\right)\left(1 - \frac{nq}{e^2Q}\right)\left(1 + \frac{n^2q}{e^3Q}\right)\left(1 - \frac{n^3q}{e^4Q}\right)$
...		...	
r	$(Q - q)\left(1 + \frac{nq}{eQ}\right) \dots (1 - (-1)^r \cdot \frac{n^r q}{e^r Q})$	r	$P\left(1 + \frac{q}{eQ}\right)\left(1 - \frac{nq}{e^2Q}\right) \dots \left(1 + (-1)^r \cdot \frac{n^r q}{e^{r+1}Q}\right)$

ing the equilibrium point on the market. Both methods avoid our problem of dependence by incorrectly emphasising the principle of mutual determination, a principle which is only valid ONCE THE EQUILIBRIUM HAS BEEN ATTAINED. Marshall, on the other hand, expressly affirms that "the demand price for each unit diminishes with every increase in the amount offered,"¹ and, in its context, this would seem to imply that, on the demand side, Marshall considered the independent variable to be quantity. Unfortunately, no such clear-cut distinction can be found on the supply side.² The late Sir Hubert Henderson, however, seems to favour price as the independent variable on the supply side, for the supply curve best represents "the amount which will be supplied in response to a given price."³

If, on the other hand, these relationships are reversed, so that, on the demand side, the independent variable is price while the dependent variable is quantity, and on the supply side the independent variable is quantity while the dependent variable is price, the equation for the quantity supplied in the r th period, as in the table above, becomes $(Q - q)\left(1 + \frac{eq}{nQ}\right) \dots$

$\left(1 - (-1)^r \cdot \frac{e^r q}{n^r Q}\right)$, for the quantity DEMANDED in the r th period.

Consequently, the conclusions reached under these assumptions are exactly opposite to those reached when the independent variable is quantity on the demand side and price on the supply side. In a static theory the first set of assumptions are probably valid; but in growth economics the dynamic elements in the economy come from the supply side through innovation, and it would, therefore, seem that on the supply side quantity must be regarded as the independent variable.

In the diagrammatic terms of the ordinary supply and demand analysis of the cobweb theorem, the first, static, relationships are represented by a movement from supply curve to demand curve and back to supply curve in a clockwise direction, as is the generally accepted development. On the other hand, the dynamic set of relationships is obtained by an anti-clockwise movement from one curve to the other. It is obvious that, given a pair of supply and demand curves, if a clockwise movement leads to a stable equilibrium, an anti-clockwise movement

¹ *Principles*, 1st Edition, London, 1890, p. 403.

² Cf., however, p. 391, note, where price seems to be considered as the independent variable for BOTH the supply and demand curves.

³ H. Henderson, *Supply and Demand*, London, 1947, pp. 28-9.

will lead to an unstable equilibrium. The results of our analysis are, therefore, consistent with the simpler diagrammatic technique.

Returning to our main analysis, it is obvious that if the market is absorbing the exogenous shock in such a way that equilibrium is again being restored, the quantities supplied in each alternate period will be decreasing if that pair of periods is a maximum, or increasing if that pair of periods is a minimum.¹ In this case, then, the market is originally in a position of stable equilibrium, the fluctuations set up are damped. For unstable equilibrium, when the market is not absorbing the shock in a damped series of fluctuations, the quantities supplied in any alternate pair of periods are increasing if the pair of periods compared is a maximum and decreasing if a minimum. On the other hand, when the quantities supplied in any alternate pair of periods are equal, the market is in neutral equilibrium, so that in one period there is an increase in the quantity supplied, an equal decrease in the next period and an equal increase in the following.²

Let us compare the quantities supplied at the ends of periods $(r-2)$ and (r) , assuming, for the sake of convenience, that r is even.³ In this case we are selecting a minimum pair of periods for comparison. Hence if the quantity supplied at the end of period (r) is less than the quantity at the end of period $(r-2)$ the equilibrium is unstable; if greater, stable; and if equal, neutral. That is, if

$$(Q - q) \left(1 + \frac{nq}{eQ} \right) \dots \left(1 - \frac{n^{(r-2)}q}{e^{(r-2)}Q} \right) \left(1 + \frac{n^{(r-1)}q}{e^{(r-1)}Q} \right) \left(1 - \frac{n^r q}{e^r Q} \right) \leq \\ (Q - q) \left(1 + \frac{nq}{eQ} \right) \dots \left(1 - \frac{n^{(r-2)}q}{e^{(r-2)}Q} \right)$$

then the market is in unstable, neutral or stable equilibrium. This expression reduces to

$$\left(1 + \frac{n^{(r-1)}q}{e^{(r-1)}Q} \right) \left(1 - \frac{n^r q}{e^r Q} \right) \leq 1 \\ \text{or} \quad 1 - \frac{n^r}{e^r} \cdot \frac{q}{Q} + \frac{n^{(r-1)}}{e^{(r-1)}} \cdot \frac{q}{Q} - \frac{n^{(2r-1)}}{e^{(2r-1)}} \cdot \frac{q^2}{Q^2} \leq 1$$

¹ It is obvious that we must compare a period in which the quantity supplied increases (diminishes) with one in which it has also increased (diminished).

² The adoption of this terminology seems preferable to Ezekiel's use of the three terms convergent, divergent and continuous fluctuations. Cf. *loc. cit.*, pp. 429-32.

³ If we assume r odd, the left-hand side of our final inequality becomes $q(n/e - 1)/Q$. But with r odd, as we have seen, this expression must be less than zero for a stable equilibrium, since we would be comparing periods when the quantities supplied are at a maximum. The same conclusions, therefore, would hold for the relations between n and e .

Since $(q^2)/(Q^2)$ must be of a very small order, we may neglect the last term of the left-hand side of this inequality. Our expression then becomes, since ¹ $n^{(r-1)}/e^{(r-1)} \neq 0$,

$$\frac{q}{Q} \left(1 - \frac{n}{e} \right) \leq 0$$

Neglecting the factor q/Q for the moment, we finally arrive at the following limits. If the elasticity of supply is greater than the elasticity of demand the market is in unstable equilibrium, in neutral equilibrium if both elasticities are equal, and in stable equilibrium if the elasticity of supply is less than the elasticity of demand.

It is obvious that if the market is in stable equilibrium, the new position of equilibrium eventually reached will settle where the quantity supplied and demanded is $(Q - q)$, and the price $P(1 + q/eQ)$. On the other hand, it is easy to see that if the disturbance initially consisted of an increase in the quantity supplied $(Q + q)$, this would be the new equilibrium quantity supplied and demanded at the price $P(1 - q/eQ)$. By regarding the elasticities as fixed, rather than the supply and demand curves, we are, therefore, enabled to arrive at a point of equilibrium distinctly different from the initial position. It is obvious that if we consider the supply and demand curves as fixed, the only position of equilibrium in a stable market must be the initial point. It seems more logical, consequently, to analyse the problem in terms of fixed elasticities than on the assumption of unshifting supply and demand curves.²

It must be pointed out here, however, that the elasticity of demand cannot correctly be regarded as a continuous variable. The principle of the "minimum sensible"³ must be taken into account. Consumers will only react to PERCEPTIBLE variations in price, such as are likely to occur in an unstable cobweb cycle; but such reaction, when it does eventually take place, is likely to be fairly violent. Consequently, if the elasticity of supply is large, the elasticity of demand tends to be large as well. We have, therefore, a stability force in an unstable situation. On

¹ If $n/e = 0$, then either n is zero or e approaches infinity. If n is zero there will never be any increase at all in the quantity supplied, and no cycle will be set up. On the other hand, if e approaches infinity prices will range between infinitely large values and zero; we may, therefore, also ignore these cases when e is infinitely large.

² Cf. Kaldor, *loc. cit.*, p. 134.

³ Cf. P. H. Wicksteed, *The Commonsense of Political Economy*, London, 1933, Vol. II, p. 406.

the other hand, if the elasticity of supply is small, the effect of the minimum sensible variation is likely to reduce the elasticity of demand, thus introducing an unstabilising element in a stable situation.

These results, however, subject to the important qualifications which we have stressed, only confirm what we already know. Can our analysis tell us no more? It would be of little use to us if it did not permit us to draw some further conclusions. The

factor $\left(1 + \frac{n^{(r-1)}}{e^{(r-1)}} \cdot \frac{q}{Q}\right) \left(1 - \frac{n^r}{e^r} \cdot \frac{q}{Q}\right)$ provides a simple mathematical indication of the relative size of the quantities of the commodity supplied in comparable periods, and hence of the magnitude of the damping (or anti-damping). We are, therefore, justified in regarding it as a stability factor. Now, no matter what two periods we choose for comparison, the term q/Q will always appear in this stability factor; so the greater q/Q the greater the damping (or anti-damping) if the elasticity of demand is greater than the elasticity of supply (or if the elasticity of demand is less than the elasticity of supply).

The significance of the length of the supply-adjustment-period is now obvious. The longer this period, the greater will be the ensuing increase (or decrease) in the quantity supplied due to any increase (or decrease) in the price offered. In the vast majority of commodities supplied in a competitive market, sellers are able to vary the quantity supplied on the market quickly and, consequently, by small increments. The smaller these supply adjustment increments, the shorter the period. This is virtually a truism, particularly when it is remembered that stocks usually bear the brunt of price changes in the short run rather than the market itself. The presence of economic friction, evidenced by variations in stocks rather than by variations in the amount supplied on the market, therefore, exerts a stabilising influence.¹ The assumption of divisibility of supply output is a general rule in a competitive market; consequently, the quotient q/Q must be of a minute order. It immediately follows that, in the vast majority of cases, even if the elasticity of supply is greater than the elasticity of demand, no unstable or neutral cobweb cycle is likely to be set up.

Our conclusions can be briefly summarised. If the elasticity of supply is greater than the elasticity of demand there is a tendency for the equilibrium of the market to be unstable, and

stable if the elasticity of demand is greater than the elasticity of supply. Yet if the supply of the commodity coming on to the market can be adjusted by small increments, the equilibrium will be stable, even if the elasticity of supply is greater than the elasticity of demand. If, however, the supply coming on to the market cannot be adjusted by small increments and there is little economic friction present, the equilibrium will be unstable if the elasticity of supply is greater than the elasticity of demand, although stable if the elasticity of demand is greater than the elasticity of supply.

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¹ Cf. J. A. Schumpeter, *Business Cycles*, New York, 1939, Vol. I, p. 51.

A NOTE ON PLANT MECHANISATION AND UTILISATION

IN his interesting article in the *ECONOMIC JOURNAL* for March 1953 Mr. Baldamus discusses the relationship between plant size, measured by number of wage-earners, and average horse-power per wage-earner employed, in the light of United States Census of Production data. He has found that in some industries there is a close correlation between certain long-term changes in plant size and the ratio of horse-power to labour in a given year in different sizes of plant. It appears that the average size of plant in an industry may increase over a period of years, in spite of the fact that the larger plants in the industry have a lower horse-power-to-labour ratio than the smaller plants. Because there is a trend towards larger plants, these plants, Mr. Baldamus argues, must be the most profitable, but the reason for this cannot be that they are the most highly mechanised, since mechanisation involves an increasing ratio of horse-power to labour. He concludes therefore that there is another factor at work controlling the size of plant: utilisation, which involves a decreasing ratio of horse-power to labour. This contrast between the effects of mechanisation and utilisation, "or to put it more generally, between technological and organisational changes in methods of production" (p. 66) is, in Mr. Baldamus' view, "decisive for the whole analysis of plant size" (p. 53). It is the purpose of this note to examine the validity of this claim.

Mr. Baldamus distinguishes four theoretical cases, size-increasing mechanisation (type A), size-increasing utilisation (type B), size-reducing mechanisation (type C) and size-reducing utilisation (type D). The primary effect of mechanisation will be a rise in the horse-power-to-labour ratio and a fall in the number of workers (type C), but if the economies gained are great enough, demand will expand, machines will be multiplied and the number of workers will rise above the original level (type A). The primary effect of utilisation will be a rise in the number of workers and a fall in the horse-power-to-labour ratio (type B). It is possible, but difficult, to conceive of type D cases where there is a fall, over a period, both in the number of workers and in the horse-power-to-labour ratio.

Let us examine the concept of "utilisation" a little more closely in the light of these four cases. When Mr. Baldamus

first uses the term (p. 52), he talks of "special methods of plant organisation designed to secure fuller utilisation of existing capital equipment." His main example is a change from single- to multiple-shift working. In this case the size of plant (measured by number of workers) rises, output increases and economies are gained because the overhead costs of equipment are spread over a larger output. This is clearly a type B case. Later in the article (p. 57), Mr. Baldamus gives as another example of improved utilisation a change in organisation from job towards continuous line production, because any step in this direction "means improved utilisation of productive time, space, and equipment." He particularly stresses the fact that continuity of operation of equipment will be entailed. This is regarded as a type B case also, presumably because it is considered that a more intensive use of equipment will involve a rise in the number of workers, even though hours of work are unchanged. When the achievements of motion study are borne in mind, this is in itself a questionable assumption, but there is a broader question that arises at this point. If Mr. Baldamus is concerned with the *general* case of improved organisation, why does he appear to concentrate attention only on cases where equipment is used more intensively? The most general case to consider is that of *any* change in organisation, fixed capital remaining unaltered, which lowers costs of production. It is not at all difficult to conceive of cases of improved organisation, in this sense, which do *not* entail a more intensive use of equipment, but which would be undertaken by business-men because they lower costs. Indeed, a change towards line production from batch production¹ is likely to be a change of this sort.² Such a change is likely to take place when the rate of production of a standardised article has reached, or is expected to reach, sufficient proportions for it to be possible to arrange the machines producing it in sequence, and to keep them in this sequence for an appreciable period of time. Machines which may have been scattered in various parts of the plant will be brought together. One of the greatest savings made possible by the change will be in working capital, but figures of average horse-power per head will not bring this out. Another possible saving will be in the number of workers employed. With line production,

¹ Batch production is likely to be an intermediate stage between job and line production.

² I am indebted to Mr. D. H. Bramley, M.I.Prod.E., A.M.I.Mech.E., head of the Department of Industrial Administration of Birmingham College of Technology, for help in elucidating the technical matters discussed in the section which follows.

the timing of machine operations may be so arranged that one worker can operate more than one machine; with batch production one worker per machine is likely. Where *machines* are concerned, therefore, it by no means follows that a change from batch to line production will involve their being used more intensively: the cycle of operations may be so arranged that they will be idle for longer periods than formerly. The rate of output may not rise. A change from batch to line production of the type envisaged is not therefore likely to involve an increase in maintenance workers. It may involve some increase in the number of specialists, such as planning engineers, but there is no *prima facie* reason to expect that in all cases the increase in the number of specialists will offset the saving in production workers. In any case, many specialists are salary earners and will presumably be excluded from Census figures of wage-earners employed.

Here, then, is a case of improved organisation where the ratio of horse-power to labour *rises*, and the primary effect is a fall in the size of plant (measured by workers). Such a case might be called "size-reducing organisation." In practice it would be indistinguishable, using the indicators employed by Mr. Baldamus, from a case of size-reducing mechanisation (type C). It would differ from it in that it cannot be said to entail a primary rise in horse-power installed. It may, however, lead to a secondary rise in horse-power installed, and in the number of workers, if the economies achieved stimulate demand sufficiently. It would then be indistinguishable in practice from a type A case. Looking at the matter historically, it is interesting to recall that at times an expansion of demand has preceded, rather than followed, a reorganisation of methods of production. In the British motor industry, for example, economies of improved organisation were initially reaped on a large scale only after a particular model of car had proved successful with the public.¹ The rise in demand ensured that a plant organised on flow production lines would be able to sell its output, and the lower costs of such a plant enabled the successful manufacturer to consolidate his position. In this case, therefore, the initial size-reducing effect to be expected from an improvement in organisation of this type did not manifest itself, *i.e.*, type A was not preceded by type C. No doubt there are many parallel cases on the side of mechanisation. To some extent the motor industry is one such case, since there improved organisation and increased mechanisation have gone hand in hand.

¹ v. National Advisory Council for the Motor Manufacturing Industry. *Report on Proceedings*. H.M.S.O. 1947, p. 9, paragraph 9.

Let us turn aside for a moment to consider another matter. In all that has been written so far the size of plant has been measured, as in Mr. Baldamus' article, by the number of wage-earners employed. When Mr. Baldamus considers the consequences of measuring plant size in this way he obtains the apparent paradox that economies resulting from variations in the ratio of capital to labour may be reaped from a smaller plant, measured in terms of workers, whereas "it is usually taken for granted that the economies which result from variations in the ratio of capital to labour are economies of large-scale production" (p. 54). But is there really a paradox here? It might throw light on this question if one re-thinks the matter in terms of the normal criterion of plant size, *i.e.*, quantity produced. It would then appear that type A and type B cases are certainly size-increasing in the output, as well as the labour employed, sense. But is type C necessarily size-increasing in the output sense? With type C the ratio of capital to labour is altered, either by mechanisation, or, on my argument, by improved organisation, but *output* does not necessarily rise, at least in the first instance. Here, then, is a case of an economy which has not resulted from a larger scale of output. It has resulted from an innovation, technological or organisational, which has shifted the cost curve downwards. In the absence of such an innovation, assuming the plant was efficient in the first place, economies could only have been reaped, if at all, by a rise in the scale of output. Innovations, however, do not necessarily rely on an increase in output, nor do they rely on variations in the ratio of capital to labour. They may be capital-saving or labour-saving, or they may be output-increasing, leaving the ratio of the factors unchanged; they may be a combination of all three. It is conceivable that they may entail a lower scale of output, at least in the first instance. But whatever their effect on output, they will, by definition, lower costs.¹ When one measures plant size in the normal way, therefore, it can be seen that the paradox that Mr. Baldamus appears to obtain by using an unusual criterion of plant size is not really a paradox at all. The economies to be gained from innovation are no more bound up with larger output than they are with larger plant size measured in terms of number of workers.

Leaving aside the points raised in the previous paragraph,

¹ v. O. Lange, *Price Flexibility and Employment*, Chapter XII. It is, of course, by no means easy to define terms like "capital-saving" rigorously, but this does not mean that an analysis based on their use may not be helpful in clarifying ideas on this subject.

the argument of this note may be summarised as follows: Mr. Baldamus contends that when the size trend in an industry has been towards that size of plant where the horse-power-to-labour ratio is highest, this has been due to mechanisation. Where the opposite has been the case, this has been due to utilisation. Mr. Baldamus uses "utilisation" synonymously with "improved organisation," but in discussing utilisation he appears to concentrate on cases where machines are worked more intensively. More intensive use of machines is, however, only one possible consequence of improved organisation. Cases of improved organisation may be found where machines are used less intensively and labour more intensively. In these cases improved organisation is associated with a rise in the horse-power-to-labour ratio. If Mr. Baldamus had considered such cases, he would have found that statistical cases of types A and C can be explained by an improvement in organisation as well as by an increase in mechanisation, or by a combination of both of these. One cannot say, *a priori*, which force has predominated.¹

It should be made clear, in conclusion, that the criticisms of Mr. Baldamus' views contained in this note only refer to the contrast he draws between the effects of technological and organisational changes in methods of production. In drawing attention, however, to the importance of considering each of these separately when studying the reasons for changes in plant size, he has performed a valuable service. His very interesting statistical results are not, of course, brought into question by what has been said in this note.

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¹ It is conceivable, one might add, that cases of type B and D may be explained by increased mechanisation as well as by increased utilisation, but this will not be pursued here.

REVIEWS

International Economics. By JACOB VINER. (Glencoe, Illinois: The Free Press (London: Allen & Unwin), 1952. Pp. 381. 40s.)

ELEVEN of these twenty-five studies date from the inter-war years, eight from the false dawn of 1943-45, the rest from the period 1946-49 when the shape of the post-war world, with its cleavage between East and West, had become plain to see. They comprise fruits from most of the many fields which their eminent author has tilled with such distinction for more than thirty years—the pure theory of international trade, the concrete intricacies of commercial policy past and present, the broader problems of the relations between international trade and finance, diplomacy and war. And they provide numerous examples of the careful scholarship, the lucidity of thought and expression, the pugnacity verging sometimes on impishness, which the world of economists has come to associate with his name. For gruelling historical research let the reader turn to No. 3, *International Finance and Balance of Power Diplomacy, 1880-1914*; for hard thinking and hard but courteous hitting to No. 4, a review of the Australian Economists' defence on distributional grounds of the Australian tariff; for delightful and constructive naughtiness to the last essay in the book, which must have been a refreshing incident in the proceedings of a certain Conference on Science, Philosophy and Religion in Their Relation to the Democratic Way of Life.

To review such a collection as a whole is not easy; but its author has tried to lighten the reviewer's task by writing a spirited introduction, in which he takes a shot at the job himself. To paraphrase rather than quote his verdict, he finds in the collection a marked consistency of thought, which some might label as pig-headedness. And he proceeds to explain why in the essays here reprinted little attention is paid to those lines of argument along which the free-trade doctrine which permeates them has been challenged in recent times. Here, then, is a peg on which a second reviewer (who happens to have been the butt of similar charges of unhandiness in sloughing off old skins) may at least find a few remarks to hang.

In the first place, Professor Viner lists the reasons for which he has not been impressed by modern rehabilitations of old doctrines (long, of course, familiar to him) concerning the power of a country

to shift the terms of trade in its own favour by unilateral restrictions. Fundamentally I think he is right; but he exposes a flank by stating his case (p. 11, top) on the assumption that our starting-point is universal free trade. It is one thing to say, "I will not do this, for fear my neighbour should retaliate"; another thing, needing a much higher degree of trustfulness in human nature, to say, "I will desist from doing this, in the hope that my neighbour will reciprocate." Let me add that, over this matter of dismantlement of defences, Professor Viner is much less rigid when it comes to offering counsel than when he is expounding theory. Let those whom this introduction might tempt to regard him as an inflexible perfectionist wait till they have read his carefully reasoned plea (No. 24) for ratification by the United States of that illogical farrago, the abortive I.T.O. Charter.

Secondly, Professor Viner explains that he has both welcomed the increased emphasis placed by neo-Keynesian analysis on the role of income-changes and income elasticity of demand in the adjustment of international trade balances, and regarded it as grossly overdone; but that he had held his peace on both counts till doctrine should have settled down and become less extreme and more eclectic—a process which he believes to be now at work. If this silence was an error, it is one which he has now fully repaired by the coruscating critique of Metzler in the second of his Rio de Janeiro lectures (*International Trade and Economic Development*, pp. 18–29). This is a large subject, and the secondary reviewer must confine himself to two points, one of *dogmengeschichte* and one of substance. (1) Personally I feel that Professor Viner does, if anything, more than justice to the part played by the neo-Keynesians in seeing justice done to income as an equilibrating factor. To one less learned than himself in the Classics, and prone therefore to take his ideas about the working of the gold standard from such a comparatively recent source as the Interim Report of the Cunliffe Committee (1918), with its clear emphasis on the effect of gold movements on what is now called "effective demand" and even on employment, there was nothing very exciting about the arrival of the sacred cow labelled National Income to graze in these pastures. (2) On the other hand, there is an important matter on which, I think, Professor Viner has not shed much light either in these essays or elsewhere. Granted that a place is to be found for the classical monetary mechanism in the adjustment of international balance, and granted that it is the duty of a deficit country to submit to a certain amount of deflationary discipline accordingly, what about

the conflict of duties with which a *surplus* country is confronted in a generally expansionary conjuncture? The late deeply lamented Emanuel Goldenweiser had no doubt about the answer to this question. "Credit easing as a part of international co-operation has not proved successful, certainly for a country like the United States. . . . Simple action for specific domestic objectives is the right course for American monetary authorities to pursue" (*American Monetary Policy*, p. 246). If that is the settled view of the Federal Reserve Authorities, and I am not saying it is a wrong view, there would seem to be an important bar, which can scarcely be ascribed to Keynesian or socialistic influences, to the effective operation of the classical mechanism in the modern world.

I must allude only briefly to the third charge levelled by Reviewer Viner against Essayist Viner—that he has had little to say about the role of exchange-rate flexibility in the establishment of international equilibrium. This gap also Visiting Professor Viner of Rio has subsequently attempted to fill—with what success it falls outside my purview to appraise. Let an allegedly pig-headed pot, having expressed his general sympathy with and admiration for an allegedly obscurantist kettle, rather exercise his proverbial privilege by seeing if he can discover a few more gaps in the kettle's armour-plating.

I think I would venture to say that the greatest danger to which Professor Viner's devotion to classical models exposes him is a certain resistance to allowing his profound knowledge of the actual shape of the contemporary world to interfere sufficiently with trains of thought conceived in terms of abstract "countries" A, B, C and D. I have given one instance of this above in connection with gold flows; let me hazard two more. (1) Professor Viner castigates America's errors of commercial policy, and the instability of her economic life, with a caustic freedom which few Englishmen would care to emulate. But does he say enough about the things which she cannot help—being so large, making such rapid strides compared with the rest of us in productivity, and strides of a kind which Professor Hicks (*Oxford Economic Papers*, June 1953) giving a formal shape to ideas which Mrs. Honor Croome (*Lloyds Bank Review*, July 1950) insinuated into our minds some years ago, has lately taught us to describe as *import-biased*? Surely it is best to admit that there is a specific *dollar*-problem, the vehicle of persistent or at least recurrent pressures on Britain and some other nations, and not completely soluble by some once-for-all act of

adjustment, classical or non-classical. Which is not to say that it is soluble by gang-warfare, or by cutting off one's nose to spite one's face! (2) In the classical (or Hullan) world the "countries" A, B, C, etc., are clear-cut political and economic entities. Some of them, it is true, have acquired a tail of colonies, which is *prima facie* a naughty thing to have done but can be palliated by a policy of the open door. Now to the Briton, never quite sure of the name of his own country, and used now to waking up to find that a colony has become a Dominion and a Dominion has become something else, this seems an unduly simplified picture of the political structure of the world; and so, since O.E.E.C. was called into being by American charity, it will to many Western Europeans. There is still, I think, an absolutist or theological flavour about Professor Viner's discussions of discrimination and its opposite which strikes a certain chill. But here again his advisory bite is less damaging than his doctrinal bark; and there is much practical wisdom in his counsel to his fellow-countrymen on these matters (No. 17, *The American Interest in the Colonial Problem*) for which a British reader may be sincerely grateful.

It is not easy to catch Professor Viner out on matters of scholarship, but I *think* there is a slip in the third line of Table III in his anti-Manoilescu demonstration (p. 122), and I am sure that he has invented the territorial expansion achieved by a British *East Africa Company* (p. 218).

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ERRATUM

We insert the following at the request of Professor Sir D. H. Robertson:

Too late to correct it, I discovered a gross blunder in my review, on p. 852, of Professor Viner's *International Economics*. I thought "*British East Africa Company*" (p. 218 of his book) was a slip for the better known *British South Africa Company*. But there *was* a *British East Africa Company*, and I ought to have known it — or taken the trouble to discover it. I tender my humble apologies to Professor Viner and to the readers of the *Journal*.

D. H. R.

Wesley Clair Mitchell: The Economic Scientist. Edited by ARTHUR F. BURNS. (New York: National Bureau of Economic Research, 1952. Pp. viii + 379. \$4.)

What Happens during Business Cycles: A Progress Report. By WESLEY C. MITCHELL with an Introduction by ARTHUR F. BURNS. (New York: National Bureau of Economic Research, 1951. Pp. xxxi + 386. \$5.)

"HERE was a man who had the courage to say, unlike the rest of us, that he had not all the answers; who went about his task without either haste or rest; who did not care to march along with flags and brass bands; who was full of sympathy with mankind's fate, yet kept aloof from the market place; who taught us, by example and not by phrase, what a scholar should be."

The whole of Wesley Mitchell is in these closing words of Schumpeter to the memorial volume edited by Arthur Burns and published by the National Bureau of Economic Research in honour of its chief founder and late Director. Lucy Sprague Mitchell gives us the perfect account of the man in the making; and leading aspects of his thought and work are analysed by various colleagues. Most of the papers originally appeared between 1928 and 1951 in different journals. It cannot have been easy to select from all that has been written about Wesley Mitchell those contributions which best bring out the man. Inevitably there is over-lap in statements of fact and of ideas; but these serve only to accent the singleness of purpose and conduct which characterised Wesley Mitchell in all he undertook. The editor in his introductory sketch makes clear how diverse were the calls upon his time and energies, yet how, throughout, he stood like a rock from the coast of Maine whence his forbears sprang. The volume includes a bibliography of published work, arranged in chronological order, which bears witness to his self-discipline, and to his friendly genius in guiding and collaborating with others engaged in developing that organon of knowledge relating to business cycles which owed its conception to him.

What Happens during Business Cycles: A Progress Report, published after his death, is Wesley Mitchell's own summary of the methods employed and results obtained in the course of the National Bureau's vast statistical investigations of the behaviour of time series indicative of particular elements of business activity—some 800 monthly or quarterly series for the United States, supplemented by half as many again on an annual basis drawn from British, French and German as well as American sources. When, long ago, during an evening spent with Wesley Mitchell whilst he was visiting Professor at Oxford, I protested that such labours must soon begin to yield rapidly diminishing returns, he shook his head and, with his always disarming smile, maintained that you could never be sure of what you were talking about until you had examined all of the available evidence. The emphasis of the inquiry was upon finding out the full complexity of the problems covered by the generic name, Business Cycles.

The mass of data, compiled and sifted with authority, yielded patterns of "reference cycles" and measures of "stage-by-stage conformity" in a derived setting of secular and intra-cycle trends. The presumptions involved in the technique, and the methods employed for distinguishing the significant from the random in the results, are set out with meticulous care.

Mitchell's distrust of macro-economic concepts as conveying a false sense of homogeneity and masking the true cross currents of economic behaviour is confirmed, to his mind, by the striking consensus of movement of the "comprehensive series" compared with the behaviour of the other series. It is in the characteristic disparities of movement of the multitude of specific series that it is possible to discern "how an economic system of interrelated parts develops internal stresses during expansions, stresses that bring on recessions, and how the uneven contractions of its varied parts pave the way for revivals."

The evidence indeed strongly supports this view of the inherently regenerative and degenerative forces at work in private-enterprise economies, forces of a nature that would still constitute obstinate facts in economies where the State might exert more sway. In detail the evidence is such as to suggest more numerous and more complex multipliers, more diverse operations of the acceleration principle, more constraints in the exercise of liquidity preference and a more involved lattice of responses such as are implied in the cobweb theorem, than the forms and parameters sometimes assigned to functions of the kind on the basis of a few theoretical postulates. Mitchell, himself a Fellow and sometime President of the Econometric Society, remained unconvinced of the fruitfulness of attempting to cast our fuzzy notions into such formal structures, but, if such attempts are to be made, it was his conviction that they had better start from close empirical acquaintance with the data and be tested against the full weight of it. There is one all-pervading suggestion carried by the evidence which may perhaps be selected for mention, namely the essential irreversibility in time of major features in the manifold of fluctuation which must limit the contours of economic growth and decay. Thus, for example, certain asymmetries exhibited by indexes relating to production and efficiency recall the importance of Marshall's original contention that increasing returns can reverse course only by a different path at higher levels; or, again, certain asymmetries exhibited by indexes relating to income and consumption draw attention to the strength of connections analogous to that which Duesenberry describes as the "ratchet effect" of standards of living once achieved.

Wesley Mitchell did not live to write the concluding four Parts of the seven which he designed to complete the volume. At one point he speaks of having "flushed a rather terrifying list of theoretical problems," a list which represents only an instance of his fundamental appreciation of the theoretical issues raised at

each several point and reserved for systematic treatment in the later Parts which were to follow. It is left for those who come after to carry the analysis further, in the spirit of realism of this *Progress Report* which is Wesley Mitchell's testament to economic science.

M. T. HOLLOND

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Money, Trade and Economic Growth. In Honor of John Henry Williams. (New York: The Macmillan Company, 1951. Pp. xi + 343. 37s. 6d.)

No ONE familiar with the work and personality of John Williams could fail to be pleased with the appearance of this testimonial volume, whose contents reflect both the wide range of Professor Williams's interests and the shrewd and undogmatic empirical sense which characterises his teaching and writing. His students and friends have given him the finest of tributes, a practical demonstration of the strength of his influence on their own work.

The contributions are divided into three sections, corresponding to Professor Williams's main fields of interest. Section I is concerned with international organisation and trade. Professor Wright argues that intergovernmental trade requires amendment but not replacement of traditional trade theory, and concludes that it is unlikely to secure the superior welfare results often claimed for it. Professor Wallich contributes a thoughtful survey of the working of the international monetary mechanism in underdeveloped countries. Professor Triffin, sketching the post-war development of intra-European monetary arrangements, presents very clearly the theoretical and practical background of E.P.U.; significantly, perhaps, he scarcely mentions the difficulties raised for a multilateral system by divergent domestic policies among its members, nor does he discuss how far it is desirable to promote intra-European balancing of payments. These two issues emerge in the next two papers, on the problem of European integration. Professor Kindleberger underlines the ambiguity of the concept, and stresses "the meaninglessness of European integration, apart from the concept of the integration of Europe into the world economy"—a view which he supports by analysis of contemporary integration schemes; his own proposals are

summarised as "discrimination to enlarge trade." Professor Mikesell examines the limitations on and possibilities of economic integration of sovereign states, with special reference to Western Europe; while he rather begs the question (posed by Professor Kindleberger) by defining integration as arrangements designed to produce the same resource allocation as unification, his argument is sufficiently general and tentative to avert the implied criticism; and his emphasis on the problem of factor mobility is distinctive. M. Gutt concludes the section with a paper on policies to make devaluation effective, in which he argues that under inflationary conditions it is not devaluation but the subsequent deflationary policies on which improvement in the balance of payments depends.

Section 2 is devoted to the determination of domestic economic activity. Professor Fellner discusses the capital-output ratio, concluding that while it does not provide a theory of disequilibrium, it does emphasise important difficulties in adjustment processes; this argument would have been improved by some recognition of the ambiguities inherent in the long-run concept of capital. Professor Tobin contributes a statistical test of the relative-income and absolute-income theories of the consumption function (indicating the superior explanatory power of the latter), which is a masterpiece of applied economic method. Professor Samuelson, describing himself as a neo-classic, attacks the trend towards the formulation of rules-of-thumb for fiscal policy with his usual *élan* and cogency. Professor Mason argues that while the proper price-cost-profit structure is essential to economic stability, we have no valid theory of the relation between the two; his conclusion that price stability probably requires the absence of a full-employment guarantee and resistance to pressure groups is supported by some interesting empirical arguments.

Section 3 deals with monetary theory and central banking. Professor Robertson tidies up some subtle points in the classical theory of interest, and elaborates some earlier criticisms of Keynesian interest theory. Dr. Goldenweiser comments acidly on "monetary semantics"—the use in economic analysis of common and emotive words such as "spending"; his remarks are perhaps a trifle naïve, in view of the ideological objectives of the Keynesian theory from which the usage springs, and his attack on the word "propensity" misses the main point (that so-called "propensities" generally describe aggregative institutionally determined behaviour); but the subject is an important one which deserves further discussion. Dr. Musgrave carries the modern

trend towards an assets-approach to monetary theory a stage farther by constructing a sectorised model of asset-holding and asset-valuation which brings out very clearly both the opportunities for monetary policy to work by influencing market expectations and the scope for monetary policy to be conducted by Treasury debt operations; his paper is the theoretical counterpart of the concluding papers by Messrs. Rosa and Sproul. Professor Dupriez presents a statistical and institutional refutation of Cassel's explanation of long-run price trends by changes in gold supply; his own explanation, which stresses central banking policy, is interesting but leaves a number of factual doubts unresolved. Professor Ellis, in a paper which begins better than it ends, discusses the rediscovery of money; his analysis of the elements in Keynesian theory which distract attention from monetary factors is penetrating, and his arguments for monetary policy reasonable; but it does seem rather extravagant to hail the Douglas Report as a "*Magna Charta* for modern monetary policy" (unless the historical analogy is taken literally?) and to assert flatly that "the cost of inflation is depression" and bring in the Communist menace in support of monetary policy.

Mr. Rosa's contribution is a brilliant essay in the art of central banking, which will probably become a standard reference; with a wealth of technical illustration he shows how the growth of the public debt has given the Federal Reserve the power to produce a strong impact on the credit situation by small changes in interest rates, through influencing the liquidity preferences of lenders. The effect, however, seems to depend on the generation of divergent expectations among lenders and borrowers (Professor Robertson has dubbed it "the Rosa paradox") and may prove only a short-run affair. Mr. Sproul concludes the book with a companion piece sketching the evolution of American central banking concepts since 1939 towards the "modest approach" whose rationale is discussed by Mr. Rosa.

Altogether, the papers collected in this volume maintain a very high standard. Some of them are inevitably dated by their concern with the immediate practical problems of their time of writing (early 1950), but they remain worth reading for their insights—a characteristic which they share with the works of the man in whose honour they were written.

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The Growth and Fluctuation of the British Economy, 1790-1850.

By ARTHUR D. GAYER, W. W. ROSTOW and ANNA JACOBSON SCHWARTZ, with the assistance of ISAIAH FRANK. (Oxford: Clarendon Press, 1953. Pp. xxxvi + 1028. 84s.)

IN economic history, as in other branches of knowledge, the student has the double task of discovering new information and interpreting that which is already known. Until quite recently our knowledge of the late eighteenth and early nineteenth centuries was so slight that emphasis had perforce to be placed on the first of these duties. Now, the success attained by specialised studies has created both the need for a broader interpretation and the opportunity for using the methods of economic analysis for the purpose. The present volumes certainly form one of the most solid and useful exercises in the interpretation of history by means of economic analysis that have yet appeared.

The raw material consists of some two hundred statistical series covering production, investment, foreign trade, money and finance, prices, wages and consumption. A new price index has been compiled from the information originally collected by Professor Silberling. A number of commodities are included which were (for various reasons) left out of the original Silberling index, the weighting is somewhat different, and prices are inclusive of duty. There is also a new index of share prices compiled from quotations in Wetenhall's *Course of the Exchange*. The other figures are all from fairly well-known sources, and they reflect the strength and weakness of our information. The financial statistics and those of foreign trade are the fullest, and probably the most reliable. The large body of information on prices is dominated by the prices of imports and agricultural products, and information about the prices of domestic manufactures is still sparse. Direct estimates of production are available for bricks (the Shannon index), ships and a number of articles subject to excise duties. For the rest, production has to be inferred from imports of raw materials, a procedure which is likely to give a reliable guide to secular trend, but which has obvious dangers in dealing with fluctuations. Figures for wages and investment are scanty, and those for employment and national income, non-existent. Improvements in these directions will have to wait upon further factual research.

In view of these limitations, it is obvious that many of the questions which would be posed by a modern trade-cycle theorist cannot be answered. Nevertheless, the authors are able to go a surprisingly long way by the systematic analysis of the limited

range of material available. The method of analysis is that evolved by the National Bureau of Economic Research. Each series is divided into a number of "specific cycles," which can be compared with "reference cycles," established after consideration of the evidence as a whole. Each cycle is then subdivided into a number of periods, and the value of each series in any period is expressed as a percentage of the average for the cycle (giving "specific cycle relatives" and "reference cycle relatives"). In this way different series can be compared with one another with regard to the timing and amplitude of their fluctuations, and tested for conformity with the general pattern of the "reference cycle."

This procedure gives fourteen cycles between 1790 and 1850. Seven of them (with peaks in 1792, 1800, 1810, 1818, 1825, 1836 and 1845) are generally recognised, though there is room for slight differences of opinion on the timing of the turning points. The other seven (with peaks in 1796, 1802, 1806, 1815, 1828, 1831 and 1839) are less familiar. These "minor cycles," as the authors call them, appear strongly in the export figures, and usually also in the statistics of prices and of money, but there is little trace of them in the slender evidence which we have about domestic investment. Moreover, the fluctuations differ considerably from one another in their intensity and duration, so much so that one wonders whether they are really best treated as cycles rather than as random fluctuations in the course of the longer cycles. Unfortunately, it is almost impossible to judge the effect of choosing a different cyclical pattern, especially as we are usually given only cycle relatives and not "raw" figures.

The presentation of such a large mass of statistics is a difficult problem, and the authors' solution is not an altogether happy one. They begin with a long historical review, dividing the period into a number of sections, each a few years in length, and combining the statistical material with qualitative evidence of varying reliability. I must confess that I found this section very difficult reading. It is followed by a description of the new index numbers and then, in the second volume, by a general analysis and a long section on statistical methods. The general analysis (the work of Dr. Rostow) is by far the most readable and stimulating part of the book. Handling his evidence in masterly fashion, Dr. Rostow first presents a tentative theory of the trade cycle and then discusses the secular trends of the period, with special reference to the "long wave," or "Kondratieff cycle." In general I found the argument of this section very convincing, though I wonder if rather too much emphasis has not been placed

on foreign trade. In view of the importance both of the French wars and of the purely domestic sector of the economy, such statements as, "The controlling element in the growth and fluctuations of the British economy from 1790 to 1815 was its foreign trade," seem a little exaggerated.

E. VICTOR MORGAN

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The Development of Economic Thought. Great Economists in Perspective. Edited by H. W. SPIEGEL. (New York: John Wiley & Sons (London: Chapman & Hall), 1952. Pp. vii + 811. 52s.)

In this book Professor Spiegel has collected together over forty essays or extracts from longer works, each written (if we ignore the extract from Aristotle's *Politics* with which the book opens) by some prominent economist or economic historian, and each dealing with the work of some famous economist or, in a few cases, with some notable aspect of economic thought. With the solitary exception of Pigou, all the writers studied belong to the mighty dead; but economic literature from Plato to Pigou is an ample enough field of study, even although five-sixths of the book is devoted to economic thought since Adam Smith.

Numerous nationalities are represented, and no school is neglected. An astonishing galaxy of talent is thus brought to the attention of the reader, from Cantillon to Keynes, Bastiat to Böhm-Bawerk, Ricardo to Roscher, Marx to Marshall. The only notable absentee is List—surely a more interesting economist than Owen or the Webbs, who are included. Most of the studies have previously appeared in English, but eight are translated for the first time: these are the essays by Einaudi on Galiani, Marx on the Physiocrats, Halévy on Sismondi, Schmoller on Roscher, Walras on Gossen, Hayek on Menger, Schumpeter on Böhm-Bawerk and Demaria on Pareto. In addition, there are three studies which have never appeared in print before: those by J. M. Clark on J. B. Clark, Frisch on Wicksell and Colin Clark on Pigou. (This last contains the erroneous statement that Pigou read mathematics as an undergraduate; he read history and moral sciences.) It would be absurd to try to decide which of all these studies are "the best"; almost all of them are good, and many of them are very good indeed. But it seems a fairly safe guess that the essays by Demaria on Pareto and Frisch on Wicksell will excite the keenest interest: the latter a mathematical formulation of Wicksell's leading ideas, especially those connected with the

rate of interest and the theory of erratic shocks; the former a suggestive if somewhat oracular appraisal of the whole of Pareto's work, relating his economic writings to those of Walras and others on the one hand and to his own sociological ideas on the other.

There are two aspects of economic study which this book brings out particularly clearly. The first is its range and complexity. There is no question here of a single author imposing uniformity upon a diverse subject. Professor Spiegel, it is true, arranges his economists into six categories—institutionalists, marginalists and so on. But this device seems to underline differences almost as much as it emphasises similarities. Thus we find Mitchell, "a mind bent on large generalisations" (p. 421), devouring data on the grandiose scale of a whale absorbing plankton, and yet classed along with Veblen, who believed that economics was "necessarily an inquiry into . . . a scheme of institutions" (p. 389) and who probably, one feels, never seriously studied a column of statistics in his life. Similarly, among the "Socialists and Reformers," Marx rubs shoulders with Henry George and Sismondi, while the "Moderns" include both Keynes and Marshall, Edgeworth and Schumpeter. The diversity, not only of method, but of aims and of interests is extraordinary—and disturbing. Only the marginalists have that unity of purpose and agreed approach which is the true hallmark of a "school" and produces what is undeniably an organised body of knowledge; for the rest, each author seems to go his own way, and it is hard to see what they have in common until resort is had to a comparison with those medieval thinkers whose assumptions, Professor Tawney tells us, were two: "that economic interests are subordinate to the real business of life, which is salvation, and that economic conduct is one aspect of personal conduct, upon which . . . the rules of morality are binding" (p. 17). Set against this, there is a family similarity among all economists since the mercantilists, and the basis of that similarity is the philosophical writing of Descartes, Locke, the moral sense school, and Bentham.

Secondly, the book as a whole continually raises questions of methodology, either explicitly or implicitly. There is a good deal to be said for the view that this is a rather tiresome subject, upon which very few indeed are entitled to speak with authority or to be heard with respect. But a good deal of the value of studying economic thought probably lies in this field. Earlier writers may have reached erroneous conclusions or have over-emphasised certain ideas; but their assumptions, their purposes, the possibilities which they uncovered or deliberately neglected—these are

perpetually rewarding of study. It is here that a *development* of thought is most easily traced. For two centuries economic writing has been moving towards ever increased exactitude. Ricardo and von Thünen gave precision to the accomplishments of the eighteenth century and developed basic ideas in a systematic way. But their successors allowed economic theory to ossify, and the reaction to this was the development of the German historical school under the influence of Wilhelm Dilthey. When theoretical economics was revived by Jevons, Menger and Walras, the major methodological division of the nineteenth century, that between "German historicism" and "Austrian marginalism," appeared. This is no longer a live issue, for few would now suggest, in the words of Mill, that history can prove political truths. But Professor Spiegel's book suggests that the old division of opinion is liable to reappear in a new form. For there seem to be two methods by which economics is now aiming to purify itself of vagueness and inexactitude. These might be called, for brevity, the deepening and the widening method. The first, admirably represented by Professor Frisch's mathematical synthesis of Wicksell's main theories, requires a rigorous—in the last resort a mathematical—statement of the conditions of any economic problem, followed by the use of mathematics for its solution. Elements not susceptible of mathematical treatment tend either to be regarded as constants or to be excluded from consideration altogether. Along these lines economics cannot fail to become an exact science. The question is only whether it could remain a useful one. The alternative method, outlined by Demaria in his article on Pareto, is to develop a sociological framework within which is set a pure but appropriate economic theory. In the writings of Pareto, says Demaria :

"The equilibrium of economic quantities, in its most general aspects, is interpreted as a historical phenomenon, which is not exclusively economic but political and sociological as well, based, in other words, on meta-economic judgments. From this it follows that the deductive discipline of economics requires postulates and value scales of economic as well as sociological character, and that these in turn need to be supplemented, with the help of the method of successive approximation, by research of the empirical, inductive, statistical, and historical variety. The old-line economic theorists, for the sake of clear exposition and coherent interpretation, had neglected the development of sociological categories designed to interpret the reality of economic life. It does not suffice, in fact, to speak intuitively of legal institutions, moral beliefs, and sentiments, which dominate the various social

spheres, and to say that all this is closely related to the hedonistic springs of action. In order to avoid a uniform and undifferentiated interpretation, it is also necessary to establish a classificatory scheme which embraces these matters. The empirical concepts of history and the no less inductive concepts of the old science of politics must be segregated and then re-aligned in coherent units. Only in this manner can the complete truth be revealed" (p. 630).

Whether it is possible to carry through such a programme remains to be seen. Whether the result would be "scientific" in the most superficial but the commonest sense of that much-abused word must also be a matter of doubt. But no one—certainly no one who reads Demaria's article—will question that it is a programme of extraordinary interest and importance. It is the type of programme of which Schumpeter, certainly, would have approved.

The Development of Economic Thought is a large book, and only specialists will wish to read it in its entirety. It is, however, a not unfitting tribute to the achievement of some of the scholars whose work is assessed within its pages, and the reader cannot fail to be impressed—even if he is also a little daunted!—by the stature of some of the great economists of the past. There is something here to stimulate the interest of everyone. Professor Spiegel is to be congratulated on having devised a new approach to what sometimes seems a rather threadbare subject.

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Readings in Price Theory. Edited by G. J. STIGLER and K. E. BOULDING. (Chicago: R. D. Irwin for the American Economic Association, 1952. Pp. v + 568. 56s.) (English edition: Allen & Unwin, 30s.)

THIS ninth volume in the series of Readings published by the American Economic Association contains a selection of twenty-five articles on the bases and mechanics of the pricing process, drawn from the periodical literature of the last forty years. All the articles, with the exception of Slutsky's "On the Theory of the Budget of the Consumer" and Viner's "Cost Curves and Supply Curves," are reprinted from British and American journals, seven coming from the ECONOMIC JOURNAL and five from *Economica*. The selected articles are grouped in seven sections, which are entitled respectively: Utility and Demand; Costs and Returns; Stocks in the Theory of Prices; The Rationale of the Firm; Imperfect Competition; Spatial Competition, and Theory of Games. It would be too tedious to catalogue the articles which

are included in each section, and it would be invidious to select particular articles for special mention, for all of them illustrate important steps in the development or elaboration of the theory of price. The editors resolved to exclude all articles which were more in the nature of applied economics or which dealt principally with welfare economics, though some of the articles reprinted in Section II have, at the least, a welfare aura if not a welfare bias. In selecting the articles, they were influenced "not only by merit but also by relative availability," for the book is intended "as an adjunct to, rather than as a complete substitute for, the literature which is generally available in libraries."

It is ungracious to carp at so admirable a selection—especially after the disarming admission by the editors that "it is not unusual for the contents of a book to be influenced by the particular men who fashion it"—but one cannot avoid some minor criticisms of their choice. The article by the late Professor Slutsky, that has been honoured in innumerable footnotes, has so far been wholly inaccessible to the majority of students. Despite the appearance of this translation, it is likely to remain so for me, for it is highly mathematical. One cannot help feeling that from the point of view of many economists and of most of their students, a reprint of the article by Professors Allen and Hicks would have been more welcome. It is perhaps a pity that the distinction between "theoretical" and "applied" articles has been drawn so finely as to exclude R. A. Gordon's admirable: "Short Period Price Determination."

The literature on price theory is vast, and practical considerations of price must necessarily limit the size of any selection. Consequently, many topics are not represented. To mention these, however, is not to criticise the editors' choice, but rather to register a plea for a supplementary or companion volume. In the section on Imperfect Competition, oligopoly theory is represented by two articles on the Kinky Demand Curve and the analogical article by Rothschild. On this subject, a translation of Bertrand (though this precedes the period from which the articles were collected), and some treatment of the theory of cartel formation (perhaps as in J. S. Bain's "Output Quotas in Imperfect Cartels") would be welcome. In this volume there are no articles dealing primarily with the pricing process in a dynamic context, nor with the uncertainties that inevitably attend it, though one feels that A. A. Alchian on "Uncertainty, Evolution and Economic Theory" might be suitable in this connection. There are no articles on advertising and its relations

to the pricing decision. Most of the articles included relate mainly to the single-plant, single-product firm: there is no treatment of the problems of the multiple-plant enterprise or of the pricing decisions where there are several products. Lastly, one feels that the inclusion of Hayek on "The Meaning of Competition" would have helped to give perspective.

However, as was pointed out earlier, these suggestions are in no way intended to detract from the usefulness of the present volume: they are merely indications of how it might usefully be supplemented. Professors Boulding and Stigler are to be congratulated for making this invaluable addition to the library of all serious students of economics. This volume is certainly one of the best in the series.

At the end of the book there is an excellent classified bibliography of articles on Price Theory taken from the general professional periodicals published in English during the period 1920-49. This is supplemented by shorter bibliographies of articles in French, German, Italian and Swedish.

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- Economics.* By B. W. KNIGHT and L. G. HINES. (New York: Alfred A. Knopf, 1952. Pp. vi + 917. \$5.75.)
- Introduction to Economics.* By T. MORGAN. (New York: Prentice Hall, 1952. Pp. vii + 857. \$5.)
- Fundamentals of Economics.* By M. H. UMBREIT, E. F. HUNT and C. V. KINTER. (London: McGraw-Hill Book Co., 1952. Pp. v + 506. 42s. 6d.)
- General Economics: An Introduction.* By A. M. SIEVERS. (Chicago: Lippincott, 1952. Pp. xvii + 812. \$5.50.)
- An Introduction to Political Economy.* By V. W. BLADEN. Revised and edited by ALISON KEMP. (Toronto: University of Toronto Press, 1951 (London: Geoffrey Cumberlege, 1952). Pp. viii + 303. 30s.)
- Man, Money and Goods.* By J. S. GAMBS. (New York: Columbia University Press (London: Geoffrey Cumberlege), 1952. Pp. vii + 339. 24s.)
- Fundamentals of Economics.* Edited by J. K. MEHTA. (Allahabad: Pothishala, Ltd., 1949. Pp. 806. Rs. 12/8.)
- A Textbook of Economic Theory.* By A. W. STONIER and D. C. HAGUE. (London: Longmans, 1953. Pp. v + 501. 25s.)

IF there is one activity in which perfect competition seems to prevail it is the production of elementary principles of economics.

Almost every year sees a number of most promising new entrants into the industry. At the end of ten years it is surprising how few of them have established themselves, however good the material they contain. A very large proportion come from the United States. Many of them are excellent, in the sense that their accuracy in detail is almost impeccable; that the thought given to presentation is obvious; that they are on the whole well adapted to the actual teaching needs of their country of origin. If they have a collective fault, from the point of view of teaching in the United Kingdom, I would say that, quite apart from questions of the desirability of using a text which depends mainly on foreign illustrations and examples, they are on the large side for a first introduction and are too anxious to be self-sufficient; that they seek to reproduce what is best read in the original works and do not steer a beginner towards these original sources of thought, even when they are within the compass of the student.

Of the present crop, may I take first the volume by Professors Knight and Hines. It is a large and very thorough text which covers pretty well the whole field. Money and banking are treated rather briefly and at a very elementary level; the value of money is discussed in a later section, with the quantity theory in Fisher and Cambridge forms and the savings-investment approach all set out on the counter for the customer to choose from according to taste. The main weight is in the earlier sections. Here the arrangement is interesting. The first five chapters, forming a general introduction, deal with the basic concepts and principles, with emphasis on the advantages and limitations of specialisation and on forms of organisation. The next seven chapters cover the framework of the economy, including not only the factors of production but also money and banking. In Chapter 13 we reach the national income, its measurement and determination, fluctuations and their causes, fiscal policy and stabilisation. It is only in Chapter 19 that we come to particular products and the determination of their output and prices, first in a competitive and then in a monopolistic market. This group of seven chapters is followed by a further five chapters on functional distribution—wages in free and monopolistic markets, rents, interest, profits. The remaining third of the book is devoted to more applied discussions of monopolies, agricultural policy, social security, taxation, international economics and socialism—democratic in the United Kingdom and autocratic in Russia. It is a solid and competent piece of work. It notably escapes the nursery-governess techniques of exposition to the near-

moron mind. It includes a great deal of the techniques of thinking developed in the past twenty years. In that sense the authors are always prepared to exploit what they think good in what is new. But they rather carefully avoid the temptation to re-write the whole of economics in terms of a single new idea, and aim to hold a balance between different schools and different approaches.

Professor Morgan is in this respect a little more venturesome. He deliberately departs from the traditional pattern in making the twin centres of his book economic growth and rising productivity on the one hand, and the factors that influence unemployment and over-employment, leading to inflation, on the other. Rather curiously, considering that this is his emphasis, he reverses the pattern set by Professors Knight and Hines. He starts, as they do, with basic concepts, including the scale, location and organisation of production and the functions of money. But he goes next to the theories of value and distribution, and comes only at p. 441 to national income, its fluctuations and their causes. Final sections deal with international economics and with economic systems. This book is, at points, more original than the other, but is written at a slightly more elementary level. Like the other, it contains much of the new economics as well as of the old. But the techniques are in the main the familiar ones. While the problems of growth and innovation recur, they have not really modified the approach to the theory of value, which is still essentially based on the methods of comparative statics. My impression of this book is that it contains various ideas which may be valuable to a lecturer thinking out his own presentation. But I doubt whether it is the perfect elementary book for an English class, as distinct from an American.

The Fundamentals of Economics, by Messrs. Umbreit, Hunt and Kinter, is now in its second edition; it has a companion volume called *Modern Economic Problems*, reviewed in this JOURNAL in June 1952. It is on a shorter and more manageable scale than the two that I have already discussed, and in my view gains from it. It covers, on the other hand, somewhat less ground. Its main emphasis is on value and distribution; but it includes a group of six chapters that deal with money, banking, price levels, national income and employment. These problems are presented before those of the determination of particular prices. A short final section covers international economic relations. The book also contains suggestions for further reading, and is not so dogmatically self-sufficient as are the others, but it is

surprising to find most of the suggestions taking the form of a direction to other popular texts rather than to original authorities. This, like the others, is a competent and thorough piece of work, concerned mainly with principles, leaving the author to study any applications in the companion work. It is addressed to the serious student, and successfully avoids the pitfall of talking down to the reader.

Professor Sievers book is rather more designed to make the theory grow out of the practice and to prevent schizophrenia between theory and application. He begins with the essentials of a modern industrial economy—the world of complicated technologies, high divisions of labour and heavy reliance on indirect and capital-using methods of production, as illustrated by an automobile or a loaf of bread. He goes on to the existing structure of the American economy, with its resources of materials and of financial and business organisation. This leads on to the national income and to America's economic relations with the outside world. In Book Two he comes to economic systems, first in principle and then in practice, with descriptions of the particular systems of various countries. It is only in Book Three, at p. 389, that we reach the techniques and tools of economic analysis, leading on to equilibrium theory. This is handled, briefly but competently in five short chapters, covering about one hundred pages, which deal with utility and demand, with short- and long-run supply, with equilibrium in competitive and imperfect markets and with the rewards of factors of production. There follows a section of about seventy pages on macro-economics and dynamics, covering employment theory, the trade cycle and monetary-cum-fiscal policy. A final Book deals with broader problems of applied economic policy, welfare economics, labour problems, government control and intervention, with a final glimpse at the problems of progress. Once again, this book represents a serious and competent attempt to allow a student to see something of the whole field of modern economics, with emphasis on the integration of the classical deductive approach, the institutional approach and the Keynesian approach. For my own taste, I think there is too little of the techniques and tools of analysis to balance the rather fuller treatment of economic systems and of institutions. Nor am I wholly convinced that it is better to produce the tools of analysis after rather than before the discussion of systems, which are, after all, applications of the various theoretically possible solutions of the agenda of a modern economy. But the criticisms of the book are of its

strategy rather than its detail. Within its own objectives it is very well done.

Professor Bladen's book is very different in character. It is best described as a lively and stimulating accompaniment to other more orthodox text-books; indeed, the Preface makes it clear that that is how Professor Bladen has intended it. He takes certain problems and develops them, with lively illustration and with a minimum of jargon and diagram. He uses—as a means, I would suspect, of keeping Canadian students from losing contact with Canadian earth—Canadian examples wherever possible. He begins with the factors determining social wealth. He goes on to the price system and how it works, to price controls in war and peace and the limits of their efficacy, and he then proceeds to apply a price system to a simple model economy with certain specifications, and shows what its effects would be on various assumptions. He comes next to money and the reasons why people hold money. With that background he goes on to a variety of actual problems—population growth, the place of wheat in the Canadian economy, combines and public policy, the wage-earner in modern industry. In a final chapter he tackles the thorny questions of *laissez-faire* and collectivism. The book is as different as cheese from chalk from the ultra-systematic cover-the-syllabus approach of the books I have described above. And for those who prefer cheese to chalk it is wholly admirable. But its author would be the first to say that it depends on the co-existence of a nice chalky text-book to be supplemented.

Mr Gambs' book is supposedly addressed to "mature, earnest, intelligent people who have a sincere interest in economic theory, but have never quite made contact with it." While there is a great deal of competent jargon-free writing of applied economics, there is too little similar writing of economic theory. Mr. Gambs aims to fulfil this objective by describing some of the conflicting viewpoints of different economic theorists. What emerges I find hard to describe: a book in which obviously hard thinking is deliberately embodied in slipshod and gossipy language; in which comic-strip illustrations irritate or titillate; in which, nevertheless, if it is possible to sustain life on an unvarying diet of intellectual doughnuts, one would find that one had imbibed all the necessary calories. To my own less jammy taste, it is nauseating; but I accord it the grudging admiration that is due to an exceptional intellectual pastry-cook.

I turn next to a book with a very different purpose. *Funda-*

mentals of Economics was originally planned by Professor S. K. Rudra, with the collaboration of Professor J. K. Mehta and Mr. P. D. Hajela. With Professor Rudra's death in the last stages, the main responsibility fell on the two last-named. The volume represents a collaborative effort by a dozen or more teachers associated with the Allahabad tradition. It is generally orthodox in arrangement and presentation. It starts with general concepts; it goes on to problems of consumption and demand; to production, with a special group of chapters on rural and urban problems; to the theory of exchange, covering perfect competition in long and short periods, monopoly and imperfect competition; and to the theory of distribution. This is followed by a further five groups of chapters covering money and foreign exchanges, credit and banking, international trade, public finance and the conditions of economic progress. The book is designed for Indian students, and has the great advantage from their point of view that examples are almost invariably taken from Indian experience. It travels, by intention, rather slowly, and its exposition of the elements of marginal cost and marginal revenue, for example, is such as to carry a beginner through the minor complications without risk of misunderstandings. There are a few minor errors: Marshall is wrongly said to have regarded quasi-rent as a surplus above normal profits; Professor Chamberlin's name is consistently misspelt. But in general the exposition is good, if sometimes long-winded. It is to be expected that this book will fit well into Indian teaching; it has already reached a second edition, with some improvements to individual sections.

I have deliberately left to the end the most valuable addition to our stock of text-books suitable for use in England, that by Messrs. Stonier and Hague. Its method of exposition, the Preface tells us, is similar to that used in lectures on general economic theory to first-year students at University College, London, who are reading for Part One of the B.Sc. It provides a general introduction, that is to say, to economic theory, but it makes no attempt to embrace applications, and it does not attempt to cover special problems of international trade, public finance or welfare economics, nor, save in a very general way, the problems of money and banking.

I will say frankly that my first impression of the book was that it was far too difficult for the type and stage of teaching for which it was intended. It is essentially mathematical in character. Almost every other page carries a diagram, and the exposition is in terms of these diagrams. Almost everything that is to be

found in the familiar work by Chamberlin and Mrs. Robinson, for instance, is reproduced here; at first sight the difficulty appears to be of about the same order as that of their books. On closer study, I think my first impressions were wrong. It is certainly true that the authors have set their sights high. They have assumed that first-year students are not only willing but also competent to make a sustained intellectual effort comparable to that which one would expect of them in, say, the natural sciences, and that they will not be frightened off by mathematics of a difficulty which ought not to have frightened them in their schooldays. If their readers can make the effort and master this book they will be thoroughly well drilled and far more competent to go on to the complexities of the subject than are most first-year students at the end of the year.

I have revised my own ideas of the book principally because a careful reading of certain sections has led me to appreciate the care and thoroughness of the exposition. I read with special diligence the part dealing with indifference-curve analysis, partly because I find this a *pons asinorum*, partly because I retain a good deal of scepticism as to whether this is really a first- (or even a second-) year tool. If I may take this as an example, I do not think the exposition of the indifference curves themselves could have been bettered. On the other hand, the exposition of the meaning and properties of the price line (pp. 51-4) is nothing like so thorough, and I would expect an ordinary first-year student to get lost and need help at this point. The whole of the subsequent analysis of demand is built on the results of this, and on a modification of it, by substituting money as a general command over other goods for the second good in the indifference. Thus if the reader sticks here, he is lost. I think the moral is that this is a quite first-rate book for the really serious student, with some mathematical aptitude and the willingness of a scholarship- or exhibition-level schoolboy to puzzle his own way through difficulties. For others I suspect that a certain amount of help would be needed from a tutor. But until one has tried the book on a generation of students one cannot feel certain.

In the second half of the book the authors tackle the exposition of employment theory. They do this quite frankly along Keynesian lines, not because they regard Keynes as indubitably right, but because "there is no post-Keynesian orthodoxy," and because they are convinced that some general discussion of the questions asked by Keynes is a necessity. Making that assumption, this part of the book is very well done.

Thus, leaving aside their use of indifference curve techniques, due obviously to a wholly understandable reluctance to become involved in arguments about the concept of utility, the book can best be described (as the authors describe it) as an introduction to the Marshallian theory of value, with the addition of imperfect competition, and to the Keynesian theory of employment. I can warmly recommend it to those who are looking for a rather more advanced introduction to those subjects.

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Income and Wealth of the United States: Trends and Structure.

Edited by S. KUZNETS for the International Association for Research in Income and Wealth. (Cambridge: Bowes & Bowes, 1952. Pp. viii + 328. 35s.)

THE substantive part of this book consists of two long papers on the United States presented by S. Kuznets and R. W. Goldsmith to the Royaumont conference of the Association in 1951. The Kuznets paper "Long-term changes in the National Income of the United States since 1870" takes some 220 pages. Mr. Goldsmith's paper "The Growth of Reproducible Wealth of the United States of America from 1805 to 1950" takes about 80 pages.

The Kuznets paper (described by the author as "incomplete, despite its length") deals first of all with the appropriate definitions of National Income or Product for the purposes in hand and then produces figures of National Income and its growth over the period in both current and 1929 prices. In general, the technique employed is not to give yearly data but annual averages for overlapping decades. Subsequent chapters deal with *per capita* figures, productivity per head, the distribution of product by industrial origin, the distribution by type and size of income, the distribution by type of use and finally "flows across boundaries"—a rather miscellaneous bag of capital movements, migration and internationally traded goods. A useful appendix discusses National Income data for the pre-1870 period.

The Goldsmith paper starts off with a summary of the main statistical conclusions and then leads on to a short discussion of concepts from which the notion of "reproducible tangible wealth" as the best (wealth) indicator of economic growth emerges. The main body of the essay is devoted to the portrayal and examination of the figures of total wealth and its main constituents.

Finally, we have a section "Some Interpretations" and then an appendix giving fuller statistical data.

Enough has been said to show that even the heaviest meat-eaters will find sufficient, and more than sufficient, to satisfy them. Particularly succulent morsels are the illustrative calculation by Kuznets of the effect of rural-urban movements of the population on the price levels of consumer goods and on the flow of goods to consumers (pp. 60-2) or the discussion of the reasons why product per person engaged in agriculture was *persistently* lower than that in other sectors (pp. 112-13).

Nor need any reader have qualms about the excellence of the technical statistical work. There are, of course, points of definition, such as the Kuznets treatment of the contribution of Government activity to National Product, where differences of opinion may arise. But given the concepts used and the inevitably rough nature of some of the statistical material available, no one can do anything but praise the persistence, ingenuity and, above all, the honesty of the authors.

But despite all these excellent qualities, it must be sadly recorded that these two papers leave one with the feeling that the meal is rather indigestible. Kuznets makes no attempt at all in his paper to summarise either his aims or his conclusions, and in fact expressly declares at the beginning that he does not intend to do so. Goldsmith is kinder to the reader in this respect but some of the alleged virtues of wealth estimates which he puts forward are so obviously fallacious that the essay would be improved by omitting them altogether. For instance, the argument on p. 288 that "wealth" is a better method of comparing undeveloped and developed economies than "income" because of difficulties of defining and evaluating intra-family activities in the former breaks down on the simple point that there is no universal definition of "wealth" applicable to countries with vastly dissimilar economies. One has an obstinate feeling that despite the tremendous amount of wealth in the book, not many people will derive much income from it.

The key to this paradox is, I think, to be found in the twelve-page introduction to the volume by Kuznets, where he tries to justify the studies undertaken here. His general point is that work of this kind is necessary to the understanding of the problems of economic growth. Specifically, "the accumulation of tested observations is essential to a framework within which theoretical hypothesis and analysis must be formulated" (p. 15). Now the principle of the division of labour is one of the best known

in economics. There is no disgrace in being primarily a tool-maker rather than a tool-user. Nor is it always easy to see which information is relevant and which is irrelevant to any economic problem. But one must stop somewhere; it would not be ludicrous to maintain that *everything* that happened in the nineteenth century in the United States, has *some* relevance to the problems of economic growth. Without more than the vaguest notion of the problems or hypotheses which Professor Kuznets hopes to test with his data (or, perhaps, hopes someone else will test) it is difficult to assess the merit of the work fairly, to decide whether it is a vital pre-requisite for work in this field or something destined to be thick with dust in the libraries in a few years' time. For it must always be remembered that the law of diminishing returns applies to the raw materials of economics as well as to the economics of raw materials.

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Studies in Income and Wealth, Volume 15. Published for the Conference on Research in Income and Wealth by the National Bureau of Economic Research. (New York, 1952. Pp. x + 230. \$3.50.)

THIS volume contains the papers presented at a conference ostensibly devoted to "income size distributions" but which in fact had little to do with that elliptically entitled subject. At least four of the eight papers—and these are the more interesting—can be more suitably described as studies of family budget data, and may be presumed to provide evidence of the trend of research in the United States in this field.

Undoubtedly the most interesting paper is that by Milton Friedman on "A Method of Comparing Incomes of Families Differing in Composition." This attempts to rehabilitate the use of equivalent-adult scales along the lines originally proposed by Sydenstricker and King in a neglected paper published in 1921. In a preface Professor Friedman says that this paper was written in 1935, but that since he had not applied the method he outlines, he refrained from publishing it then. Working along similar lines, the Department of Applied Economics in Cambridge has for the past two years been estimating equivalent-adult scales for a number of commodities with some success, having independently revived the methods of Sydenstricker and King. It is to be hoped that the present expositions will attract

sufficient attention to direct research in what seems to be a very fruitful direction: it has a direct bearing on computations of the "cost of children" and, through these, it has implications for population policy and taxation policy.

It may be noted that the defect pointed out by Professor Friedman in his version of the method is not essential and can be overcome with a sufficient amount of extra computation.

Another paper of some conceptual interest is that by Mollie Orshansky concerned with the comparison of standards of living of farm and city families. A comparison of income levels or the sum of expenditures valued at constant prices is regarded as inadequate, since other things (non-pecuniary advantages) are not sufficiently similar. The method adopted is based on the fact that the income elasticity of demand for a commodity varies with the income level of the household. At high incomes the demand for most commodities may be expected to become inelastic as a satiety level is reached; at low incomes when only the bare minimum is spent on certain commodities demand for them will also be inelastic. But there will be some intermediate income range at which demand becomes highly elastic, and there will therefore be some income level at which the elasticity is at a maximum. The incomes at which this happens can be found for families living on farms and in towns, and Miss Orshansky regards these incomes as equivalent. Besides the difficulty that this method will yield different estimates according to the commodity considered, the reviewer can see no reason for attaching significance to the income at which the elasticity is at a maximum or for equating the standard of living of families at that income. Otherwise the paper contains a number of suggestive points on the grouping of commodities and quality variations.

The effect of the "age group" of the household on its level of saving is considered in a paper by Janet A. Fisher which links the economic analysis of family budgets to the sociological concept of the life cycle of the household. A cross-sectional study of families of different ages at one period of time is taken to provide evidence of the way in which a particular family may be expected to develop through time.

Another sociologically oriented study is that by Dorothy S. Brady, who shows that the savings ratio depends not only on the income of the household but also on the general level of the community's income. This result is based on a comparative study of families in towns of different income levels. Denoting

by y the household's income, by x its total expenditure and by z the average household income of the community of which it is a member, the relationship derived is

$$x/y \propto (z/y)^{0.2}$$

The concept of an "income elasticity" is, of course, based on a very simple model of the economic world in which income changes always have the same effect on expenditure. In a more complicated model a distinction may be drawn between what is regarded as the stable portion of the income stream which determines the habitual pattern of expenditure, and the variable portion which determines expenditures on exceptional items such as durable goods and binges. The elasticity of expenditures with respect to changes in these two components of income is, no doubt, different for most items of expenditure. After examining the family budgets of farm families, Margaret G. Reid—in a paper on the "Effect of Income Concept upon Expenditure Curves of Farm Families"—argues that a more complicated conceptual framework is required for an analysis of the expenditures of these families on account of the variability of their incomes.

While the subject matter of the last four papers referred to is of the greatest interest, the reviewer cannot refrain from commenting on the methods of research and presentation which seem to him to be unfortunately deficient in a number of ways. First, there is a proliferation of two-dimensional tables and frequency distributions when the argument in the text is generally in terms of means. These are often not given in the table, and the reader is forced to compute them for himself if he is to grasp the trend of the argument. Secondly, when graphs are given they are generally either scatter diagrams of the observations without the fitted curves, or fitted curves without the observed points. Only occasionally are the two combined, as is essential if the reader is to judge the reliability of the argument. Thirdly, there is a regrettable avoidance of mathematical formulations and the use of regression techniques. This leads to unnecessary obscurity in the argument and cumbersome analysis in the form of lengthy summaries of the data. When regression techniques are used, as in the study by Brady, confidence limits are not given for the estimates nor even a correlation coefficient. The relationship mentioned above is given in the form

$$\log x = -0.0295 + 0.83 \log y + 0.18 \log z$$

with the result that the convenient summary of the result—the ratio of a family's expenditure to its income being a function of

the ratio of its income to that of the average community income—is completely missed.

The comments in the last paragraph are not intended to detract from the value of the results presented. The reviewer is aware of the many difficulties that face an analyst of bulk information as available in family budget data, but he also feels that attention to the points mentioned should lead to even more fruitful empirical research.

There are four further papers in the volume. George Garvy writes hortatorily on the distribution of incomes. D. Gale Johnson explores some confusing data on whether the south is really poorer. There is an opening address by Edward D. Hollander and a peroration by Kuznets entitled "Directions of Further Enquiry."

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Contracts and Finance. By W. ASHWORTH. History of the Second World War: U.K. Civil Series, edited by W. K. HANCOCK; War Production Series, directed by M. M. POSTAN. (London: H.M.S.O. and Longmans, 1953. Pp. x + 309. 22s. 6d.)

THE problem in approaching a book like this is to decide what purpose it is intended to serve. Is it to fill a gap in the description of the administration of the Second World War? Is it to revive memories of the problems which were more or less dimly glimpsed amidst the day-to-day scurry of financing war production, and to recall the expedients adopted to solve them? These things are done, and done well, by Mr. Ashworth's volume. But other questions may be asked. Does the book really crystallise, for the theorist or the administrator, the lessons of nine years of intense activity in the procurement of war supplies? Does it throw light on the theory of monopsony or oligopoly? Does it, alternatively, elucidate the principles of a planned economy? It is not at all clear that, to these questions, the book returns equally satisfying answers. But that may well be because these were not the purposes which the author set out to serve. His own view is that "the book is concerned primarily with questions of policy: What was its content? How did it come to be just this and not something else? What were the results of its application?" (p. ix). Unfortunately, "policy" in the field of

procurement cannot effectively be discussed in isolation, and while great pains are taken to present lucidly the main strands of a horribly tangled skein, the critical reader is ultimately baffled by the blinkers which Mr. Ashworth has, perhaps unavoidably, chosen to wear.

Contracts and Finance starts with a review of the purposes and practices of financial control, as exercised before and (to a diminishing extent) during the War. The relationships between the Treasury and the Supply Departments, and their fundamental dependence upon Parliamentary procedures, are clearly brought out; as is the progressive relaxation of Parliamentary and Treasury control, made necessary by the sheer growth and urgency of War spending, possible by the system of Votes of Credit, and respectable by 100% E.P.T.

Within this framework, the book elucidates in particular the fact that "there were few major innovations in contractual procedure during the war. What did happen was that methods which had formerly applied only to a substantial minority of cases become customary . . ." (p. 40). In practice, the methods adopted concentrated on trying to limit the ratio of profits to capital employed, rather than on trying to force down costs by limiting the prices paid. This was probably inevitable, since in the overwhelming majority of cases it was impossible to pre-determine what an economical price would be. Nevertheless, it raises the question whether some alternative policy might have been more successful in avoiding a post-war inflation; a question which Mr. Ashworth can only pose, and not examine, because his subject does not extend to taxation policy as such.

The stability of contract procedure was in part necessitated by the immense scale of procurement operations, but Mr. Ashworth rightly calls attention also to official reluctance to change because "there was no known final solution to the problems involved" (p. 232) and to the strength of Departmental tradition. Were it not that the volumes of the "Official History" debar any mention of the officials concerned, he might have found yet another reason in the staff problems which beset contracts and finance divisions.

There was, however, one field at least in which tradition, at any rate, had little weight, because the Departments had scarcely any experience on which to build. This was the provision of fixed capital for war production, upon which, during the War, something like £1,000 million was spent. Only one-quarter of this went to directly operated Government establishments, and another quarter to Government factories operated by commercial

firms on an agency basis. The remainder furnished buildings and plant to extend contractors' own capacity. Where the assets so provided comprised separable units, it was possible to retain Government ownership and to negotiate rental arrangements, terminable at the conclusion of hostilities. The extent to which Departments were willing to provide assets on such terms is not, however, clear. Mr. Ashworth, discussing a case in May 1936, reports that "It appears . . . that the original intention was that in all capital assistance schemes the full cost would in the first place be met by the Government, any contribution by the contractor being made only in the form of a repayment of the residual value, when the assets were no longer required by the Government" (p. 205). He does not examine how far this rule remained in force, but this reviewer believes that, in one of the departments concerned at any rate, the practice by about 1942 was the opposite—the attempt was first made to get the contractor to pay the cost himself. It would have been interesting to have seen an analysis of the real merits of these alternatives; bearing in mind that contractors' remuneration was related to the capital which they themselves provided, and that they escaped Income Tax and E.P.T. to the extent of depreciation allowances on such capital, the rule of May 1936 may in fact have been a better one. But here again the limitations of Mr. Ashworth's subject step in, and the problem remains unsolved. In a different direction these same limitations preclude any attempt to examine the equally intriguing problem of the extent to which the provision of capital assistance effected a modernisation of industry, and equipped it for the post-war world.

Let it be repeated, lest *Oliver Twist* sound ungrateful as well as ungracious, that within its chosen limits the book is excellently done, and goes far (much farther than a short review can show) to define the problems faced and to explain the solutions adopted.

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Three Studies in Management. By JEROME F. SCOTT and R. P. LYNTON. (London: Routledge and Kegan Paul, 1952. Pp. x + 220. 18s.)

The Community Factor in Modern Technology. By JEROME F. SCOTT and R. P. LYNTON. (Paris: UNESCO, 1952. Pp. 169. 6s.)

AMONG the long-term projects included in the research programme of the British Institute of Management is "a series of

case studies of the handling of management problems in particular industries." *Three Studies in Management* contains the first of these case studies to be published in book form. Its authors, both members of the British Institute of Management research staff, have used a certain amount of the material in this book for *The Community Factor in Modern Technology* which they wrote under the auspices of UNESCO. The UNESCO study also draws upon case studies specially undertaken for it by other research workers in Belgium, France, Italy, Sweden and Switzerland, and upon the results of work carried out in the United States.

The first part of *Three Studies in Management*, and the bulk of the book, is taken up with the case studies themselves. The first of these was made in a Scottish colliery, the second in a small branch hosiery factory, newly set up in a northern mining village, and the third in a large Midlands hosiery factory, where considerable changes have taken place since the end of the war. The subjects for study were deliberately chosen to throw light on management problems in very different situations. The first study "is an attempt to analyse some of the normal processes of organisational life," the second "is focused on a fundamental readjustment" in the way of life of a community, and the third on adaptation to "a rapidly changing environment."

The studies, which have all been approved in their final form by the organisations concerned, vary both in length and in interest. The last is the shortest and, possibly for that reason, the least satisfactory. Probably the study of most general interest is the second, which describes in some detail the care taken by the parent company to ensure that its new branch would grow up as part of the local community. The result was remarkably successful, as is illustrated by the account (already much quoted) of how, even after the factory had been open for some time "it never ceased to be common usage to be in the factory at least ten minutes before and after time, and to start work early and finish late." Any firm which contemplates setting up a factory in a new locality would be well advised to read this account. Similarly, all those interested in the problems of the coal industry cannot fail to increase their understanding of them by a reading of the first case study. This detailed account of the organisation and management of a Scottish pit is very well done, and throws much light on the problem of absenteeism, the relative advantages, from the managerial point of view, of the "room and pillar" and "longwall" systems of mining, and many other questions.

The second half of *Three Studies in Management* is taken up

with an attempt by the authors to draw generally applicable conclusions from their own case studies and from case studies made by other authors. There is also a long and interesting appendix on research methods as well as fairly full notes on further reading. The authors' main conclusion, if one can be singled out, is that the social structure of organisations and communities must be respected if change is to be successfully undertaken. In what they have to say on this and other questions Mr. Scott and Mr. Lynton display the same balance and restraint that characterise their case studies. Some may be inclined to criticise this part of the book on the grounds that a number of the authors' conclusions seem so obvious that it was scarcely necessary for detailed case studies to be undertaken to support them, but such criticism would, I think, be ill-judged. There seems no more reason to believe that useful generalisations can be made by the light of nature in the field of human studies than in other fields, for example economics.

Economists will be particularly interested in that section of the concluding chapters where the authors discuss the optimum size of firm from the managerial point of view. Their three studies, they conclude, "bear out previous experience in suggesting that there is no such thing as an optimum size—or at least that, within broad limits, size itself is a minor factor." The only generalisation they are prepared to make in this sphere is that the size of the basic working group should normally be under twelve. They are not, however, prepared to give any figure for the optimum size of an industrial unit. Five hundred is sometimes suggested as the maximum number to be employed in a largely autonomous unit, but the authors appeal to the case of the colliery, where fourteen hundred are employed with very few officials, to support their view that the problem of optimum size needs to be looked at in relation to the methods of management employed. "If responsibility is diffused throughout the organisation and the relationship between officials is strong and flexible, the optimum size of an industrial unit may be considerably greater than if these conditions do not obtain."

The authors also have something to say on the subject of flexibility in large organisations. Quoting the case of the large Midlands hosiery company, they deny that great size is inherently inflexible. This company, although one of the largest in the trade, was the first to adapt itself to post-war circumstances. One cannot, of course, draw from this general conclusions on the relationship between size and flexibility. The authors' view is

that "specialisation and large size are . . . in themselves neither flexible nor inflexible, only forms. The thing to concentrate on therefore is the process of adaptation, not the form. If the process is sound, the result will be sound."

The Community Factor in Modern Technology is not as successful a book as *Three Studies in Management*. It draws on a larger number of case studies, but does not present them as a whole. Extracts from them are given (in small type) in the course of the text of the book. The result is very disjointed. The conclusions of the book are rather more visionary than, but basically similar to, those of *Three Studies in Management*. The latter is, however, a far more satisfying book to read. Economists, among others, will find much to interest and enlighten them in it.

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Capital Budgeting. By JOEL DEAN. (New York: Columbia University Press (London: Geoffrey Cumberlege), 1951. Pp. x + 174. 32s. 6d.)

PROFESSOR DEAN aims to provide "an analytical framework that will systematize management's approach" to the problem of planning and controlling capital expenditure. The latter is defined to include all commitments which "tie up capital inflexibly for long periods" no matter where they are recorded in the accounts. The period for which effective plans are made is assumed to be one year ahead, possibly against a background of longer-range development "plans," where projects are usually "indefinite as to amount, timing, and ultimate profitability," so that genuine planning of capital expenditure does not arise. It is postulated that "opportunities for profitable investment exceed the supply of funds that the company is able or willing to devote to capital expenditures". Since management is "hired to take control of stockholders' funds and to maximize their earning power" (no disinherited shareholders for Professor Dean!) profitability is the basic criterion for selection between projects.

A ranking of capital projects put up for approval or rejection in order of their rate of return will give the demand schedule for capital expenditures as at the date of the budget and will show the total amount of money that can be invested to yield more than specified rates. A rigid model would require that this demand

schedule be confronted by a supply schedule setting out the costs of corresponding financial resources to the company, but even in the preliminary discussion the supply of funds for investment is seen to involve other factors besides costs (for example, dividend policy and policy regarding outside finance) and the imprecise empirical content of the cost concept is recognized. Such considerations blur more than a little the principle that "the decision on where to cut off capital expenditures and when to supplement internal funds from external sources should be governed by current cost of capital," and the difficulty for stable policy imposed by the extreme short-term instability of the latter factor is recorded.

In the final model as applied in the bulk of the book, management is assumed to set up definite standards of rates of return from new capital projects and to use these in order to cut down capital expenditure. Screening proposals on this basis, it is argued, will put "capital rationing on an economically sound foundation" and limit "the degree to which persistence and persuasiveness can influence the allocation of funds." Two types of policy are recognised in this connection: a fluctuating effective rate of return varying with current conditions, possibly supplemented by a basic *minimum* rate required in all conditions; and a fixed cut-off rate which is applied continuously. Either policy may make use of "exception-rates" which discriminate between classes of expenditure and which may vary according to strategy. In the main chapters of the book the implications are discussed of applying such rate-of-earnings policies to replacement investments (where they are most readily applicable), expansion investments, product investments and strategic investments. The final chapter discusses cyclical investment policies and reaches the broad conclusion that it may not pay an individual business to try to stabilise its investment independently of its conjuncture, despite the social desirability of a more stable total investment. There is an appendix on the disposal of assets, the negative side of investment theory.

Professor Dean's purpose has been to erect principles which will guide management thinking; he has succeeded in producing a book which managements of large businesses will find stimulating and which will help them to look freshly at their own systems for the oversight of capital expenditure, and they will be encouraged in more persistent investigation of the earnings side of a capital project despite the practical difficulties in making reliable estimates. Professor Dean has applied accepted economic doctrine

in a realistic manner and, within the limits imposed by the size of the book, the difficulties of making a strenuous application of his principles are squarely recognised; as the author says, qualifications of his theory make up a major part of his book. But the fact that his clear earnings principle gets a little fuzzy when its application to important types of investment is considered will lessen the book's practical value, and managements will naturally regret that Professor Dean decided so definitely not to go into details of procedures and administrative routines. One particular point may be made here, since it affects the whole application of the earnings principle as a single-view guide to capital-expenditure control: no matter how closely earnings estimates are scrutinised as part of the capital rationing procedure, if they cannot be adequately post-checked, subordinate managements may simply produce figures as another manifestation of the "persuasiveness" which, as we have seen, Professor Dean is concerned to discipline. But this sort of post-mortem check can be made only with great difficulty, if at all, except for the large standing-on-its-own-feet type of project, and, there, earnings estimates are alike most difficult to make and most subordinated to overall strategy. It would have been helpful to have had this aspect of control scrutinised in detail.

Professor Dean seems sometimes to adhere too strongly to the literal application of his principles. For example, the uncertainty of all estimates of earnings beyond the immediate future is recognised, also that the fate of any one project may be engulfed in the general fortunes of the whole enterprise; at the same time, Professor Dean casts stern doubt on the practice of evaluating a project in terms of the number of years before it will pay back the cash outlay, rather than evaluating the whole earnings-stream; yet, in view of future uncertainties, even the recommended principle may require so heavy a discounting of future yields that it will not lead to substantially different results from the condemned procedure, and the time-to-pay-off approach may have much to recommend it as a practical routine, whilst too rigid an adherence to principle may enable technicians to justify uneconomically long-range investment.

Economists will read this book with considerable interest; the principles advocated are based fairly upon accepted doctrine and are broadly modified in a realistic manner. If careful account is taken of the practical difficulties and reservations, it will be seen that the underlying theory remains no more than the broad guide which Professor Dean would claim it to be, and that

the sphere for its application is much more limited than abstract theorising would suggest. The book has another interest for economists, however: Professor Dean is known alike for his realistic studies in industrial economics and for his considerable experience as an economic consultant to industry. The professional reader will find scattered through the book observations on practical procedures and actual business behaviour which add considerably to its value. (I have marked pages 9, 10, 11, 12, 37, 39, 42, 46, 53, 54, 59, 65, 72, 79, 85, 86, 87, 96, 116, 132, 134, 136, 137, 144, 146.)

These very examples, however, must make the academic economist sigh for another book which Professor Dean might well have written under the same title—a detailed study of what companies actually do, how they actually control capital expenditure, and the criteria which they actually adopt. Economics differs from the stricter sciences just because it has proceeded so far on the basis of prescription of broad principles rather than the description of observed detail. The lack of sufficient studies of the latter kind in fact prevents us from investigating fairly how far business life, despite or because of its empirical process of trial and error, may have evolved its own rationale. Even if such studies merely led to re-affirmation of theoretical doctrine, the latter might well be enriched by its practical application, and some of its entities might be themselves transformed to facilitate such application. There is, however, the possibility that economic theory itself might be significantly altered. The possible importance of this kind of business study seems to justify this departure from best reviewing practice in suggesting a book which the author could have written, as well as commending the book which he has written.

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L'Autofinancement des Sociétés en France et aux États-Unis.

By M. MALISSEN. (Paris: Dalloz, 1953. Pp. ix + 246.)

In the introduction to this work the author expounds the main difficulties which arise in the definition and measurement of the "self-financing" of companies out of their own undistributed profits. In Part One there follows a statistical study, largely the author's original work, of self-financing by companies in France in the period 1921-49. Part Two comprises a similar study, based

this time on the work of others (particularly the U.S. Department of Commerce, the T.N.E.C. and the N.B.E.R.) relating to self financing in the United States in the period 1909-50. Finally, in Part Three the author gives his own interpretation of the reasons for, and consequences of, self-financing.

Most of the points considered in the introduction will be familiar to anyone who has had to answer for statistical purposes the question, "What are profits?" Where, for instance, does maintenance end and replacement begin? What is the best way of dealing with inter-company payments of interest and dividends? Should profits be calculated net of tax debts? How should depreciation be assessed at times of rising prices? Should goods used from stock be valued at their historical cost or their replacement cost?

These last two questions are, of course, vitally important in the case of France in the period of rapidly rising prices which began in 1939. M. Malissen himself is wholeheartedly in favour of accounting in "real" rather than in "nominal" or "financial" terms, but unhappily the only sources of data available to him—the published balance-sheets of companies and statistics prepared by the taxation authorities—follow neither a purely "real" nor a purely "financial" basis of accounting, but strike out on their own in almost chaotic individualism. French company balance sheets are indeed in almost all respects highly individualistic (more so, it would seem, than British ones compiled under the 1948 Companies Act) and M. Malissen never loses an opportunity to stress the advantages of standardised accounting.

The fiscal statistics used by M. Malissen relate to total taxable profits, and to the yield of the tax on income distributed on share capital. Unfortunately the coverage of the statistics is not quite the same in the two cases, but otherwise the main difficulty is in deciding what meaning to attach to taxable profits compiled on neither a "real" nor a "financial" basis, but on a complicated and rather unstable compromise between the two. For though French tax legislation has from time to time redefined taxable profits with the object of excluding stock appreciation and of allowing depreciation on a replacement-cost basis, the change-over has been piecemeal and hesitant, and is indeed still far from complete.

A rising price level not only complicates the problem of arriving at a figure for profits in any particular year, but also leads to difficulties when comparing one year's profits with another's. M. Malissen tackles these difficulties in respect of France in the

post-1938 period by deflating annual profits with an index of the prices of semi-finished goods. The choice of this particular index is defended in a footnote on page 68, but the defence is far from convincing, and one cannot help wondering how seriously M. Malissen's conclusions would be affected by substituting any of the alternative indices which he rather summarily dismisses.

The main general conclusion which emerges from M. Malissen's survey of both French and United States companies is the extent to which they stabilise their dividends. The United States data suggest a marginal propensity to distribute profits of not more than 20% (see pp. 169 and 173), and the French fiscal data for the 1940s suggest (though less unambiguously) an equally low marginal rate of distribution (p. 90).

Admittedly the French balance-sheet data tell a completely different story (p. 70), but M. Malissen is able to discredit it by explaining that company officers usually contrive to put before their shareholders a profit figure low enough to preclude demands for a rate of distribution excessive in relation to the supposed interests of the company (p. 205).

It is indeed the tendency of company officers to be loyal to their company, as distinct from its shareholders, which provides the basis of most of M. Malissen's analysis of the reasons for self-financing. His contention is that the retention of profit is semi-automatic: in effect (he argues) so long as business is sufficiently expansive "*le profit s'investit nécessairement*" and becomes undistributable simply by virtue of becoming illiquid (p. 217). This contention is, however, surely pressed too far: dividends are not just the cash that happens to be in the kitty at the time of the annual shareholders' meeting.

Subsidiary reasons, relevant to France in the last decade, for withholding profits from shareholders are compulsory dividend limitation (p. 201) and the fact—of great importance when prices are rising rapidly—that each year's dividends are paid out of the money value of profits in the preceding year.

The author seems to take a rather narrow view as to the cause of the high profits which facilitate lavish self-financing. These result from "the difference between selling price and cost price," and are thus "especially tied to real wage rates" (p. 219). This view seems to attribute high real profits solely to the imposition, by manufacturers and traders, of high percentage profit margins, and does not give due weight either to the high level of output on which the margins are earned or to the spreading of overheads which a high level of output facilitates.

English readers will find this book a helpful guide to the borderlands between business and social accounting, a useful source of information about French business, accounting and fiscal practices, and (I hope) a stimulus to further research into company finance in the United Kingdom.

BRIAN TEW

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British Overseas Trade from 1700 to the 1930's. By WERNER SCHLOTE, translated by W. O. HENDERSON and W. H. CHALONER. (Oxford: Basil Blackwell, 1952. Pp. xvi + 181. 22s. 6d.)

THE German edition of Dr. Schlote's book appeared in 1938, and the pioneering calculations which it contained have in the meanwhile been a good deal used. Certain of Dr. Schlote's series have since been superseded, but an English version is none the less much to be welcomed. The translation by Dr. Henderson and Dr. Chaloner is readable and clear—in some respects clearer than the original. The proof-reading, however, leaves a little to be desired.

Dr. Schlote's chief contributions to the statistics were indices of the volume of imports, exports and re-exports for the whole period; estimates of the value of imports and re-exports at current prices for the years 1801–53; and subdivision both of his own indices of volume and of the declared values (values at current prices), for the years for which they exist, according to the principles of the Brussels register.

There is now in existence a rather confusing variety of series relating to aggregate values and volumes of British foreign trade before 1914, and it may be useful to describe briefly what they are. The three chief sources are, first, the Board of Trade series in the Parliamentary Papers, second, Dr. Schlote's estimates, and, third, the estimates of Professor Imlah, published in two articles in the *Journal of Economic History* in 1948 and 1950.

The series relating to volume in the Parliamentary Papers fall into two groups. The so-called Official values of imports, exports and re-exports are values calculated (with certain exceptions and anomalies) at constant prices, that is at the prices prevailing in 1694. The Official value series run from 1697 till 1869. The prices used are not the same for imports and for re-exports, so the two series cannot be directly compared to give net imports. Calculation of the Official values was discontinued

after 1869, and the Parliamentary Papers do not contain indices of aggregate volume for the 1870s. From 1880 onwards (1900 in the case of re-exports), Board of Trade indices are available of values at 1900 prices. Figures for value of exports at current prices (declared value) run from 1798; values of imports and re-exports at computed current prices were given from 1854–69, after which declared value figures, analogous to those for exports, for the first time become available.

Dr. Schlote's indices of the volume of imports and exports are calculated on a system of shifting bases. The period is divided into phases (six for imports, seven for exports), and the physical quantities of individual commodities imported or exported are combined into an index by weights appropriate to the particular phase. The phases overlap, and a continuous series is obtained by splicing, with 1902–20 (the weights here being the prices of 1913) as the base phase. Dr. Schlote's tables include many series relating to the volume of individual commodities calculated by his method. To save labour the system of shifting bases was not applied to re-exports, which are computed throughout at 1913 prices. For years prior to 1814, data on individual commodities are inadequate for Dr. Schlote's method, and he uses simply the Official values reduced to a base which makes them continuous with the rest of his series. The author's estimates for the value of imports and re-exports at current prices for 1801–53 are obtained by the rough-and-ready method of multiplying his indices of volume by Jevons' price-index, expressed as a relative of its value in 1913.

Professor Imlah's volume figures are computed at prices of 1880. They relate to exports and net imports, and run from 1798 to 1913. His separate series for imports and re-exports, from which the net import series derives, have not been published, nor have his calculations for individual commodities (except cotton and wool and cotton and woollen textiles). His estimates for the values of imports and re-exports for 1798–1853 are much more elaborately worked than Dr. Schlote's, being obtained by multiplying the Official values of the individual commodities entering into trade by their respective prices as given in contemporary price-currents.

Different indices of the terms of trade can, naturally, be derived from the various measures of value and volume. Dr. Schlote's terms of trade series is peculiar inasmuch as he has chosen to take as the numerator the price of exported *manufactures* and as his denominator (after 1854) the price of imported

raw materials. The result is therefore not an index of the terms of trade in the strictest sense, and its behaviour naturally shows some differences from, for example, Professor Imhof's index of the net barter terms of trade.

In view of the wide differences in their methods of construction, the various indices that have been mentioned on the whole behave surprisingly similarly, and it may be suggested that future research will more profitably be directed to studying the behaviour of individual commodities and other subdivisions than to further refinement of the aggregate measures. The discussion contained in the second part of Dr. Schlote's book is therefore to be welcomed as proceeding on the right lines. In analysing some of the trends revealed by the series he has calculated, the author gives particular attention to the commodity composition of trade and its geographical distribution. He does not seek to establish any particular thesis, but much that is interesting emerges. Especially noteworthy are his estimates of the changing importance of foreign trade relatively to total production and to the national income. The figures he uses for the national income, derived from unpublished work by Dr. E. Quitner-Bertolasi, are, however, to be received with caution, since they differ materially, for the years after 1870, from those of Dr. Prest (*ECONOMIC JOURNAL*, March 1948), and they are, on the face of it, unduly high for the earlier part of the nineteenth century.

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British Planning and Nationalisation. By B. W. LEWIS. (New York: Twentieth Century Fund (London: Allen & Unwin), 1952. Pp. xi + 313. 24s.)

DURING the era of planning and nationalisation, English economists were too busy inside the planning and nationalisation mechanism or else outside, building (and demolishing) theoretical "models," to be able to write more than occasional articles on the process they were experiencing. Full-grown books from foreigners are therefore welcome, particularly from understanding contemporary economists, such as Professor Ben Lewis, with previous experience of the English set-up. This particular book is full-grown in its amplitude, covering (in Chapters 3-6) nationalisation of coal, transport, electric power and iron and steel; (in Chapters 7 and 8) the distribution of industry, and (in

Chapters 9-11) town and country planning, the National Health Service, housing and agricultural policy. It is full grown in its roots, too, linking contemporary development to previous history.

Professor Lewis provides important reading both for Americans and Britons. For Americans knowledge of the previous history of the nationalised industries or the National Health Service is particularly important. The Health Service, Professor Lewis explains (p. 187):—

"is not a socialistic aberration. It has grown from the national health insurance program instituted in 1911; its roots in Britain are deep. At the same time, its socialistic quality—found in the undertaking to provide medical, dental, nursing and hospital services to all persons almost irrespective of status and ability to pay—is more apparent than in any other single project in Labor's program. The national health service is at once indigenous and radical."

Americans, too, are not allowed to forget that the quasi-coercive planning of industry in Development Areas has "paid off" (pp. 181-2) in lowering the differential unemployment of men and unoccupation of women, and in avoiding the need for additional housing of emigrants. But on the whole the non-coercive "democratic" character of British economic plans is stressed, if also (p. 40) their lack of imagination and timidity—a stress that is quite necessary for correcting American misconceptions.

To the English reader this book is important in its view (substantiated in Professor Lewis's previous *Price and Production Control*) that what with cartelisation as well as nationalisation (p. 47) "free private individual enterprise is vestigial in major sections of the British economy." It is also important (pp. 36-8) in voicing much native opinion and in giving a provocative long-distance view of salient points. Here, for instance, is the comment on the Economic Survey:

"One of the disconcerting features of an attempt to understand the exact character and function of the Survey is the reader's discovery that he is coming to use quite interchangeably such terms as 'estimate,' 'prediction,' 'forecast,' 'guess,' 'target,' 'need,' 'programme,' etc. Hopes, expectations and admonitions are presented in confusing juxtaposition, and . . . it is difficult for the reader to orient and reorient himself as he moves from section to section—or even from sentence to sentence."

The author has made good use of Hansard and other printed sources to describe current opinion on the measures brought forward, and he has picked out intriguing aspects of the measures themselves and the practices and policies they involve, for

instance (p. 205), the dentists time-studying of themselves, and the controversy (pp. 111–20) over investment in power equipment by the British Electricity Authority. Professor Lewis takes the nationalisation of the Bank of England, of aviation, of cables and wireless and of gas as non-controversial, and thus clears the decks for the real issues to which (p. 133) “events . . . have given substance,” and which “experience has brought to life.” Among those outstanding real issues the author puts the position of labour in a nationalised industry; the relation of the policy of the government of the day to the direction of the public concerns; price and service policies generally; and political-science problems of organisation and control—questions such as: “Should board members be representative of interest groups? Functional boards *versus* policy boards? The most effective combination of line and staff.”

If any criticism is to be passed, Professor Lewis cries down perhaps too much the ideological and personal influences on the policies and plans of the 1945–50 government. His index has no reference to such British founding fathers as the Webbs, Bernard Shaw (of the *Commonsense of Municipal Trading*) or even Herbert Morrison. Nor does the author sufficiently consider the type of person who has been appointed to the Boards of the Public Corporations—appointments on which policy and efficiency so much depend. Possibly, too, more reference should have been made to nationalised broadcasting and nationalised all-in insurance.

The author, however, clearly substantiates the claim in the Foreword by Dr. Evans Clark, Director of the Twentieth Century Fund, which financed his research. Certainly, this “brief summary of recent British economic history will help Americans to comprehend what has happened there and its implications.” British readers, too, will be helped, and should be grateful to the Fund and to Professor Ben Lewis.

P. SARGANT FLORENCE

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The Transportation Industries, 1889–1946. A study of output, employment and productivity. By H. BARGER. (New York: National Bureau of Economic Research, 1951. Pp. xvi + 284. \$4.)

THIS study is one of the well-known series describing the growth of production and productivity in American industry during the first half of the twentieth century. Largely owing to the lack

of suitable data, the scope of the book is a little narrower than the title suggests. The detailed analysis is restricted to those industries that sell transport services to others, thus excluding, for example, the transport services of vehicles owned by manufacturing concerns and the services of private motor cars.

The book proceeds in ascending order of statistical complexity. In Part I, after a survey of the relative size of the industries and passenger and freight traffic in 1939, the author describes the growth and decline of traffic and the trends in employment and productivity since 1889. Although combined passenger and freight traffic grew five times between 1889 and 1939, it appears that the rate of growth slackened considerably after 1920. Owing to the rise in private-car travel and private-lorry traffic, the percentage of the total labour force employed in the transportation industries as here defined has fallen; but the author estimates that productivity has increased at the rate of about 2.2% annually, which, compared with Fabricant's estimate of 1.8% for manufacturing industry, seems suspiciously high.

In Part II the author describes the experience of certain transport industries, selected mainly because of the relative completeness of data, for more detailed examination. Of particular interest to the transport economist are the calculations of changes in the length of journey or haul and the character of the traffic.

Approximately two-fifths of the book consists of appendices, mainly concerned with the presentation of the basic series. The first of them—“The Output of Public Utilities”—is a strange exception. The problem at issue is what weights shall be used in calculating the output index of an industry which fixes its actual charges on a basis of discriminating monopoly. Starting from an analysis of discriminating monopoly and joint supply, Professor Barger attempts to justify theoretically the use of actual charges as weighting factors in the indices of output. He argues that in the ordinary case of a competitive industry the use of prices as weights implies that the index simultaneously measures the change in terms both of marginal utilities and of marginal costs. In the case of discriminating monopoly it is only exceptionally that prices will measure relative marginal costs as well as relative marginal utilities. In the case of joint products produced in invariable proportions, if prices are such as to “clear the market” and to give a normal return, there would be a set of prices that would reflect marginal utilities; but with the assumption of constant proportions, no concept of cost can be applied to any particular commodity, and no conflict

of principle in the construction of an index number can arise (pp. 177-8). But when proportions can vary there is bound to be a problem. Professor Barger suggests that it be solved by substituting for "clearing the market," the more suitable condition that "the enterprise shall work as close to full capacity as is compatible with a normal return on its activities as a whole" (p. 178). But this does not solve the weighting problem in both its aspects, for the weights that Professor Barger recommends depend on relative elasticities for demand and not on relative marginal or direct costs, and thus satisfy one, but not both, of his requirements. The reader will search in vain for a definition of the vague concept of "full capacity" and for the method of controlling rates so that normal returns are achieved. Although he discusses in considerable detail technical improvements and innovations which have been introduced over the past sixty years, he hardly mentions explicitly the importance of rate structures in inducing traffic to use the agency least costly in terms of resources used.

The basic unit for measuring the output of these industries is the ton-mile or the passenger-mile. In addition to the unweighted indices the author produces indices weighted (where possible) by average revenues, thus allowing to some extent for the length of haul. In calculating productivity indices Professor Barger rightly avoids the job of estimating *direct* labour input and divides the output index by a *total* employment index. In this procedure, however, one must be prepared for inherent idiosyncrasies such as, for example, the inclusion of track-maintenance labour in railway employment and the exclusion of road-maintenance workers from the labour force employed by motor trucking.

One can but admire the patience, skill and ingenuity of the author in appraising and analysing the vast quantity of data which he unearthed. In these circumstances criticism on points of detail might appear frivolous. But on page 95 in Chapter 4—"Steam Railroads"—Professor Barger surely gets himself derailed at an important stage of the argument. He remarks that the employment figures for 1900 include some labour engaged in new construction "which, of course, nowhere appear(s) in our measure of output," and that the employment figures for the thirties and forties are probably biased downwards owing to under-maintenance. From this he concludes that "... the indicated increase seems a minimum estimate for the change in output per worker over four decades." Clearly the upward bias

in the denominator in the early years and the downward bias in the later years means that the figure derived is a maximum estimate. It is impossible to measure the effect of this factor in exaggerating the increase in productivity in railways, airways and oil pipelines, but one suspects that it is not negligible (see Table 25).

Those whose fields of specialisation do not include transport economics will find only Part I of interest, but for the student of transport this study will be an essential handbook.

A. A. WALTERS

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Introduction to Economics for Agriculture. By JOHN D. BLACK.
(New York: Macmillan and Co., 1953. Pp. 727. \$6.00.)

ACCORDING to the Preface, "this book gives all the general principles (of economics), and all the background in the general economy, that the usual agricultural college student needs, and does it with much better integration than is likely with separate courses." It is also intended for use by classes of women students in colleges of agriculture and home economics, since it gives much space to the economics of consumption and of household production.

Professor Black devotes 100 pages to "orientation"; he continues with the general theory of production—what to produce, how to produce it, the aggregate supply of farm products; in the next 100 pages he discusses the economics of consumption—elasticity of demand, population changes and the like; a section on marketing includes the theory of price fixing as well as a description of price trends and of the physical processes of distribution; five short sections cover all the student needs to know on money, banking and credit; income and its distribution; land economics, which includes land use and tenure; international economics; and public economics, a mixture of public finance and the theory of government intervention in the price-fixing process.

Professor Black follows the model of most American text-books in mixing a little theory with a lot of description of the current economy, which makes his work of less value on this side of the Atlantic. Unfortunately, he also follows the common custom of incorrect grammar (pp. 84, 365) and of tying his sentences into knots (p. 245, "the nearest possible to an equivalent for livestock of the foregoing for crops is what is presented in Chart 26"; p. 440, "The sharp increase in the percentage of the sales decrease back

through the stages of manufacture is what would be expected"). And even in a discussion of Asiatic population problems, he might have spared us the "average mother" of whose six or seven children "all but around about three . . . die before they reach adulthood" (p. 362). I also find it curious that a book of this size should devote three pages to the theory of the rate of interest and to a discussion of types of household production (I. Regular: (i) Preparation of meals; (ii) Dishwashing, etc.). Three pages also supply all the knowledge which agricultural students require on the history of land tenure or the balance of payments. The condensation of history in particular leads Professor Black to statements which range from the quaint (p. 53, "as early as 1450, the manor lords of England began to rent some of their own lands"), through the misleading (p. 123, "in England the landlord does practically nothing except to receive his rent"), to the downright mistake (pp. 225, 363).

The desire to protect students from the strain of reading more than one text-book and from "the intolerable effort of conscious thought" is very apparent; such protection is probably useful in a one-year course in economics for those whose main interests lie elsewhere. But I feel that this book lacks a reasonable proportion between its parts, and fails also to convey the complexity of many problems over which Professor Black so skilfully skates. Superficiality is all that can be expected in one year, but surely the one-year student should be warned that his knowledge is superficial and that further concentrated thought of a high order is required for a proper understanding of a modern industrialised society? I fear that these students of agriculture and of home economics may conclude that a right interpretation of Professor Black's involved sentences will enable them to dogmatise on all the economic problems of the day, and that they will therefore not be encouraged to continue their education in this field.

EDITH H. WHETHAM

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The Economics of New England. By SEYMOUR E. HARRIS. (Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1952. Pp. xvii + 317. 31s. 6d.)

WHEN trade is free and factors immobile, nations with high wages benefit from the lower wages in other countries. But when factors become mobile, as in a federation, the high-cost

region is in danger lest employment and capital migrate to the low-cost regions. Professor Harris's comprehensive report on New England's economic prospects makes good use of a large official and academic literature surveying regional differences in natural resources, power, transport, wages, skills and taxation.

He finds that wage differences influence industrial location much more than do taxes. But in a federation, one may suggest, local tax levels often reflect local wages; the higher the latter, the more local governments can indulge in collective amenities. Professor Harris implicitly recognises this relationship by urging improved social security standards (greater social-service taxation) in the rival southern states. He also shows the power of the central government to offset the price-mechanism's cost-minimising location tendencies when he advocates increased federal expenditure in New England.

Professor Harris believes that the solution to New England's decline may be found in a more dynamic management and a re-equipping of existing firms. But how dynamic managers and investors are to be persuaded to ignore the lure of low southern wages and taxes and warm southern winters he does not reveal. Perhaps New England must decline until rival regions have run through their under-employed labour, and have raised their social security outlays to the level of the older region.

A. D. SCOTT

London School of Economics

Problems of Capital Formation in Underdeveloped Countries. By RAGNAR NURKSE. (Oxford: Basil Blackwell, 1953. Pp. 163. 15s.)

THIS book, consisting largely of lectures given by Professor Nurkse in Rio de Janeiro and in Cairo, "is an attempt, on a small scale, to make use of economic theory as well as specific observation, with a view to elucidating some of the basic conditions of progress in the poorer two-thirds of the world" the author tells us. It is not "in any sense a piece of research." It does not attempt to deal with all aspects of capital formation in underdeveloped countries. Technological development is not analysed, and although finance receives some consideration in the latter part of the book, the emphasis throughout is on the real, or non-monetary, problems of capital accumulation in underdeveloped areas.

To the reviewer, this is a happy choice of emphasis. The basic problem of such areas is surely the low amount of real capital per head, leading to low output (and income) per head, and consequently to the inability to spare a margin out of income for increasing the capital stock. Starting from this basic position, Professor Nurkse throws out various stimulating ideas. There is, for instance, the idea that the mere existence of wide divergences between the standard of living in different countries may cause chronic "disequilibrium" in the balance of payments. This idea is developed in Chapter III, where the writer cites J. S. Duesenberry's idea that individual consumption functions are inter-related, not independent. Is it not probable, Professor Nurkse asks, that national consumption functions are similarly influenced by high consumption in foreign countries, in a world where inter-communication between nations is becoming ever closer?

Professor Nurkse distinguishes two types of underdeveloped countries: densely populated and sparsely populated countries. In the former he sees a possibility of increasing capital accumulation by turning rural manpower which at present constitutes "disguised unemployment", in the sense that it adds nothing to agricultural output, to productive use. In such a case a margin for capital accumulation is really already there: the difficulty arises in realising this margin when the workers are transferred from agriculture to, say, road building or irrigation works. The Government must somehow prevent the remaining agricultural population, who have been sustaining the extra numbers so long as they remained in agriculture, from increasing their consumption standards when the workers are transferred out of agriculture.

The second case is that of sparsely populated areas. Here there is no margin from disguised unemployment. However, in this case "the conditions for an advance in farming techniques are favourable at least in as much as land, by definition, is relatively plentiful in these countries" so that the author relies upon a spontaneous increase in productivity in agriculture to furnish the margin for capital accumulation.

From these considerations Professor Nurkse arrives at the conclusion that the relationship between consumption and investment stands midway between that envisaged by Keynes and that envisaged by the classical economists. "In the case now before us, the situation differs from the Keynesian model in that it is impossible to expand both consumption and investment. On the other hand, it is possible to increase capital formation without having to cut down the level of consumption" (p. 38).

With a subject as complex as that about which Professor Nurkse is writing, it would be surprising if one found oneself in agreement with everything that he says. Perhaps my most general criticism would be that I think a sharper distinction between "underdeveloped" countries and "undevelopable" countries is needed. This distinction is partially contained in the author's dichotomy between densely populated and sparsely populated countries. However, I do not think it is wholly contained therein. There is a fundamental difference between the position of Greece, with its teeming population and meagre resources (whether developed or underdeveloped) and the position of Brazil and Canada, with enormous underdeveloped resources. I think one should recognise that there are countries which are simply poor. I would also question whether it is a foregone conclusion (as is suggested in Chapter VI) that United States capital could earn more if invested in, say, India than it can earn in the United States. Once we recognise that production depends not only on labour and "capital," but on the whole set of factors of production, it is quite possible that it may be simultaneously true that a given piece of American capital equipment (a tractor) could release (save) a larger quantity of labour in India than it does in the United States, but would nevertheless produce less wheat in India than in the United States. On a minor point of exposition, I think that the argument in Chapter I about the lack of inducement to invest in countries peopled with poor consumers might have come out still more clearly if the writer had made less use of the term "size of the market"—as he himself shows, the relevant meaning to give that phrase in the context is simply "productivity of the population."

Professor Nurkse would perhaps himself agree to some extent with the reviewer's opinion that economic theory does not really contain a theory of capital growth, or indeed of economic growth generally. We have theories of fluctuation (stability or instability), but hardly a theory of long-term development. Quite possibly such a thing is not to be sought within the field of economics. Be this as it may, the little book under review does not present us with a full-blown theory of capital formation. Rather, it gives us many stimulating ideas, based in good part on empirical rather than theoretical considerations, about the way capital has grown and the way it might grow in poor countries. All this is presented in very simple form suitable for a wide public.

HELEN MAKOWER

London School of Economics.

The Pattern of a Dependent Economy. A Study of the National Income of British Honduras. By N. S. CAREY JONES. (London: Cambridge University Press, 1953. Pp. xv + 162. 21s.)

THIS is a readable book; and an encouraging one, too, since it comes from a Civil Servant who has been sufficiently inspired by Miss Phyllis Deane's study of Northern Rhodesia to apply her methods, *mutatis mutandis*, to another colonial territory.

In accounting for a detailed list of economic activities for the year 1946, Mr. Carey Jones sets himself two aims. The one is to show that a national income study, accurate enough to provide a factual basis for colonial "planning" of capital works, a yardstick for gauging material welfare, though not social welfare, and a broomstick for ridding Legislative Councils and Chambers of Commerce of economic myths, can be made by a government auditor virtually in his spare time. For anyone as interested in his subject as the writer, and for a territory the size of Wales with fewer than sixty thousand people of thoroughly mixed stock, this is not attempting too much. His other purpose, which is simply "to indicate some of the problems peculiar to a dependent economy," enables him to distil from experiences of African colonies as well as from three years spent in British Honduras a number of sensible comments upon post-war economic policies.

If the problems discussed, declining forestry for example, are sometimes peculiar to British Honduras only, there are passages about the role of foreign enterprise and about the balance between agriculture, transport and local industry which those advocating the new industrial revolution in "underdeveloped" lands would do well to ponder.

The author's own modesty, which is everywhere apparent, helps to precipitate the conclusion that the book falls a little short of achieving its main object. This is due largely to the aboriginal character of colonial economic statistics in 1946, which renders the application of national accounting techniques very difficult in practice; but partly also to the fact that opportunities for checking some of the estimates are missed and to the choice of definition. The estimates described in the central chapter on output derive from a miscellany of sources, but the majority of them appear to rest upon the occupational classification of a census, taken in 1946—which the author disarmingly admits is inappropriate to the seasonal nature of employment in the colony's principal activities, forestry, commerce and farming (p. 39). It is notable,

however, that the output of agriculture is carefully calculated by valuing physical quantities of each crop or product at specially collected market prices. Data for compiling any detailed figures of personal expenditure seem to have been lacking. Two-thirds of the colony's food is normally imported, and the account would have been strengthened had an independent estimate been made of the consumption of all imported goods valued at final retail prices.

In the circumstances it is perhaps inevitable that no comparison could be drawn between geographical product and income accruing to normally resident factors—the latter being the concept adopted—but even a crude appraisal of the profits being earned by foreign-owned companies would have brought out more strikingly the "pattern" of dependence.

Despite these inadequacies, and it must be emphasised that they are inadequacies of materials rather than of method, the colourful descriptions of forest exploitation, sugar production and citrus growing; the observations on the Evans Commission's proposal for settling West Indians in British Honduras; and many penetrating, if not profound, *obiter dicta* on "colonial development and welfare," the importance of possessing minerals, and the need for hard research; all these ingredients combine to give what should prove to be a refreshing stimulus to student and administrator alike.

The book concludes with short appendices, on the devaluation of the local dollar and on the information needed for presenting annual estimates of the national income, and with several tables illustrative of the colony's production and foreign trade.

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The Economic Development of Iraq. Report of a mission organised by the INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT at the request of the government of Iraq. (Baltimore: Johns Hopkins Press (London: Geoffrey Cumberlege), 1952. Pp. 463. 40s.)

"IRAQ," as the writers of this report boldly state at the beginning, "possesses impressive potentialities for economic development." In geographical setting it has something in common with Egypt, with a great strip of irrigable land, farmed

from antiquity, as its nuclear area, and with its desert rim. It is the converse of Turkey and Persia with their highland arid cores, and their fragmented but more habitable peripheral lowlands. In many respects the material prospects for Iraq are brighter than those for Egypt. There is the great resource of the oil-fields, the existence of the habitable steppe area to the north, running west into Syria, and the possibilities of the Kurd Highlands, a part of Iraq as yet so little known and assessed. Further, Iraq has escaped the two great problems of Egyptian development. There are areas of potential settlement in Iraq for which Egyptian authorities might well sigh: it is easy to forecast, if the devil of nationalism can be controlled, a bigger population at a higher standard of living. Secondly, important as Iraq may be to the free world in position and resource, there is no strategic key point of the value and conspicuousness of the Suez Canal to sour Iraqi relations with the great powers of the Old World and the New.

The report, prepared at the request of the Iraqi Government for the International Bank for Reconstruction and Development, rightly emphasises one set of economic circumstances, which is, in a sense, unique, the sound administration of the huge revenue, existent and anticipated, from the profits of the oil-fields. It is possible to envisage in Arabia and Persia a like stage in economic history because of their oil resources, but even so the situation in Iraq has no parallel because of its endowments of a good nuclear area, a compact population, variety of resource and reasonably easy conditions for communication growth. There are so many assets if the "best laid schemes" are not frustrated by the frame of mind of the Near and Middle Eastern peoples.

The importance of the oil-fields is so great that the reader might ask for a more thorough discussion in the report of their natural phenomena, perhaps in the section on "Basic Factors and Conditions." The summarised description of output on pp. 149-51 is hardly adequate. A short comment on the lie of the Near and Middle Eastern oil-fields in general, and of the Iraqi resources in particular, would be in place, together with a further diagram to illustrate it.

The political implications of the report are handled most gingerly. One could absorb its contents without ever knowing of the British Mandate of the inter-War years. Admittedly this was of short duration, and mandatory administration was much enfeebled throughout by divided opinion in Great Britain on the significance of Iraq in the Middle East, and especially by

the great depression of 1929-34. But the Mandatory system, however hesitant, helped to mould the young Iraqi state and to guarantee its security in uncertain times.

Moreover, the essential element in the Mandatory experiment, the presence of the responsible and disinterested foreign expert, most of all to guide capital investment from revenue, is discussed again and again in the report. The profits of magnificent resources are not to be had without the technical skill of more mature economic groups. On the one hand, the trend of events in Iran has shown up the immense value of the Iraqi oil-fields and the instinct to develop them as fully as possible. On the other, the fate of the Anglo-Iranian Oil Company has made every group of experts wonder whether nationalism, bursting out of control, may not wreck elsewhere the only means whereby the Near and Middle Eastern peoples may enjoy the wealth of their homelands. The report could not present the issues with greater gentleness and discretion, but they are inescapable nevertheless.

The mission compiled its findings for the use of the International Bank for Reconstruction and Development and not for the general reader. Its fundamental purposes, of information and advice, which were probably achieved, should be borne in mind when the arrangement of the facts tends to become irritating. Part I contains the main findings and recommendations with useful appendices. Part II consists of a series of monographs, one on basic factors and conditions in the economy of Iraq, and the others, in greater detail, on the main features of Iraqi economic life: irrigation and flood-farming, dry-farming and mountain farming, animal husbandry, mining and manufacture, transport and trade. There are careful discussions also of the closely related topics of health and education. The amount of information collected is vast, the conscientious effort at accuracy most convincing, the deductions and suggestions sensible and interesting. The triplicate discussions of some topics, two general and one detailed, become somewhat boring, but a certain tediousness is the strongest criticism that can be made of a thoroughly useful compilation. If read in conjunction with the Iraqi volume of the Admiralty Hand-book Series, with its fine cartography, its careful geography and its precise historical outline, the report forms a solid contribution to the understanding of one of the key states of the Middle East.

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Transitional Economic Systems : The Polish-Czech Example. By DOROTHY W. DOUGLAS. (London : Routledge & Kegan Paul, 1953. Pp. vii + 375. 25s.)

It is a cliché to say of a book that it fills a long felt need. But that is no more than the truth about the book before us. A good deal of information in bits and pieces gets to us through the Iron Curtain—political, economic, social, theological, military. But overall appraisals of any kind are few and far between. The truth, of course, is that a book about almost any part of the world to-day becomes more and more difficult to write, is liable to be out of date almost before it has left the printer and thus very often seems hardly worth the effort. Yet, even as a transitory picture of a part of the world which is notoriously changeable and which this year is changing more rapidly than usual, the present book is of the very greatest value. Dr. Douglas deserves unhesitating commendation for her excellent and courageous, if perhaps thankless, piece of work.

The book covers the economic history of two countries of Eastern Europe, Poland and Czechoslovakia, beginning with their condition in the inter-war years and then through the Nazi occupation, the destruction of property and decimation of the people, the Red Army's occupation, the setting-up of the People's Democracies, the early left-wing coalitions, the worsening of the international situation in 1947-48, the launching of the first Three- and Two-Year Plans, the sudden ideological change and the eventual Communist seizures of power, and the subsequent full programmes of land reform and nationalisation. The author traces this intricate development separately in the two countries and then together as a "Common Pattern." She describes the technical planning methods, the "Socialist" banking and credit systems, labour, wages, management, bureaucratic control, works councils, co-operatives and social insurance. She also describes inter-state trade and foreign trade; but she gives us rather less than we should have liked to see of Polish-Czech trade with the West and with the Soviet Union. One chapter is devoted to a case study of the Bata shoe industry. The statistical material is thorough throughout. Records of personal interviews are interesting. The story generally is taken up to 1952.

The author's conclusions, however, are all too brief. Obviously what we are most curious to have some estimate of is real degree of success or failure, in terms of human well-being, of this gigantic experiment in socialisation. But our curiosity in this respect has to remain unsatisfied.

F. P. CHAMBERS

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The Abbey and Bishopric of Ely : The Social History of an Ecclesiastical Estate from the tenth century to the early fourteenth century. By E. MILLER. Cambridge Studies in Medieval Life and Thought, New Series, ed. M. D. KNOWLES. Vol. I. (Cambridge University Press, 1951. Pp. xiii + 313. 25s.)

THE surviving records of English agrarian history in the later Middle Ages are exceedingly abundant and exceedingly tantalising: they reveal in minute detail some aspects of social organisation and of economic life; yet they are so fragmentary and so difficult to interpret that they seem wilfully to frustrate attempts at synthesis and to bury the student under the weight of their complexity. The most valuable are usually local records; and they have to be analysed in the first instance in local studies, of which there is a long and distinguished tradition. But for the interpretation of certain types of document and for a proper perspective of the results a wider view is often necessary, and it is difficult for the local historian to know when he should be using his microscope and when he should be scanning the horizon.

Mr. Miller has overcome this problem to a quite remarkable degree. He traces the origins of the Ely properties; analyses their structure so far as it can be recovered from the tangled wreckage of Domesday statistics; and then proceeds to describe the economic organisation, the social and constitutional position of the various layers of society, and the legal and administrative arrangements of the honour and liberty from the twelfth to the fourteenth centuries. He analyses every aspect of his theme on which the sources can throw light. The canvas is crowded and the discussion often technical; but he has digested his material so well and given to every aspect of the subject such intensive consideration that we are brought face to face with the problems of social history in an arresting way and made to grapple with them. It is remarkable that in a book which makes few concessions to the casual reader, the stamina of the thought can lend interest even to the tortuous agonies of medieval legal procedure. But there is much in the book which is of more general interest than the details of the liberty: one or two instances must suffice.

In the main we have to reconstruct the organisation of medieval agriculture from manorial surveys and accounts. These were not written to serve the purposes of economic analysis, and however much we may admire the skill of the medieval landlord in preserving precarious claims to labour services—an important part of every landlord's capital—and scotching the efforts of the

unjust steward, we could wish that the records gave us a more comprehensive view of the manor economy. Mr. Miller has much that is interesting to say on the organisation of labour, and especially on the relations of villein and hired labour. Villein labour is comparatively rigid; the demands of agriculture are not: for this reason, if for no other, we should expect to find a growing proportion of manorial servants in the period of high farming of the thirteenth century. The records suggest that this was so—but how little they tell us about them; how little they tell us above all of the “very great deal of casual labour” (p. 91) which there must have been. Closely connected with this is the problem of how the surplus produce of the manor was transported: some of Mr. Miller’s most interesting pages describe the way in which villein carrying services were used in the thirteenth century to link manor to manor, to supply the bishop’s household, to buy and sell at the local market towns and even (for some of the Essex and Hertfordshire manors) at London; above all to connect with the harbour at Lynn, where the manorial supplies could meet the main artery of medieval trade.

There is little to criticise in this exact and scholarly book. The nature of the analysis makes the tale a trifle unreal at times—but some passages in medieval social history always read like a bad fairy story. In the chapter on Domesday Book the distinction between the tenure of land and its economic exploitation is not always clearly observed. We could wish that the author had passed from the interesting account of how some of the barons of St. Etheldreda rose to power via the episcopal and royal service to a slightly more general analysis of social promotion in the twelfth and thirteenth centuries; and perhaps also that the analysis of the non-agricultural sources of the bishop’s income had been extended to include some hint of his economic activities outside his estates—which must surely have been not inconsiderable in the case of men such as William Longchamp (cf. p. 77). The description of Bishop Nigel’s attempts to recover alienated property (p. 174) is a little out of perspective, since it leaves out of account the evidence of John of Salisbury’s letters (nos. 30–2). But these are minor defects in a book which is a model of how the complexities of local history may be pressed to the service of history in a wider field.

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The School of Salamanca: 1544–1605. By MARJORIE GRICE-HUTCHINSON. (Oxford: Clarendon Press, 1952. Pp. xii + 134. 12s. 6d.)

THIS is an attractive little book, adorned by a charming picture of the School at Salamanca, and a portrait of one of its teachers. It introduces us to the Spanish Schoolmen, who were trying in the middle of the sixteenth century to adjust the teachings of St. Thomas Aquinas to a situation caused by the end of the Moorish wars, the unification of Spain and the economic shock following the huge influx of American silver. A hitherto static world, where goods had been exchanged at “just prices” and incomes, especially profits were restricted to “customary standards of living,” was shaken from top to bottom by a great inflation. Some aspects of this metallic inflation were very different from those with which paper-money inflations have made us familiar. In the latter, the national money’s purchasing power is usually greater in the domestic market than abroad; during the Spanish silver inflation, a “Spanish real” bought more abroad than in Spain. Miss Grice-Hutchinson draws a fascinating picture of Spanish University life, and gives an excellent description of the money and exchange markets of those days. She carefully analyses the tracts of Vitoria, Navarro, Mercado and other Spanish authors, whom she has so to speak re-discovered. She offers us excellently translated extracts from the works of nine of these men, followed by a copious bibliography. She claims credit for them as forerunners of some modern economic doctrines, such as marginal utility, purchasing-power parity and others. These claims may be justified, but the chief merit of these men was their intelligent analysis of Spain’s great conundrum, which one of them, Cellerigo, phrased like this: “There is no money, gold and silver in Spain, because there is too much, and Spain is poor because she is rich.” On this topic, which greatly interested later economists, Hume among them, I wrote a book, *Spaniens Niedergang während der Preisrevolution des 16ten Jahrhunderts*, which the author has apparently not been able to use. Spain’s problem was not solvable as long as her policy clung to the rigid doctrines, which had served a stable age. The members of the School tried to get round the concepts of “justum pretium,” on which this policy pivoted. They failed to convince public opinion, and Spanish policy failed. Home production did not react to the stimulus of higher prices, but remained stagnant. Exports to the Indies of a relatively small amount of goods

caused too heavy a strain. So the Cortes asked, 1548, "to prohibit the export of goods from our country to the Indies, as both parties can manage with their own commodities." Silver, being the only cheap commodity available in Spain, was exported legally and illegally. That part of it which was not spent on the armies was used for buying goods abroad, the low prices of which greatly interfered with Spain's domestic output.

The merits of the School of Salamanca might shine even more brightly against a more fully developed background of Spain's economic development in those critical years and of the vagaries of her policy.

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Théorie Générale de la Population. Vol. I, Économie et Population.

By ALFRED SAUVY. (Paris: Presses Universitaires de France, 1952. Pp. 2 + 370. 1200 Fr.)

FOR the economist, population presents at least three fundamental questions, namely, the conditions determining the size of populations, the effect of numbers on product and the relation of population trends to economic growth and fluctuations. The fame of Malthus rests on the answer he gave to the first of these questions; he did not succeed in expounding a theory of population in terms of the doctrine of diminishing returns. This task was taken up by other classical economists, notably John Stuart Mill; but an accurately formulated concept of an optimum—implied by the second of the above-mentioned questions—continued to elude them. It was in the work of Cannan and Wicksell that the optimum theory of population emerged in its modern form. Meanwhile, the dynamic side of population had been pushed into the background by the preoccupation with the theory of value; aspects of economic development, such as the theory of colonisation, which had been very much in the minds of classical economists, fell into neglect. The outstanding exception was Karl Marx's *Capital*, which stressed that for each system of production in the course of man's history there was a law governing population; a central part of his doctrine dealt with the law of population valid for the system of capitalist production. With the recent revival of interest in economic growth, the third of the themes posed above—population as a dynamic determinant—is demanding increasing attention.

The appearance of a major work on the theory of population

by the distinguished French authority, Alfred Sauvy, has been eagerly awaited; and in the volume under review we are given the first half of a General Theory. It is marked by precision, comprehensiveness and awareness of contemporary applications. After three opening chapters on the fundamental factors governing population growth, the bulk of the book is devoted to an exhaustive account of the optimum theory. It is all elegantly done with the aid of numerous well-chosen diagrams. The assumptions underlying the concept of the optimum are clearly set forth, and the analysis then proceeds by removing these one by one, thereby giving a series of revised versions of the optimum. For example, we are shown the analytical implications of recognising that the population is divided into inactive (young and old) and active producers, that output consists not of one homogeneous product but of heterogeneous commodities, that the distribution of the output is not equal but unequal, and that technique and consumption habits change.

The treatment goes beyond conventional lines in some important respects. A distinction is drawn between the economic optimum and the optimum of power, with a touch of realism added by some hypothetical comparisons between the United States and Soviet Russia. Another interesting feature is the recognition that in a society divided into two classes the idea of a national economic optimum wears a little thin. In this case there are two populations, the dominant and the dominated, and four optima—that of the dominated from the point of view of the dominant, that of the dominated from their own point of view, that of the dominant from their own point of view and that of the dominant from the point of view of the dominated. This analysis is then applied to two types of society, an agrarian economy based on feudalism and modern industrial capitalism. Opening his chapter on the under-developed countries, the author writes: "The theory of domination has a twofold application, within each country and in the world as a whole. And in both cases we find the eternal adversaries, Malthus and Marx." In Europe Malthus preceded Marx by half a century, but in the under-developed countries it is the other way about. On this important topic the book says much that is realistic and thought-provoking; there is also an acute analysis of the conditions under which technical progress may be expected to increase or diminish the economic optimum.

The strength of this work lies in the unusually thorough analysis of the various optima; on the level of comparative

statics the author uses his analytical tools with skill and imagination. Unfortunately the dynamic aspect is disposed of in one short chapter almost as an afterthought. This weakens the claim of the work to be a *general* theory of population, unless the deficiency is going to be remedied in the volume which is to follow. The chapters on migrations, "the money value of a man" and the rising cost of the fight against disease bear little relation to the main theoretical structure. They bring together useful empirical facts; but one cannot help regretting that the author did not deal thoroughly with population in its bearing on economic growth and fluctuations. An analytical section on this dynamic aspect would have been an interesting supplement to the impressive formulations of the static optimum and would have provided a firmer basis for some of the judgments expressed on contemporary issues.

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The National Health Service in Great Britain. By Sir JAMES ROSS.
(London: Oxford University Press, 1952. Pp. xiii + 398. 30s.)

SIR JAMES ROSS has given us a useful, common-sensible account, not only of how the National Health Service is now organised, but of how it came to be what it is. The public health services grew from the Poor Law and from the necessity of a collective battle against the great epidemics. National Health Insurance was a consolidation and extension of provisions for general-practitioner care which the friendly societies had already developed for themselves. Local-authority general hospitals were created a generation ago because of the proved inadequacy of voluntary provision. The need for a closer integration of all these three types of service with finances sufficient to provide fair shares of medical care to all parts of the country and to those citizens excluded from insurance had been recognised by Royal Commissions, private investigators and even the British Medical Association before the Second World War began. The Service was built upon existing foundations to satisfy admitted needs and upon an adaptation of the existing organisational pattern which was the only one to which the various interested parties would agree. Newspapers, politicians and medical men made a tremendous fuss about it. But the British people, disregarding the clamour and being determined to believe that the new Service was

merely an extension of National Insurance, have quietly accepted what they persist in calling "the scheme," satisfied that it was definitely better than what went before and would doubtless improve still more in time.

Though he deserves praise for making his account of the origins and structure of the Service dispassionate and objective, unfortunately Sir James Ross tends to assume throughout his book that the reader already possesses considerable knowledge of the subject. For instance, his important chapter on "The Growth and Development of Health Services Public and Voluntary, 1910-1939" contains no outline of the Insurance scheme of 1911. Yet elsewhere he assumes that his readers know what "approved societies" were. In another chapter a similar assumption is made about the Board of Control. The opening chapters may serve as a useful refresher of memory to students of British social institutions, but they would be incomprehensible to a non-specialist foreigner who wanted to find out not only how our service works but why we established it. Even the useful chapter on Health Services in Scotland suffers from allusiveness. However, the account of what happened after 1939 is better than the historical introduction and the exposition of the Acts of 1946 and 1947 is good and clear.

Sir James Ross is an administrator so soaked in his subject that he unconsciously assumes a knowledge on the part of his reader which the latter does not possess. Like other administrators, he is also prone to assume that when regulations and instructions have been put on paper and issued, the system will in fact work that way. Such an administrator, when defects are revealed in his system, too often takes refuge in the establishment of a committee to investigate and report. The book refers again and again to committees, reports, investigations which have been set up within the service; but one would like to have read a more critical account of the findings of these committees and especially an assessment of the extent and value of any remedial action which may have followed from them. One is left wishing that here and there Sir James had made up his mind to suggest boldly his own remedies. One would have liked, for example, to know his view of the proper share of real power within the Service which should go to the medical man and the layman—a subject which is always discussed with vigour when members of Executive Councils and Hospital Boards and Committees get together. We are shown how the Service looks to the high-level administrator, with its chain of control, its balancing

of interests and stresses, all its apparatus of committees, circulars and regulations; but we lack a description of how it looks to doctor and patient in their day-to-day relationships in hospital and consulting room.

The Ministers of Health and Secretaries of State for Scotland who have been responsible for the Service so far have had some difficult administrative problems to confront, but it was the finance and cost of the Service which gave them (or certainly one of them) sleepless nights. It is certain that the British spend a smaller proportion of their national income upon health services than do the citizens of the United States. It is almost certain that they spend a smaller proportion than they did in 1938. But the vast bulk of this expenditure is made to-day by the National Health Service and has to be raised by taxation. The net cost to the Exchequer of more than £400 million annually has brought into sharp relief the competition of health, housing, old-age pensions, national assistance, education, defence, etc. for a fair share of national resources. Sir James Ross is not an economist, and it would perhaps be hardly fair to complain that his treatment of this fundamental problem is rather slight. If, however, his book goes into a second edition he should revise his account of what happened when this competition came to a head in 1951. He gives the impression that the Chancellor of the Exchequer had himself made decisions about types and kinds of expenditure *within* the Health Service—a constitutional impossibility; and he says that “the Minister of Health dissented and resigned office” (p. 136). This curious inaccuracy about one of the most controversial events in the history of the Service will be all the more puzzling to foreigners when they read the (correct) reference on p. 228 to a “new Minister of Health” being in office two months before this alleged resignation. However, readers should not be put off by this one error. Otherwise, the book is accurate and contains a painstaking collection of facts and figures about the Service. Perhaps we must await the lapse of a longer period of experience before the critical and constructive interpretation which this truly remarkable new institution deserves.

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La Politique Sociale de l'Angleterre Contemporaine. By JEAN L'HOMME. (Paris : Presses Universitaires de France, 1953. Pp. 512. frs. 1,800.)

DESPITE its title, Professor Lhomme's book deals only with wages, cost of living and employment. It is a scholarly work of great thoroughness, well documented and closely argued. At the outset he makes an interesting comparison between superficially revolutionary but fundamentally conservative France and outwardly traditional but economically revolutionary Britain. After a full description of the facts of the movement of wages and earnings, of the declared policy of government towards them and of the institutions we use to determine them, he remarks that his readers must by now be convinced that English policy in these matters is much more effective in its results than logical in its character. He concludes by saying that the lesson which other nations may learn from our example lies not so much in technique as in its spirit, in its lively care “*de tenir compte du possible pour parvenir au souhaité*” and in leaving the interested parties—trade unions and employers—free to make their own adaptation to new institutions.

Professor Lhomme understands fully the importance during and since the war of the N.J.A.C. and the N.P.A.C.I.—our new economic parliament which has “just grown” without the political Parliament ever being asked to legitimise it. He appreciates, as some have not, the significance attached by the government of 1945–51 to the maintenance of full employment and gives due weight to the political as well as to the economic factors which influenced trade-union policy in that period. One can pick holes: it seems strange, for example, to discuss bulk buying without mentioning the Raw Cotton Commission; the treatment of social payments—especially family allowances—and their influence, if any, upon wage demands is disappointingly brief. But such defects are slight. It is very satisfying to know that our institutions are being so thoroughly studied in France. It is flattering to read the verdict of so skilled an investigator as Professor Lhomme that Britain, despite the grave dangers which beset her in the nineteen forties, “set on foot the boldest and at the same time the most efficient social policy undertaken by any of the democratic countries.”

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NOTES AND MEMORANDA

THE SIZE OF THE FACTORY IN SWEDEN—A NOTE

THE evidence which Professor Jewkes provided in his article "The Size of the Factory" (ECONOMIC JOURNAL, June 1952) can be readily amplified by Swedish industrial statistics. In 1913 and quinquennially since 1920 the annual report *Industri* has contained very full statistics on size of establishments. It is possible that in 1913 the statistics were not complete in their coverage of all industry, especially of the smaller units, but from 1920 this defect is not apparent. Further, there have not been significant changes in definition, so that the statistics quoted below are fully comparable over time since 1920.

Swedish experience bears out Professor Jewkes' conclusion that there is no general tendency for the average size of the factory to increase. If anything, the reverse is the case, except for metals and engineering. Even here the tendency to an increase in average size since 1935 can be attributed to special factors—changes in unemployment rates and war-time expansion of the engineering industries.

The distribution of workers between establishments of different size does not show the same stability. The overall tendency has been for an increase in the proportions of workers employed in establishments employing fifty workers and under and in those employing more than 500 workers. This polarisation is not found in wood products or chemicals, where the smaller establishments have become more important, nor appreciably in food products, where the largest establishments show an extremely slight increase while the smaller units have gained considerably, nor in light, heating and waterworks, where the change has been in favour of the middle-size establishments. The dominating tendency is shown most strongly in metals and engineering, paper and printing, textiles and clothing, and in leather, fur and rubber products. These conclusions are supported by Table II. Inspection of the quinquennial returns (not reproduced here)

TABLE I

		All industries.	Metals and engineering.	Bricks, porcelain, clay products.	Wood products.	Paper and printing.	Food products.	Textiles and clothing.	Leather, fur and rubber products.	Chemicals.	Light, heating and waterworks.
Average size of factories where more than ten workers employed	1913	75.0	107.2	63.5	52.3	75.7	55.4	112.6	78.3	104.6	71.9
	1920	72.6	106.0	49.5	44.2	87.4	63.2	98.0	69.9	92.1	43.4
	1925	72.8	100.6	54.2	46.5	84.6	56.7	107.9	72.3	88.0	43.8
	1930	72.4	100.8	52.4	41.3	87.2	50.5	114.6	75.5	87.0	46.8
	1935	68.4	92.6	43.7	36.6	86.2	47.7	107.6	75.5	68.6	43.1
Average size of factories where more than three workers employed	1940	72.9	104.2	42.9	34.4	80.6	48.8	103.1	81.5	86.6	46.4
	1945	69.6	104.2	45.9	34.7	85.3	44.5	91.2	68.4	66.1	42.3
Percentage division of workers by industries											
	1945	39.1	57.3	31.8	19.3	57.1	21.2	70.1	40.8	37.5	21.8
	1920		33.5	10.0	14.5	12.3	8.3	11.6	4.3	4.2	1.3
	1945		41.4	8.2	9.3	10.2	7.2	14.4	4.3	3.4	1.6

suggests that there is no evidence of a tendency to increasing polarisation, except, perhaps, in paper and printing.

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THE DETERMINATENESS OF EQUILIBRIUM IN BARTER

IN his theory of market price, Marshall has proved the determinateness of equilibrium by assuming the marginal utility of money to be constant throughout. If this assumption is made, the final equilibrium rate becomes independent of some initial trading at "false" prices. From this point of view, Marshall's assumption is highly ingenious. For, if the equilibrium rate of exchange cannot be shown to be determinate, equilibrium analysis loses much of its significance. In Hicksian terminology Marshall's assumption amounts to ignoring the income-effect. What will happen if this assumption is dropped? Marshall has considered this problem by taking the case of barter between two persons.¹ He has shown that the final (equilibrium) rate of exchange in such a case will depend upon the initial and the intermediate rates of exchange, and the latter in their turn are dependent upon the relative bargaining strength of the two parties. The equilibrium rate thus becomes indeterminate. There is no doubt a rate of exchange which might be called the true equilibrium rate in the sense that if that rate was fixed upon from the very outset, it would be adhered to throughout. But that is very unlikely to be realised in practice. This study of barter between two persons is then extended to the market as a whole consisting of two groups of persons, each group having one commodity which the other would like to have in exchange. Marshall holds that the conclusion deduced from the study of barter between two persons applies *in toto* to this case also. That is to say, in the market under perfect competition the determinateness of equilibrium can be proved only on the assumption that the marginal utility of money (or one of the two commodities exchanged) remains constant throughout.

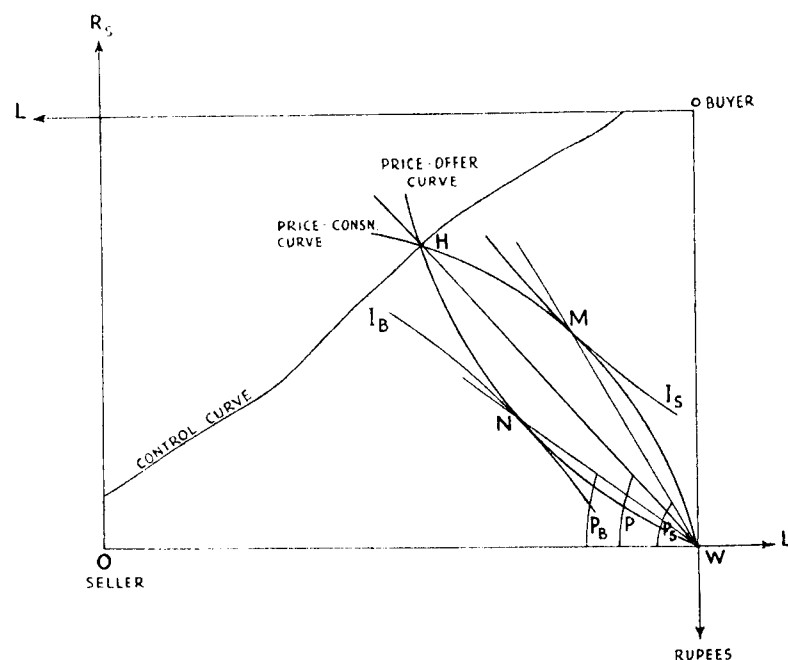
Let us reconsider the validity of the above conclusion in terms of the indifference-curve technique which enables us to dispense with the assumption of constant marginal utility of money. To start with let us take the simplest case of exchange between two

¹ Marshall, *Principles*, App. F.

TABLE II

		All Indus- tries.	Metals and engineer- ing.	Bricks, porcelain, clay products.	Wood products.	Paper and print- ing.	Food products.	Textiles and clothing.	Leather, fur and rubber products.	Chem- icals.	Light, heating and water- works.
Percentage of workers in all establishments in employing:											
(1) Under 10 workers	1920-5	7.1	4.0	4.3	10.7	4.2	21.3	1.9	5.1	6.4	26.8
	1940-5	9.4	6.3	9.1	20.9	5.3	24.3	2.5	7.0	8.7	21.4
(2) 11-50 workers	1920-5	20.7	14.4	34.5	34.7	16.2	22.3	12.1	20.3	13.9	28.6
	1940-5	20.9	14.4	36.9	39.7	17.0	28.0	14.4	20.1	19.2	30.7
(3) 51-200 workers	1920-5	28.1	22.1	35.8	30.6	28.3	18.6	38.2	38.8	30.7	16.0
	1940-5	24.5	18.8	31.7	26.3	27.7	26.6	30.4	30.7	24.4	17.2
(4) 201-500 workers	1920-5	24.9	24.0	17.0	21.7	33.8	29.0	27.1	22.1	28.6	11.5
	1940-5	18.0	15.4	11.2	11.8	28.3	11.6	27.5	16.8	29.9	17.0
(5) Over 500 workers	1920-5	19.2	35.5	8.4	2.3	17.5	8.8	20.7	13.7	20.4	17.1
	1940-5	27.2	45.1	11.1	1.3	21.7	9.5	25.2	25.4	17.8	13.7

persons, one having his labour time to sell and the other a given money income to purchase labour time with. Let us superimpose the buyer's indifference map on the seller's in such a way that the horizontal distance between the vertical axes shows the total labour time at the seller's disposal and the vertical distance between the horizontal axes shows the buyer's total money income. This is shown in the figure below. Now, barter



Note.—The above diagram is adapted from T. Scitovsky—*Welfare and Competition*, pp. 416–17.

between two persons is, for all practical purposes, similar to bilateral monopoly. If the seller has got the upper hand in bargaining so that he can set the price, he will fix the price represented by the tangent of the angle p_s , where the buyer's price-consumption curve touches one of his (seller's) indifference curves, and he will move to the point M . On the other hand, if the buyer is in the position to fix the price, he will fix it at p_b , where the seller's price-offer curve¹ touches one of his (buyer's) indifference curves, and he will move to the point N . The actual exchange rate will thus lie anywhere between p_s and p_b , depend-

ing upon the relative bargaining strength of the two parties. To this extent the rate of exchange is indeterminate. This conclusion with regard to the indeterminateness of the rate of exchange within the range between p_s and p_b holds true so long as the agreement between the two parties relates to price alone. But if bargaining between the two persons is concerned with both price and the quantity exchanged, it will lead to a terms of exchange which is geometrically represented by a point on the contract curve so that a position of true equilibrium will be attained. But this point is not necessarily the same as that under perfect competition (*vide* Scitovsky, *Welfare and Competition*, p. 419). In the case of barter between two persons, the equilibrium rate is thus indeterminate.

Let us now consider the case of exchange in a market under perfect competition. The assumption of perfect competition implies that the number of both the buyers and the sellers is very large, so that no single buyer or seller is in a position to set the price. An individual buyer or seller is thus in the position of a price taker. Under such circumstances, the rate of exchange will settle at p , where the price-consumption curve and the price-offer curve intersect each other, as shown by the point H in the diagram. The stability of this rate of exchange is shown by H being geometrically on the contract curve. Even if transactions begin at a "false" price, the pressure of buyers or sellers would bring it to the equilibrium price represented by the tangent of the angle p . It would thus appear that the determinateness of equilibrium in the market under perfect competition can be logically proved without the necessity of making the assumption that the marginal utility of money remains constant throughout. Indeed, Marshall himself seems to have done this in the theory of international trade, where he shows the determination of the terms of trade on the basis of the demand-and-supply curves (or willingness-to-trade curves) of the two parties. Marshall's contention that even where there is a large number of buyers and sellers, the equilibrium rate in barter becomes indeterminate would thus appear to be an unwarranted extension of the result deduced from the study of bilateral monopoly to the case of perfect competition.

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¹ The seller's price-offer curve is deduced in the same manner as the buyer's price-consumption curve. It shows the different quantities of his good or service that the seller offers to sell at each of a series of prices.

THE GEOGRAPHICAL DISTRIBUTION OF ASSESSED INCOMES: A CORRECTION

I AM grateful to the Statistics and Intelligence Division of the Department of Inland Revenue for drawing my attention to an incorrect deduction in my note on the county results of the Income Census for 1949-50 which appeared in the *ECONOMIC JOURNAL* of June 1953. I had assumed that a classification based on main place of assessment would produce a distribution closer to place of residence than to place of work. In fact, this was not the case. In the great majority of cases the main place of assessment is that dealing with profits assessed under Schedule D or with wages and salaries under P.A.Y.E., and thus depends on place of work. As a result, the Income Census classification relates more closely to place of work than to place of residence although it conforms to neither.

The effect of this correction on the regional averages given in the note has been negligible. In principle, we may assume that the allocation of wages and salaries of members of the Civil Service, Armed Forces and Merchant Navy by employment data was a less crude procedure than had been feared. On the other hand, the adjustment of county results to Standard Regions on the basis of population data was a cruder procedure than we had suspected. There seems to be no appropriate way of refining the adjustment, but since it involved changes of less than 2% in the regional averages affected, the consequent inaccuracies are unlikely to be appreciable.

The general implications of the correction are more important. It would seem that we cannot escape from a place of work classification of earnings. All the existing official sources of data on regional earnings—Ministry of Labour earnings inquiries, Censuses of Production and Distribution and the Income Census—relate more closely to region of work than to region of residence. Only the Census of Population draws an unambiguous distinction between the two classifications; and since that deals with numbers only and not with earnings, the possibility of deducing a residential distribution of earnings is severely limited.

I should like to take this opportunity of apologising for and correcting an error that should have been corrected in proof. The regional average for London and South-east in Table I (the first figure in the table) should read £442 and not £464.

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PHYLLIS DEANE

STERLING BALANCES AND THE COLONIAL CURRENCY SYSTEM: A COMMENT

IN the *ECONOMIC JOURNAL* of December 1952 Mr. Hazlewood has a note on "Sterling Balances and the Colonial Currency System" which refers to an earlier note of mine on the Colonial Sterling Balances, and which is mainly concerned to prove that "Dr. Greaves' exposition fails to reveal the real burden, in the form of foregone imports, which the existing currency system imposes on the Colonies." This failure was not mere negligence. I do not think there is such a burden, and it is curious that Mr. Hazlewood should have derived one from the sources of information he cites. I should like therefore to comment on his examination of "the significance of the sterling funds which constitute the backing of the Colonial currency issues." As a result of this examination he reaches the conclusion—which is a striking one even if he is not assessing the merits and demerits of the system—that a colony's "sterling earnings, which would otherwise be available for purchasing imports of goods and services, are tied up in the reserves of the currency authority."

This is a serious misapprehension. In practice, the existence of currency funds does not alter the purchasing power of Colonial populations by one penny. Except for the statutory excess of 10% retained by the authorities from their own income, the currency funds are matched in full by currency in the possession of owners somewhere in the Colonies. Put another way, Mr. Hazlewood's argument means that the more currency the people in a colony have, the less are the sterling imports they are able to buy, which is palpably absurd besides being contrary to experience. He has reached this position by treating the currency funds as external investment maintained by local saving in the colonies, and his definition of this "saving" is currency in the hands of the public. There is room for inquiry into the meaning and validity of this definition, but it is enough here to note that to treat Colonial income, saved or not, as creating the currency funds is to put the cart before the horse, a process that may be sanctioned by usage where Colonial economic affairs are concerned, but which does not have the same result in fact or logic as the reverse arrangement. And in the Colonial currency system the London funds precede the distribution of Colonial income. It is when internal income in a colony declines for any reason, and historically a decline has been associated with a withdrawal of business funds

from the colony or the reduction of military disbursements, that the London funds of the currency authority also contract.

There is nothing in the currency system to prevent export producers in a colony spending all their income on imported goods if they want to do so, but the price these producers pay for imports necessarily covers various local costs of transportation and distribution. The statement that "income from exports constitutes a claim on imports, that is a claim on sterling," offers a far from realistic view of colonial monetary conditions. Currency incomes are distributed in a colonial territory for a number of reasons. Even in West Africa, the area to which Mr. Hazlewood is apparently referring, where the system of cash payments to produce growers is on a relatively larger scale than elsewhere, wages are paid by mining, timber, trading and transportation concerns, by military departments, and by Government, and disbursements are made by travellers. Some of these payments are for exports, visible and invisible, others, such as those to police and public utility employees, are not. But however earned these incomes can be spent on anything that is for sale in the territory, whether a domestic product, or a sterling or a foreign-exchange import.

The number of "ifs" and "mays" in Mr. Hazlewood's discussion make it difficult to know whether his argument should be taken as applying to actual events or only to certain theoretical contingencies of his own premises. However, only actual conditions can be relevant to the existing currency funds, and the stable expansion of the West African Currency Board issue since 1940 is not really evidence of colonial currency "retained by the trading companies or the banks to provide for their expanding currency needs." In the same article in the *Economic and Statistical Review* of the United African Company to which Mr. Hazlewood refers in another connection, there is an excellent illustration of the relation between interest rates in London and the movement of inter-seasonal bank balances from West Africa to the London money market. The reason for these transfers was the net return obtainable on the investment of temporary surpluses in London, and as the currency Board charges a commission on the transfer of currency in both directions, it has not been worthwhile to move excess cash to London for a few months of the year at the low rate of interest obtainable since 1933, and the banks have simply kept it in their local vaults. The Currency Board, therefore, has not been required to buy back a part of the marketing season's currency in each year, and

the banks have lost a certain amount of investment income by carrying idle funds, but this does not mean that the territory's sterling imports have been thereby reduced.

IDA GREAVES

New York.

OBITUARY

SIR HUBERT HENDERSON

1890-1952

THE death of Hubert Henderson on February 23, 1952, when his tenure of the Presidency of the Royal Economic Society was still uncompleted, has, in the words used in a note in this JOURNAL, deprived the country of one of the most vigorous and critical minds devoted to economic affairs. Since that note was written, the editors of *Oxford Economic Papers* have, with praiseworthy speed, issued a special memorial number consisting of tributes to his work in many fields; and by the time these lines are in print there may well have appeared a selection of his papers, gathered from many sources and many of them hitherto unpublished, which will afford a better opportunity than the present for an appraisal of his stature as an economist. But it is right that there should appear now in this place a brief record of his life and work. As a very old friend, bracketed with him in the same Cambridge Tripos, and in close touch with him in the old days of the *Nation* and the *Liberal Yellow-book*, I have been asked to undertake the task; if I do so with some diffidence, owing to a certain lack of sympathy with some of his later attitudes, I have the satisfaction of knowing that the balance has been, and will doubtless be further, redressed elsewhere.

Hubert Douglas Henderson, the son of a Glasgow banker, was born on October 20, 1890. After schooling at Aberdeen Grammar School and at Rugby, he went up to Emmanuel College, Cambridge, where he obtained a first class in Part II of the Economics Tripos in 1912. In the same year he became President of the Union: the picture of him at this date drawn by Lord Justice Birkett in the recently published history of that Society will be easily recognisable even by those who only knew him in later life.

"I shall always think of him as the best pure debater that I heard in my time. He had a habit of crooking a long forefinger at his immediate opponent as though he had got complete possession of him, and be certainly never let go

until he had reduced him to the equivalent of pulp. Relentless, pugnacious, inexorable—I scarcely know the right word to employ, but it was all done with consummate ease and grace; and, as the victim expired, Henderson never failed to produce a most radiant and indulgent smile.”

Those were the days of the great Liberal Government of 1906, and Henderson was an enthusiastic Liberal, though not, even in those days, a sentimental or uncritical one. Of an outstanding paper on the taxation of land values, read to Keynes's Political Economy Club but now unfortunately lost, I can remember only a phrase from the peroration “. . . the questionable statement that God made the land, and the still more questionable statement that he made it for the people.”

Unfit for military service, Henderson nevertheless did important work in the war of 1914–18 as Secretary of the Cotton Control Board, whose career he later recorded in the Carnegie series of monographs on the social and economic history of the war. At Cambridge he had become acquainted with a fellow-student of economics, Faith Bagenal, and during the war they were married. Of strong intelligence and calm temperament, with interests and contacts in some ways wider than his own, she brought a great deal into his life, and he became greatly dependent on her. They had three children, and I doubt if any man was ever more completely happy in his family life.

After the war Henderson returned for a few years to Cambridge as a Fellow of Clare and a University Lecturer in Economics. To this period belong his two books, the history of the Cotton Control mentioned above, and *Supply and Demand*, the first of the Cambridge Economic Handbooks. The latter remains a minor classic, in which the leading ideas of the theories of value and distribution are expounded with great clarity and vigour. Orthodox in many respects, according to the orthodoxy of those times, it was nevertheless openly critical (I would be prepared myself to say *too* critical!) of attempts such as are to be found in Marshall's pages to rehabilitate Ricardian doctrines of correspondence between value and “real costs.”

In 1923 Henderson was persuaded by Maynard Keynes, his old teacher and life-long friend, to leave Cambridge and take up the editorship of the weekly *Nation*, then starting a new lease of life under Keynes's chairmanship. Henderson's conduct of the paper over the next seven years was a notable episode in the history of independent and influential journalism; he himself contributed a long series of striking leading articles, written often

under much greater internal stress and turmoil than would have been gathered from their easy and confident style. Perfect understanding prevailed between chairman and editor; and the latter has himself recorded in generous terms the soothing and smoothing part played in this great editorial effort by another Cambridge economist and life-long friend, Harold Wright.

Another product of the resurgent, and strongly though selectively interventionist, Liberalism which Keynes and Henderson, under the benevolent eye of Lloyd George, and in close association with Ernest Simon, Ramsay Muir, Walter Layton and others, were striving to create was the Liberal Industrial Inquiry. Henderson served on its Executive Committee, and was partly responsible for the section of its Report (1928) dealing with the crucial subjects of National Development and the absorption of abnormal unemployment. On the same theme he collaborated with Keynes in 1929 in a pamphlet *Can Lloyd George Do It?* in support of the Liberal leader's election manifesto *We Can Conquer Unemployment*. It was perhaps partly the recollection that this vigorous piece of anti-slump economics had appeared at what turned out to be the top of a boom which rendered Henderson in later years so allergic to claims to have discovered the secret of the cure of unemployment.

This is not the place to attempt a final appraisal of the New Liberalism of 1923–30—that gallant and ambitious attempt to drive in harness certain uneasy pairs of horses, intensive national (including agricultural) development and unadulterated free trade, freedom of enterprise and drastic industrial “rationalisation.” It is enough to say that its Report has undoubtedly proved a happy hunting-ground for political parties in search of policies. But with the advent of the great slump the particular combination of forces which produced the movement melted away, never to be re-assembled. One may perhaps conjecture that in some ways the period that thus closed was one of the happiest in Henderson's adult life, because the most optimistic and that in which the ties of personal friendship coincided most closely with those of intellectual agreement and co-operation.

In 1930 Henderson left the *Nation* to become, at the invitation of the new Prime Minister, Ramsay Macdonald, assistant secretary and shortly afterwards joint secretary of the newly formed Economic Advisory Council—an experimental skiff whose successful launching among the formidable galleons of Whitehall called for a high degree of tact as well as of professional competence.

In point of fact the Council itself, which was to consist partly of Ministers and partly of eminent outsiders, soon fell into abeyance; but its small Secretariate, and its Committee on Economic Information, of which Stamp was Chairman and Keynes a prominent member, continued in existence until the outbreak of war. Of this Committee Henderson remained a pivotal member after he had resigned the Secretaryship of the Council, in order to take up a Research Fellowship at All Souls, in 1934. Sir Piers Debenham, who first assisted and then succeeded him as Secretary of the Committee, has painted in *Oxford Economic Papers* an authoritative picture of his activities and of the evolution of his ideas during this entire period. In the earlier years of acute international economic crisis the urgent problems of money and exchange naturally bulked largest in his thoughts and in his memoranda; and Debenham has given an interesting account of his prediction in May 1932 that the United States would abandon the gold standard, and of a scheme for increasing international liquidity by means of an issue of notes by the Bank for International Settlements for which at this time, still working in conjunction with Keynes, he was vainly pressing. Later, as the British situation settled down, leaving, however, large pockets of unemployed labour, he was able to devote more attention to longer-range issues. Even with Debenham's skilful help, I do not find it easy to reconstruct a very clear picture of his outlook at this period. He had lost a good deal of his enthusiasm for "public works"; he continued to emphasise the fundamentally self-righting tendencies always at work in an economic system beset by the admitted curse of cyclical fluctuation, and reacted violently against Keynes's attempt in the *General Theory* (1936) to construct a formalised doctrine of chronic under-employment equilibrium. But towards the end of the period he was losing faith in the efficacy of spontaneous cyclical movements of the rate of interest, while as regards the deliberate manipulation of that instrument we find him, in a paper in *Lloyds Bank Review* in June 1937, as reluctant as Keynes to modify the policy of cheap money in the face of rising demand. And his thinking seems to have been increasingly dominated by the importance which he attached to the declining rates of population growth in Britain and other western countries. Internally, this led him to a theory of growing technological unemployment and of the prolongation of slumps which is not very different in appearance from the stagnationist heresies which he condemned. Externally, it rendered him pessimistic about the future of international trade, since he fore-

saw a chronic decline in the demand of the western industrial countries for food and raw materials from overseas. Yet, though by now fully reconciled to the abandonment of complete free trade, he did not desire to reinforce strongly by conscious action the influences which he saw at work limiting the international division of labour. In 1935 he was still urging the importance of a revival of the export trades; and his longest and most sustained piece of argument in the period, the report written for a committee of inquiry organised by Lord Astor and published under the title of *The Agricultural Dilemma* (1935), was directed against the aim of making Britain more nearly self-sufficing in food production than she had, as the result of the protective measures of recent years, already become.

In 1938 a new opportunity of public service was offered to Henderson in the form of membership, under the chairmanship of Lord Moyne, of the Royal Commission on the West Indies. I have the impression that, not hitherto by taste or opportunity much of a traveller, he greatly enjoyed this experience. I think, too, that it completed his reconciliation to the system of Imperial Preference; and I have sometimes wondered whether his subsequent attitudes would have been at all different if fate had wafted him instead to some part of Africa, where, to put it mildly, that system worked less manifestly to the advantage of the colonial populations than in the sugar-growing West Indies. Work on the Commission's report continued to make demands on him even after he had become, early in 1939, a member of Lord Stamp's committee to co-ordinate departmental preparations for war—a body whose activities were continued after the war broke out; and in the early days of the "phoney war," when he shared for a time my lodging in London, I seem to remember twitting him with the difficulty I felt he was experiencing in regarding the war in any other light than as a minor episode in the history of the West Indies! But at last the Commission's report was completed (though not at the time published) and the Stamp Committee's labours at an end; and for the rest of the war the whole of Henderson was available, in a somewhat vaguely defined advisory capacity, to successive Chancellors of the Exchequer and their permanent officials, by all of whom his advice, if not always taken, was held in very high respect and regard.

In this capacity Henderson was concerned with many high matters of which in my own subordinate and more restricted occupation I knew and know nothing. But I was, of course,

aware of what everybody now knows—that he felt constrained to fight tooth and nail against the plans for Anglo-American post-war economic co-operation which it was decided, long before the war reached its close, to set on foot. It is not altogether easy to do justice to his attitude without doing injustice to that of others, alive and dead. There was, of course, no question of his absolute sincerity and single-mindedness; he was, in Harrod's words, "absolutely convinced that, as a matter of hard fact, we should have to resort to every conceivable device after the war to protect our balance of payments." But it can, I think, be reasonably held that he took more lightly than was permissible the obligation that had been undertaken, in return for lend-lease aid, to work towards greater freedom of international trade; and that his own fulminations from his ivory tower in the Treasury did less than justice to those on whom it fell, in the drive and sweat of drafting and negotiation, to secure due consideration of the prospective difficulties of Britain's post-war position. It is easy to say, as *has* been said, that "the world of 1953 is only too similar to the post-war world which, unlike some of his contemporaries, Henderson foresaw in 1943." But we do not know what the world of 1953 would have been like if no attempt had been made to welcome what was generous and constructive, as well as to counter what was unbalanced and doctrinaire, in the economic philosophy of the Roosevelt-Hull Administration—if, for instance, to descend from the general to the particular, there had been no shreds of that ill-fated I.T.O. Charter, on which Henderson concentrated the vials of his wrath, to gather into the unpretentious hands of the administrative organ of the General Agreement on Tariffs and Trade. Nevertheless it must be said that, both in this and other connections, the scepticism which he showed towards some of the rosier prophecies then current about the speed of Britain's post-war recovery was useful and salutary.

In 1945 Henderson was released to take up his appointment as Drummond Professor of Political Economy at Oxford. But even in the narrower sense his public service, which had been rewarded by a knighthood in 1942, was not at an end. From 1945 to 1948 he was chairman of the Statutory Committee on Unemployment Insurance. And in 1945 he was still a member of the Royal Commission on Population, and Chairman of its specialist Economic Committee. In May 1946 he succeeded Lord Simon as Chairman of the whole Commission and presided over the compilation of its report (how much of it he wrote is

anybody's guess), which was not signed till March 1949. Meanwhile he had found time to write an excellent memorandum for the less important but partially overlapping Royal Commission on Equal Pay.

It was remarked in 1949 that Britain seemed to be a very fortunate country; her rate of interest and her rate of exchange, so the Authorities assured us, were both just about the right height—and then came along the Henderson Commission with the glad news that her population was just about the right size too. Personally, sceptical of the two former assurances, I found (and find) myself little inclined to cavil at the third, and only ready to admire the skill and patience which Henderson must have displayed to steer to a unanimous conclusion his report on a subject so exposed to the blasts of conflicting fanaticisms.

To Henderson's services to economics at Oxford, both before and after his election to the Drummond Chair, the memorialists, in *Oxford Economic Papers*, Mr. Harrod and Mr. Worswick, have paid glowing and affectionate tribute. The celebrated pre-war interrogations of business men were largely his in design and execution; the Institute of Statistics owes much to his fostering care; and it is evident that, wisely or not, he allowed himself to be cumbered with mountainous labours of administration, yet managed to remain buoyant and approachable. From other sources too—those who worked with him during his presidencies of Section F of the British Association (1948–49) and of the Royal Economic Society (1950–52)—comes testimony of how unsparing he was of himself in every activity which he undertook.

There is abundant evidence too of the impact of his annually recurring but continually renovated series of lectures on "The Economics of the Modern World." Mr. Worswick has described how the optimistic young planners—dons and undergraduates—of the mid-1940s, ready to scoff at any economist of the benighted older generation, found themselves unable to scoff at Henderson. Unfashionable in some of his attitudes—he never relented towards the *General Theory*, he could never remember the difference between impure and imperfect competition, and in econometrics, according to Harrod, he "had no interest whatever"—he had the advantage of being clean of the supreme unfashionableness of nostalgia (one of his own favourite terms of opprobrium) for free trade or *laissez-faire*! (Perhaps if he had lived longer into the 1950s this particular freedom might, among the new generations of undergraduates if not among the now middle-ageing dons, have begun to prove a less valuable asset!)

For the outside world, there was a series of articles and "show-piece" addresses written with all the old lucidity, polish and punch. Let me list some of the most important, fighting down the temptation to subject them to extended comment. There was the Stamp Memorial Lecture (1946), hammering in his old theme of "the fundamental importance to any orderly international economic life of the objective of equilibrium in the balance of international payments." There was the Rede Lecture at Cambridge (1947) on "The Uses and Abuses of Economic Planning," with its attempt to draw a clear line between a plannable public sector and an unplannable private sector of economic life—a line fatally blurred, as it seemed to one hearer, by the inclusion of all imports on a permanent basis in the category of the to-be-planned. There was the British Association Address (1948) on the Price System, in which the hose of ridicule was switched away from the planners on to the advocates of freely moving prices and exchanges. There was the assault on the I.T.O. Charter in the *American Economic Review* (June 1949). There was the further attack in "The Future of Exchange Rates" (*Oxford Economic Papers*, January 1949) on the neo-liberal doctrine that flexibility of exchange rates can be made an acceptable substitute for quantitative regulation of imports. This last paper contains a proposal which, like Mr. Worswick though perhaps from a different angle, I find "startling and paradoxical," namely that if, though not until, quantitative regulation has failed to prevent the reserves from falling below a certain level, monetary policy should be abruptly brought to its aid in the extreme guise of a drastic statutory deflation of the note issue. This seems to me an instance—I would class as another his curious proposal (1943) for launching the State into business as a gigantic wholesaler of miscellaneous consumable goods—where a sudden feeling that he was being rather negative impelled Henderson into making a suggestion which if it had emanated from anybody else he would have pilloried as utterly impracticable.

In 1948 Henderson was elected a Fellow of the British Academy. In June 1951 came the crowning honour of his varied life—his election to the Wardenship of the unique society to which, an immigrant from another place, he had been made welcome seventeen years before, and his standing in which has been described in *Oxford Economic Papers*, in language of a dignity, aptness and simplicity worthy of its subject, by Mr. Isaiah Berlin. But simultaneously there came a sharp return of the cardiac

trouble which had caused alarm towards the close of his Treasury period, and whose background menace had added no little to the strain of the intervening years. In January 1952 he felt compelled to resign the Wardenship; and on February 23 he died.

Of his high accomplishment as a public servant and of his competence and distinction as a wielder of the written word to convey significant thoughts on important issues, there can be no doubt. Of his stature as an economist I am not able, perhaps no one at present is able, to make a firm appraisal. I do not think it would be well if all, or indeed many, writers on economics, still less all or many teachers of economics to the young, set so little store as he came to do by systematic presentation and formal analysis, or exhibited so much concern that everything said or written should have a direct practical bearing on the contemporary scene. But within his chosen limits—for they were chosen rather than prescribed by nature—it would seem that his intellectual achievement was of a very high order.

Of his personal qualities—his integrity and devotion to duty and freedom from self-seeking or conceit—I hope I have given some hint. But since I have dwelt a good deal on his professional pugnacity, I should like to end with a word which rightly crops up in more than one of the tributes to him which I have seen; the word is "gentle."

D. H. ROBERTSON

Trinity College,
Cambridge.

CURRENT TOPICS

ALL Fellows of the Royal Economic Society will wish to join us in offering our best wishes and congratulations to our Treasurer, Mr. H. C. B. Mynors, on his appointment for a term of five years to the office of Deputy Governor of the Bank of England.

WE regret to record the death of Mr. A. W. Ashby, till lately Director of the Institute for Research in Agricultural Economics in Oxford University. He was for sixteen years Professor of Agricultural Economics in the University of Wales at Aberystwyth, and played an active and prominent part both in the academic study of agricultural economics and in the making of agricultural policy as a member of various committees of the Ministry of Agriculture.

THE position and organisation of the Economic Section of the Cabinet Office has been considerably revised during the past few months. On the retirement of Sir Edwin Plowden from the office of Chief Planning Officer to the Government, Mr. R. L. Hall has become Economic Adviser to the Government and the Economic Section has been transferred from the Cabinet Office to the Treasury. The Economic Section will, however, retain its separate identity and discharge its present duties. The transfer of the Section to the Treasury reflects the arrangement under which responsibility for the central direction of economic affairs rests primarily with the Chancellor of the Exchequer. At the same time measures are being taken to strengthen the staff of the Section by economists on loan from the Universities, in most cases for periods of two years. In October 1952 Mr. C. R. Ross of Hertford College, Oxford, and Mr. J. M. Fleming of the University of Bristol joined the Section in this way; more recently Mr. I. M. D. Little, Fellow of New College, Oxford, also joined the Section for a two year period, and was appointed Deputy Director. By these means it is hoped to maintain close contact between academic work in economics and the advisory tasks of the Section, to the mutual advantage of both.

THE Third Annual Conference of the economists of the Scottish Universities was held at "The Burn," Edzell, from September 23 to 25, 1953, and like its predecessors was a most satisfactory and successful occasion. Three papers were read on the general theme of the dollar problem: "The Dollar Problem: a bird's eye view from the American angle," by Mr. Innes Smith of Edinburgh University; "Full Employment and the Balance of Payments," by Mr. A. D. Campbell of Glasgow University; and "Are there any 'Rules of the Game'?" by Mr. D. L. Munby of Aberdeen University. Each aroused lively discussion. The Business Meeting was largely concerned with reports by Professor Hamilton on negotiations which have led to the revival of the former "Scottish Society of Economists" under the new title of the "Scottish Economic Society," with Lord Bilsland as President; and by Professor Cairncross on progress with the new Society's *Scottish Journal of Political Economy*, the first number of which is to appear in the spring of 1954.

Houblon-Norman Fund. The Trustees of the Houblon-Norman Fund invite applications for Fellowships or Grants in

aid of research into the working of financial and business institutions in Great Britain and elsewhere and the economic conditions affecting them. Apart from exceptional cases, awards will be confined to British-born subjects normally resident in the United Kingdom and will take effect from October 1, 1954. Fellowships will be awarded for one year, renewable for a second year; and the amount of an award will depend upon the circumstances of the candidate and the likely expenses of his work. Applications should be made not later than March 31 and forms of application may be obtained from the Secretary of the Fund, c/o the Bank of England, London, E.C.2.

Nanga Parbat. We have received the following from Professor Frank Fetter:

"To the general public the news that on July 4, 1953, an Austrian-German team had reached the top of Nanga Parbat, the world's second highest mountain to be climbed, was simply an anti-climax to the conquest of Everest. To many economists undoubtedly it seemed a far call from economic theory. But for some who first learned Keynesian analysis, not from the critical literature, but from the text of the *General Theory*, the mention of Nanga Parbat must have aroused old memories.

"Keynes, referring to *The Physiology of Industry*, by Hobson and A. F. Mummery, said: 'Though it is so completely forgotten to-day, the publication of this book marks, in a sense, an epoch in economic thought.' Hobson's co-author, Mummery, was one of the most famous mountaineers of his day, and the first of twenty-nine men to perish in the last sixty years in the attempt to climb the treacherous Nanga Parbat. Hobson's own account of his contact with Mummery, as given in his *Confessions of an Economic Heretic*, was quoted in *The General Theory*:

"While teaching at a school in Exeter I came into personal relations with a business man named Mummery, known then and afterwards as a great mountaineer who had discovered another way up the Matterhorn and who, in 1895, was killed in an attempt to climb the famous Himalayan mountain Nanga Parbat. My intercourse with him, I need hardly say, did not lie on this physical plane. But he was a mental climber as well, with a natural eye for a path of his own finding and a sublime disregard for intellectual authority. This man entangled one in a controversy about excessive saving, which he regarded as responsible for the under-employment of capital and labour in periods of bad trade. For a long time I sought to counter his arguments

by the use of the orthodox economic weapons. But at length he convinced one, and I went on with him to elaborate the over-saving argument in a book entitled *The Physiology of Industry*, which was published in 1889.'

"To consider how history might have been altered had some past event been different is an intellectual recreation to be engaged in sparingly, but both devotees of mountain climbing and economic theory may be permitted a fleeting speculation as to how the course of history of their fields might have differed had 'the killer,' Nanga Parbat, not cut short the life of a pioneering man."

THE following have compounded for life membership of the Royal Economic Society :

Berry, T. E.	Heath, J. B.	Shah, B. N.
Chipman, J.	Kaufman, D.	Steve, Prof. S.
Deane, Miss P.	McAuley, D. F. J.	Taylor, O.
Domar, Prof. E. D.	Phelps, Prof. C. W.	Telfer, D. R.
Gass, O.	Robson, P.	

The following have been admitted to membership of the Society :

Addison, F. G.	Chib, P. C.	Frey, A.
Albert, A. F.	Chothia, H.	Gasperini, A. L.
Alexander, K. J. W.	Christ, C. F.	Godden, R. W. J.
Anderson, W. M.	Cifuentes, J.	Gopalakrishnan, P. S.
Andrews, T. J.	Clancy, E. A.	Grace, H. M.
Atta, W. O.	Craft, R. J.	Griffiths, S. P.
Baldua, P. L.	Cummins, R. L.	Haines, D. G.
Baron, B.	Davenport, R.	Hall, Dr. A. R.
Beath, J. G. Y.	Davies, A. J.	Hamilton, J. M.
Beresford-Cole, S. C.	Dawson, T. R. P.	Harbury, C. D.
Bernard, Miss P. L.	Dobbys, C. J.	Hargrave, G.
Betts, S. F. B.	Donner, Prof. Otto	Harrison, S. O.
Bisley, L.	Doran, Lt. Col. G.	Harsanyi, J. C.
Blackler, A. W.	Doss, Miss V.	Headford, C. G.
Brumberg, R. E.	Ellerby, R. R.	Henderson, J. M.
Bunle, H.	Ephson, I. S.	Hennessey, M. N.
Calodoukas, E. J. C.	Ferguson, C. B.	Herbert, C. H.
Carvalho, G. E.	Finn, H. P.	Herschel, Dr. F. J.
Chatterjee, B. L.	Franklin, A. J.	Heuvel, E. J.
Chester, J. R.	Fraser, T.	Hong, H. T.

Hudson, H.	Naidu, K. N.	Saxena, Dr. S. S.
Itzcovich, Dr. S.	Nevins, W. J.	Sehgal, T. R.
Jain, K. L.	Odate, G.	Sen, P. C.
Jenkinson, E.	Oertel, R. R.	Sevill, B.
Johanson, H.	Ogunmodede, J. O. D.	Sewell, C. W.
Johnson, R. G.	Olokesusi, Z. B.	Sewill, B. S.
Kerel, J.	O'Sullivan, L. G.	Shah, H. L.
Khan, M. R.	Otto, W. S.	Shah, J. M.
Khoury, M. N.	Page, A. N.	Shah, R. M.
Kiklhorn, V. T.	Palvia, Prof. C. M.	Sharma, K. D.
Kinley, V. W.	Parker, W. N.	Shelton, F. W.
Kori, G. S.	Parsons, E. C.	Sherwood, A.
Kravis, Prof. I. B.	Patel, P. C.	Sim, K. B.
Krishnaswami, O. R.	Patel, R. G.	Slee, I. H.
Kulig, A.	Paterson, D. F.	Smith, A. J.
Kumar, S. L.	Patil, Dr. N. P.	Squires, E. J.
Kundu, N. L.	Penman, J. W.	Starlight, L. L.
Law, W. J.	Phillips, K. S.	Strike, J. L.
Lendau, E.	Pilvin, H.	Suvarna, M. R.
Lentin, S. D.	Plaisted, J.	Swain, Mrs. S. B.
Lewand, F. J.	Povey, A. G.	Swinfen, T. B.
Liefmann-Keil, Prof. E.	Proctor, G. F.	Symes, E. C. A.
	Purmessur, L.	Taylor, L. H.
McCulloch, A. L.	Quinn, Mrs. I. W.	Tin, M. T.
Maddison, A.	Rams, E. M.	Tomlinson, R. V.
Magnus, G. E.	Randall, R. D.	Trinkl, F. H.
Maitin, L. P.	Rangaswamy, B.	Walsh, T.
Massing, A. H.	Rath, T. C.	Warburton, N.
Maung, M.	Redfearn, H. D.	Willer, E. F.
Meloe, T.	Reeve, J. F. P.	Williams, C. G.
Menon, T. K. P.	Rieger, P.	Williams, K. J.
Michael, D. O.	Saigal, A. N.	Winton, D. S.
Miller, E.	Sanders, H. J.	Yhap, A. R.
Moore, J. M. A.		

The following have been admitted to Library membership of the Society :

Banco Central del Ecuador, Quito.
Broken Hill Proprietary Company Ltd.
Central Bank of the Philippines, Manila.
College of Social Sciences, Puerto Rico.
Department of Trade & Industries, Nova Scotia.

Escola Livre de Sociologia e Politica, Sao Paulo.
 Federal Reserve Bank of Atlanta.
 Fisons, Ltd.
 Prudential Assurance Company, Ltd.
 Purdue University Agricultural Experimental Station.
 Rhodesia University College.
 Swarthmore College Department of Economics.
 University of Perugia.

A NUMBER of distinguished American economists are visiting the United Kingdom during this academic year. They include Professor Corwin D. Edwards, who holds the Pitt Professorship at Cambridge, Professor Talcott Parsons, who has been appointed to a visiting chair of Sociology in the University of Cambridge, and Professor Milton Friedman and Professor R. W. Pfouts, who are at Cambridge with Fulbright Professorships. Mr. W. Duane Evans of the United States Department of Labour is also visiting the Department of Applied Economics at Cambridge. At Oxford are Professor D. McCord Wright and Professor R. Nurkse.

A THIRD volume of the edition of Jeremy Bentham's *Economic Writings* edited by Dr. W. Stark will shortly be forthcoming. Fellows of the Royal Economic Society who wish to obtain it on special terms should apply to the Assistant Secretary, Royal Economic Society, 6 Humberstone Road, Cambridge, enclosing payment of 20s.

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VOL. IV, No. 3, SEPTEMBER 1953. *Conference of the British Sociological Association 1953. Impressions of the Conference*: T. H. MARSHALL. *Opening Address: The Relation Between Social Theory and Social Policy*: G. MYRDAL. *The Background to Passive Resistance (South Africa, 1952)*: L. KUPER. *Productivity and the Worker*: W. C. BALFOUR. *The Idea of Progress*: G. D. H. COLE.

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No. 1314, SEPTEMBER 1953. *Whither Germany?*: M. J. BONN. *Some Legal Aspects of the Finance Act, 1953*: C. B. DROVER. *Treasury Intervention in Bank Lending Policy*: I. MARSHALL.

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No. 11, MARCH 1953. *Trading in the Gambia*.

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NEW BOOKS

British

- ABEL-SMITH (B.). *The Reform of Social Security*. Fabian Research Series, No. 161. London: Fabian Publications, 1953. 8½". Pp. 41. 2s.

[This pamphlet provides a useful survey of the deficiencies of our present social security system and of possible methods of repairing them. Most of the author's proposals are fairly familiar. No benefits should be allowed to remain below National Assistance levels, and benefits should vary with the cost of living. The insurance principle should be abolished inasmuch as it makes benefits conditional on contributions, but the author thinks that there is something to be said on psychological grounds for retaining specially earmarked taxes to finance social security, and that the incidence of these taxes need not differ materially from that of present National Insurance contributions. The most original suggestion put forward is that the present system of retirement pensions should be replaced by benefits paid irrespective of actual retirement, graduated so as to rise from a relatively low level, at the age of, say, sixty-five, to the full level at the age of, say, seventy. Some conflict between equity and incentive to stay at work is inherent in deciding the conditions on which benefits should be available to the elderly, and the author does not succeed in establishing an altogether convincing case that his proposal represents an improvement on the present system.]

- ASHTON (T. S.) and SAYERS (R. S.) (Eds.). *Papers in English Monetary History*. London: Oxford University Press, 1953. 9". Pp. 167. 18s.

[The acting editors of *Economica* have here brought together nine papers published during or immediately before the war, which have since become scarce or difficult of access. Six of these come from *Economica*: four by J. K. Horsfield on banking and the Bank of England before 1844, and two by the late P. B. Whale, including his well-known "Working of the Pre-War Gold Standard." The others are "The Bullion Report Re-examined," by F. W. Fetter, from the *Quarterly Journal of Economics*, 1942; "The Bill of Exchange and Private Banks in Lancashire, 1790–1830," by Professor Ashton, from the *Economic History Review*, 1945, and the fourth chapter of Professor Sayers's *Bank of England Operations, 1890–1914*, which is now out of print. To these are added two more recent articles of similar interest, "Letters from a Young Lady" (letters relating to the failure of the banking firm of Sir Peter Pole and Co. in the crisis of 1825), from the *Three Banks Review*, 1950, and Professor Sayers's article on "Ricardo's Views on Monetary Questions," from the *Quarterly Journal of Economics*, 1953. The result is a most useful collection which will be welcomed by all students of British nineteenth-century monetary history.]

BJÖRK (L.). *Wages, Prices and Social Legislation in the Soviet Union*. Translated from the Swedish by M. A. Michael. London: Dennis Dobson, 1953. 8½". Pp. 199. 18s.

[This is a valuable factual survey of social legislation in the U.S.S.R. The subjects covered include wages and conditions of work, taxation, social security, housing and retail prices. The book is mostly made up of a summary of the regulations found in laws, directives and other such sources, and the author does not attempt any critical discussion or assessment. Statistical information on wage-rates, social security benefits, prices, etc., is given where possible, and for this purpose the author supplements the figures available in official publications from his own observations on a visit to Moscow in 1949.]

BOURDE (A. J.). *The Influence of England on the French Agonomes 1750-1789*. London: Cambridge University Press, 1953. 8½". Pp. v + 250. 31s. 6d.

[To be reviewed.]

BOYD ORR (LORD). *The White Man's Dilemma. Food and the future*. London: Allen & Unwin, 1953. 7½". Pp. 124. 9s. 6d.

[This is a clear and workmanlike introduction to world food problems. After a brief discussion of the relation between nutrition and health, Lord Boyd Orr goes on to quote figures showing the extent to which the amount of the world's major food products available per head is estimated to have fallen since before the war. He suggests that, although the decline in the birth-rate experienced in advanced countries will probably extend ultimately to the rest of the world, this is unlikely to happen quickly enough to prevent world population from rising to at least twice its pre-war level. Most of the rest of the book is devoted to discussion of means of increasing world food production, with special reference to the prevention and reversal of the process of soil erosion. Lord Boyd Orr maintains that, even without further advances in technical knowledge, the world is in principle capable of supporting a population of 6,000 millions. It follows that the extent to which food production will actually increase will depend above all on the amount of capital expenditure which governments see fit to devote to the purpose.]

BRAY (F. SEWELL). *Four Essays in Accounting Theory*. London: Oxford University Press, for the Incorporated Accountants Research Committee, 1953. 8½". Pp. 94. 15s.

[To be reviewed.]

BRITISH ELECTRICAL DEVELOPMENT ASSOCIATION. *Electric Resistance Heating. Electricity and Productivity Series, No. 5*. London: British Electrical Development Association, 1953. 9". Pp. 182. 9s.

[This is the fourth in a series dealing with specialised industrial applications of electricity. After an introductory survey of the principles involved, it goes on to describe many types of electric heating equipment and the purposes for which they are adapted. 170 illustrations are included.]

BRITISH TRAVEL AND HOLIDAYS ASSOCIATION. *Twenty-Fifth Annual Report for the Year ended March 1953*. London: British Travel and Holidays Association, 1953. 8½". Pp. 44.

[This report contains, amongst other things, particulars of Britain's tourist trade in 1952 and an analysis of expenditure by foreign tourists in Britain during that year. Britain's balance of payments on tourist account was a good deal more favourable in 1952 than in 1951, partly because of an increase in receipts from overseas visitors (chiefly from the dollar area), but more largely from a decline in payments by British residents travelling abroad.]

CAIRNCROSS (A. K.). *Home and Foreign Investment 1870-1913. Studies in capital accumulation*. London: Cambridge University Press, 1953. 9½". Pp. 251. 30s.

[To be reviewed.]

CENTRAL BANK OF CEYLON. *Annual Report of the Monetary Board to the Minister of Finance, for the year 1952*. Colombo: Central Bank of Ceylon, 1953. 10". Pp. 81, and charts.

[The report contains, as usual, full statistical tables relating to economic events in Ceylon during the year and to the operations of the Bank. The introduction discusses the causes and consequences of the heavy fall in the island's external assets which was the chief feature of 1952.]

COLE (G. D. H.). *Attempts at General Union. A study in British trade union history 1818-1834*. London: Macmillan, 1953. 7½". Pp. v + 218. 16s.

[To be reviewed.]

DALTON (H.). *Call Back Yesterday. Memoirs 1887-1931*. London: Frederick Muller, 1953. 9". Pp. v + 330. 21s.

[To be reviewed.]

DONALD (D. W. A.). *Compound Interest and Annuities-Certain*. London: Cambridge University Press, 1953. 8½". Pp. vii + 300. 20s.

[This is a text-book for actuarial students. It is intended to serve as a less exhaustive and more strictly practical treatment than Todhunter's standard text-book. The earlier chapters on the general principles of compound-interest calculations may be found helpful by non-mathematical economists interested in the theoretical problems connected with long-term rates of growth.]

DUE (J. F.). *Provincial Sales Taxes. Report of a survey of retail sales taxes in Canada*. Canadian Tax Paper, No. 7. Toronto: Canadian Tax Foundation, 1953. 9". Pp. 231. \$2.50.

[The difficulty of finding sources of revenue not already sequestered by the Federal government or by local governments has led to the adoption of retail sales taxes by five of the ten provinces of Canada. The rates of tax vary from 2 to 4%. The author discusses in detail the constitutional, administrative and economic problems involved. The latter include notably the treatment of services and of producers' goods. The tax has become a major source of revenue for the provinces concerned, and in the author's view it is likely to remain so.]

FRANKEL (S. H.). *The Economic Impact on Under-Developed Societies. Essays on international investment and social change*. Oxford: Basil Blackwell, 1953. 9". Pp. v + 179. 15s.

[To be reviewed.]

GILBERT (M.) (Ed.), for the International Association for Research in Income and Wealth. *Income and Wealth, Series III*. Cambridge: Bowes & Bowes, 1953. 8½". Pp. v + 261. 35s.

[To be reviewed.]

GILLESPIE (S. C.). *A Hundred Years of Progress. The record of the Scottish Typographical Association 1853 to 1952*. Glasgow: Robert Maclehose for the Scottish Typographical Association, 1953. 9". Pp. vii + 268. 25s.

[To be reviewed.]

GRESSWELL (R. K.). *Sandy Shores in South Lancashire. The geomorphology of South-west Lancashire*. Liverpool: Liverpool University Press, 1953. 8½". Pp. 194. 30s.

[This is a detailed study of the geomorphology of the coast of South-west Lancashire, based on many years' field-work in the area.]

GUNSTON (C. A.) and CORNER (C. M.). *Glossary of German Financial and Economic Terms*. London: English Universities Press, 1953. 7½". Pp. 122. 12s. 6d.

[This is a valuable supplement to any standard German-English dictionary. It serves two useful purposes. First, it aims to give the full appropriate technical explanation of a technical economic term, with sufficient explanation to help a reader. Second, it gives the meanings of new terms which have recently come into use, or have acquired a new specialised meaning. It will be a very valuable stand-by for anyone who works regularly with material in the German language, however well he may know that language for ordinary purposes.]

HASWELL (M. R.). *Economics of Agriculture in a Savannah Village*. London: H.M.S.O. for the Colonial Office, 1953. 13". Pp. 142. 15s.

[A report on three years' study of Genieri Village in the Gambia. It includes an analysis of the social organisation of the village, its natural resources of land, stock, tools and equipment. It goes on to the choice of produce—usually millet or groundnuts—factors affecting costs, and the use and efficiency of labour. The author finally attempts some conclusions on native farming, on social changes and on the possible functions of mechanisation in relation to native farming. Miss Haswell stresses the fact that the native farmers of the Gambia "apply their minds to the serious business of farming, and to win their confidence it is well to obtain a thorough grasp of their own approach to farming . . . they seem much more prepared to advance if what they do not know can be explained in terms of what they do know." The author is to be congratulated on a very useful study, which will be of great value to any general economic work on that part of Africa.]

HOLMSTROM (J. E.). *Facts, Files and Action in Business and Public Affairs*. Part II. Filing, indexing and circulation. London: Chapman & Hall, 1953. 8½". Pp. v + 280. 32s.

[This is the second part of the work noted in the *Economic Journal* of June 1952 (p. 468). The first part was primarily bibliographical. The present volume is of rather a different character, and is devoted to a full treatment of different methods of filing, classification, indexing and reproduction. It is marked by the same qualities of ingenuity and conscientiousness as its predecessor, and is likely, perhaps, to be found even more useful. A notable feature is the inclusion of many illustrations of different types of office and library equipment, ranging from simple indexing devices to elaborate electronic machines.]

HOYLE (F.). *A Decade of Decision*. London: Heinemann, 1953. 7½". Pp. vii + 175. 6s.

[Emigration to solve Britain's problems, birth control to solve the world's problems—these are the twin remedies prescribed by the author. Mr. Hoyle has all the enthusiasm of one who has only just discovered that many or most of the pronouncements made by politicians and journalists about economic affairs in the course of party controversy do not rise above the puerile. After demonstrating this in his first chapter, he goes on to argue that the optimum population for Britain is not above 25 millions, and that emigration of about half our present population to the underpopulated areas of the Commonwealth is the only way to avert economic ruin and also physical destruction in the event of war. The third chapter contains a sensible discussion of the possibilities of increasing world food production, some decidedly shaky generalisations about trends in human fertility and the conclusion that birth control offers the only hope. Mr. Hoyle concludes with an interesting outline history of man, designed to show that the relation between population and resources has governed the rise and fall of civilisations since prehistoric times. The author's confident enthusiasm is apparent both in the advocacy of his main theses and in his many polemical digressions. Few would wish to dissent from the propositions that balanced emigration of a certain amount would be helpful to Britain and that unrestrained population growth must keep world living standards low. But the author's evident unfamiliarity with the literature of the subject prevents his tract from ranking as a serious contribution to it. Many of his arguments are one-sided to the point of fallacy, and in particular the reasoning by which he reaches the figure of 25 millions for Britain's optimum population will hardly bear examination.

It is assumed, for example, with scarcely any discussion, that the proportion of the labour force engaged in tertiary production and in construction could without difficulty be reduced to not more than 20%, and no reference is made to the fact that a proportion in the region of 50% is at present common to Britain, the United States, Canada and Australia.]

HUGGINS (H. D.). *Unity and Economic Development*. An address given at the 1952 annual general meeting of the Jamaica Imperial Association. Jamaica: Institute of Social and Economic Research, University College of the West Indies, 1953. 9½". Pp. 8.

[The subject of this address is the need for capital investment in Jamaica. The author gives estimates of the amount of capital needed to provide jobs for the island's unemployed, and considers possible sources of capital and the most promising forms which investment might take. The title of the address springs from his conviction that the objective of economic development, made possible by capital investment, is capable of providing a powerful unifying force in the island's political and social life. The author is Director of the Institute of Social and Economic Research at the University College of the West Indies.]

JOHNSON (H. G.). *The Overloaded Economy*. The economic problems of Great Britain. Toronto: University of Toronto Press, 1952 (London: Geoffrey Cumberlege, 1953). 9". Pp. 48. 6s.

[This pamphlet contains three lectures delivered at Toronto at the end of 1952 by Mr. Johnson, Fellow of King's College, Cambridge. His purpose was to present clearly but in short compass the problems confronting the British economy. In this he has succeeded admirably. The first lecture, entitled "The Overloaded Economy," stresses the pressures that have emerged from a simultaneous effort to tackle the problems of international balance, defence, social welfare, consumption standards and the modernisation of industry. He shows how these objectives, pursued in conditions of full employment, free wage bargaining and "fair shares," have kept the economy not merely at full stretch, but in a state of continual strain, so that it was excessively vulnerable and, because objectives were unfulfilled, policies were very difficult to change. His account of "The Sterling Crisis" in the second lecture has by now dated somewhat; but the essentials remain. A most interesting suggestion is that Canada might reverse the direction of the North American triangle, and become a source of dollars to Europe. But the main emphasis is on greater recognition of Britain's relative poverty and her inability to act in future as a main source of savings for the whole Sterling Area. The final lecture—"The Attrition of the Welfare State," Mr. Johnson discusses how far the concepts of war-time and early post-war years have been modified by the combined forces of hard reality and of inflation. He brings out the often paradoxical inequities of house-rents in relation to allowances, the decline of poverty, and the great improvements and the maintenance of the broad commitment of both major political parties to the welfare state. But he ends with a warning of the perils of growing outlines of the welfare state. The total picture of Britain that emerges is fair; it manages most successfully to avoid the perils of one-sidedness and of political prejudice.]

KING (F. H. H.). *The Monetary System of Hong Kong*. Far East Economic Studies, No. 1. Hong Kong: K. Weiss, 1953. 7½". Pp. 151. \$10.

[The author describes the present monetary system of the Colony and its evolution since the crisis of 1935, when the silver standard was abandoned. Hong Kong is one of the few remaining parts of the world where the currency supply consists chiefly of the notes of privately-owned banks—in this case principally the Hong Kong and Shanghai Bank. The author, who is Lecturer in Economics in the University of Hong Kong, suggests that what is wrong with the present system is not so much the private issue of notes as such but the lack of public control over the banking system and the inflexibility of such controls as do exist. In particular, the total money supply under the present regime is governed by the balance of payments, and Mr. King argues that whatever merits this arrangement may have had in the past, it is likely to become less appropriate in the future in view of the probable shift of the Colony's economy away from the entrepot trade towards manufacturing industry.]

KUCZYNSKI (R. R.). *A Demographic Survey of the British Colonial Empire. Volume III: the West Indian and American Territories.* London: Oxford University Press under the auspices of the Royal Institute of International Affairs, 1953. 10". Pp. v + 493. 70s.

[This is the third volume of the great survey for which the late Dr. Kuczynski had collected material before his death in 1947. The first two volumes were reviewed by Dr. E. Grebenik in the *ECONOMIC JOURNAL* of September 1952. This further volume has been completed for publication, and brought up to 1948, by Dr. Kuczynski's daughter, Dr. B. Long. It covers all the British West Indies, the Falkland Islands, and St. Helena, Ascension and Tristan de Cunha.]

LACEY (K.). *Profit Measurement and Price Changes.* London: Pitman, 1953. 8½". Pp. v + 129. 20s.

[To be reviewed.]

LANE (F. C.) and RIEMERSMA (J. C.) (Eds.). *Enterprise and Secular Change. Readings in economic history. American Economic Association Series.* London: Allen & Unwin, 1953. 9". Pp. v + 556. 32s.

[To be reviewed.]

McKECHNIE (A. C.). *Notes on a Visit to Panama, Honduras, El Salvador and Guatemala.* London: Federation of British Industries, 1953. 8½". Pp. 19. 2s.

[The author of this pamphlet is head of the Latin American Department of the Federation of British Industries. His notes deal briefly with the economic resources of the four countries and at greater length with the possibilities of expanding British exports to them.]

MADGE (J.). *The Tools of Social Science.* London: Longmans, 1953. 9". Pp. vii + 307. 25s.

[To be reviewed.]

Management Under Nationalisation. Studies in decentralisation. London: Acton Society Trust, 1953. 8½". Pp. 79. 7s. 6d.

[The authors of this report are T. E. Chester and J. H. Smith. The problem of decentralisation, as experienced both in nationalised industries and in other large organisations, has, they suggest, two chief aspects: the length of the chain of command and the organisation of specialist departments. The issues involved are illustrated in four case studies which make up the bulk of the report. The first three look at the matter from the point of view of the operational manager—an Area General Manager in the coal industry, a power-station superintendent and a district manager in the Road Haulage Executive—while the fourth is on the Wales Gas Board. The authors conclude that, although there is much to be said in favour of allowing greater power to the operational manager, many of the changes in his position that have accompanied nationalisation are to be regarded as the inevitable consequences of underlying trends in technology and industrial organisation.]

MARTIN (A.) and LEWIS (J. P.). *Welsh Economic Statistics. A handbook of sources.* Cardiff: Department of Economics and Social Science, University College of South Wales and Monmouthshire, 1953. 13". Pp. 96. 8s. 6d.

[This handbook was prepared originally as a guide to those engaged on the work in progress at University College, Cardiff, on the Welsh economy. It contains detailed descriptions of the scope of the statistical information available on different aspects of the economy of Wales from government publications and a few other sources. The handbook should be of great service to all interested in Wales and in regional economic studies generally.]

MEEK (R. L.) (Ed.). *Marx and Engels on Malthus. Selections from the writings of Marx and Engels dealing with the theories of Thomas Robert Malthus.* London: Lawrence & Wishart, 1953. 9". Pp. 190. 15s.

[To be reviewed.]

MYRDAL (G.). *The Political Element in the Development of Economic Theory.* Translated from the German by Paul Streeten. The International Library of Sociology and Social Reconstruction. London: Routledge & Kegan Paul, 1953. 9". Pp. v + 248. 25s.

[To be reviewed.]

THE NUFFIELD FOUNDATION. *Report for the year ended 31 March 1953.* London: The Nuffield Foundation, 1953. 8½". Pp. 109.

[This contains the usual full account of work carried on with the assistance of the Foundation. Grants made for research in the social sciences—which, of course, absorb only a relatively small proportion of the Foundation's resources—include at present support given to the social aspects of the work of the National Institute of Social and Economic Research, to the pilot social survey of Oxford and to the Population Investigation Committee.]

NURKSE (R.). *Problems of Capital Formation in Underdeveloped Countries.* Oxford: Basil Blackwell, 1953. 9". Pp. 163. 15s.

[Reviewed in this issue.]

PAISH (F. W.). *Business Finance.* London: Pitman, 1953. 9". Pp. v + 144. 12s. 6d.

[To be reviewed.]

RICHARDS (E. R.). *Shoemenders. A study of goodwill in industry.* London: Allen & Unwin, 1953. 7½". Pp. vii + 91. 9s. 6d.

[This is the story of H. H. Payne, Ltd., a firm of shoe-repairers, which started from nothing in 1908 and now has over six hundred employees in 120 shops in the Birmingham area. What he heard of the firm fascinated Prof. Bowie, who before his death had collected, with the help of Mrs. Grieb, material for a study. This had to be put aside, but later some use was made of it when Mr. Payne persuaded Mrs. Richards to undertake the job of writing this story. Shoe-repairing, when Mr. Payne first set up, was a "gutter trade." He has managed to make his shops efficient and his workers respected and happy to remain for years. In this, a system of sharing profits and losses has played a central part. But, if one may judge from the book, a policy of very democratic self-management and intimate personal touch has been equally important. There is a great deal here to interest all concerned in human relations in industry.]

ROBINSON (JOAN). *On Re-Reading Marx.* Cambridge: Students' Bookshops, 1953. 8½". Pp. 23. 2s.

[The three witty and subtle short papers brought together in this pamphlet contain characteristic variations on the theme of the relation between Ricardo, Marx, Marshall and Keynes.]

SCHLESINGER (R.). *Central European Democracy and its Background. Economic and political group organization. The International Library of Sociology and Social Reconstruction.* London: Routledge & Kegan Paul, 1953. 8½". Pp. v + 402. 30s.

[To be reviewed.]

SILVERMAN (H. A.). *The Groundwork of Economics.* 4th Edition. London: Pitman, 1953. 7½". Pp. v + 141. 8s. 6d.

[A fourth edition of a small text-book designed for use in schools, with the requirements of the General Certificate especially in mind. It has been generally revised and brought up-to-date.]

SMITH (W.) (Ed.). *A Scientific Survey of Merseyside*. Prepared for the meeting of the British Association held in Liverpool, 2nd to 9th September, 1953. Liverpool: Liverpool University Press, for the British Association, 1953. 9½". Pp. vii + 299. 21s.

[To be reviewed.]

STONIER (A. W.) and HAGUE (D. C.). *A Textbook of Economic Theory*. London: Longmans, 1953. 8½". Pp. v + 501. 25s.

[Reviewed in this issue.]

UNILEVER LIMITED. *Synthetic Detergents*. London: Unilever, 1953. 8". Pp. 16.

[The speaker describes in this address the present state of world demand for soap and for synthetic blended detergents and considers likely future developments. Among the points raised are the smaller element of raw material costs in the total cost of blended synthetics compared with soap, and the entry of chemical manufacturers to the detergent industry that has been made possible by recent technical developments.]

WARD (W. R.). *The English Land Tax in the Eighteenth Century*. London: Oxford University Press, 1953. 9". Pp. 188. 21s.

[To be reviewed.]

Indian

DESAI (R. C.). *Standard of Living in India and Pakistan 1931-32 to 1940-41*. Bombay: The Popular Book Depot, 1953. 10". Pp. 286. Rs. 20.

[This book is basically a Doctorate Thesis of the University of Cambridge. Some of the results were published in the *Journal of the Royal Statistical Society* for 1948. As its author suggests, it will provide a very useful link between the earlier estimates of Prof. Rao and the more recent estimates of the Indian National Income Committee. Dr. Desai's estimate of consumer expenditure in India and Pakistan for 1931-32 is Rs. 82.5 per head; the estimate of national income by Prof. Rao, when adjusted to the same area would probably be a little below Rs. 65 per head. Thus Dr. Desai's calculations suggest an appreciably higher national income than those of Prof. Rao. Dr. Desai's estimates for later years, down to 1940-41, suggest that there was a slow decline in consumption per head, which may have fallen by 4% or thereabouts, between 1931-34 and 1938-40.]

DANDEKAR (V. M.). *Report on the Poona Schedules of the National Sample Survey (1950-51)*. Gokhale Institute of Politics and Economics, Publication No. 26. Poona: Gokhale Institute of Politics and Economics, 1953. 9". Pp. 228. 9s.

[In 1950-51 the Government of India planned a multi-purpose National Sample Survey. The survey was conducted, after failure to secure agreement, on two separate sets of questionnaire schedules, one prepared in Calcutta and the other at Poona. This volume presents the results of the Poona inquiry.]

MUNSHI (M. C.). *Industrial Efficiency*. Bombay: Vora, 1953. 7½". Pp. 281. Rs. 8.

[This small book falls into two parts. In the first three chapters Dr. Munshi discusses the general problems of industrial progress, its causation and conditions. In this he relies largely on evidence of changes in American and European countries, but stresses the fundamental differences of advanced and "under-developed" countries. In the last three chapters he discusses the economic development of India: he begins with a brief history of nineteenth-century developments, and goes on to trace the effects of the two wars and of post-war planning. Dr. Munshi emphasises that the measurement of the efficiency of an economy is still in the experimental stage, and pleads for further inquiries into the efficiency of particular industries by the Indian Tariff Commission.]

NAIK (K. N.). *The Co-operative Movement in the Bombay State. Studies in Indian Economics*, Vol. 19. Bombay: The Popular Book Depot, 1953. 9". Pp. v + 282. Rs. 10/8.

[The author has attempted a frank and critical appraisal of the half century of history of co-operation in the State of Bombay. He argues that the movement needs a new infusion of energy and enthusiasm if it is to play its full part in Indian economic development. He would not agree that past weaknesses have been due to over-much government support and insufficient dependence on private activities; he would seek the explanations rather in the character of the government. But, above all, he stresses the need for the simpler virtues of efficiency and hard-headed business competence.]

American

ALLBAUGH (L. G.). *Crete. A case study of an underdeveloped area*. Princeton: Princeton University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. vii + 572. 48s.

[The results of a sampling survey—"a scientifically selected house-to-house canvass"—of Crete in 1948 are incorporated in this book. Rather more than half is devoted primarily to a description of social conditions; the remainder to appendices giving tables of statistics, sampling schedules and a commentary on the statistical methodology. Apart from the second and third chapters, which attempt to sum up the problems and their possible solutions, almost the whole is devoted to a description in great detail of the material aspects of life in Crete. The result is a book which is difficult to read, as much of the detail could have been better put in tabular form in an appendix or treated more selectively. The inclusion of so much in the text leads to an impression of monotony and lack of emphasis on fundamentals; the chapter on resources ranges from land and water, resources of the greatest importance in an area of karst limestone with a Mediterranean climate to such trivialities as "beach facilities were available for bathing but these were without accommodations." There is little attempt to interpret the present in terms of the island's physiography, history and general world conditions, a method which would probably have resulted in the reader gaining a better understanding than he does from the knowledge that Cretans frequently dip their bread into their sauce and that few households have refrigerators. The conclusion, to be found in the introductory chapters, is that Crete has no national resources for any great new developments, and that hope lies in such things as improvement of farming methods, irrigation, better use of the deforested limestone mountains, encouragement of local food-processing industries and, possibly, development of the tourist trade.]

BERGSON (A.) (Ed.). *Soviet Economic Growth. Conditions and perspectives*. Evanston, Illinois: Row, Peterson, 1953. 9½". Pp. v + 376. 38s. 6d.

[To be reviewed.]

BERGSON (A.). *Soviet National Income and Product in 1937*. New York: Columbia University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. vii + 156. 30s.

[To be reviewed.]

BOULDING (K. E.). *The Organizational Revolution. A study in the ethics of economic organization*. New York: Harper (London: Hamish Hamilton), 1953. 8½". Pp. vii + 286. 25s.

[To be reviewed.]

BROWN (W. A.) and OPIE (R.). *American Foreign Assistance*. Washington, D.C.: The Brookings Institution, 1953. 9½". Pp. v + 615. \$6.

[To be reviewed.]

BURNS (A. F.). *Business Cycle Research and the Needs of our Times. Thirty-Third Annual Report of the National Bureau of Economic Research.* New York: National Bureau of Economic Research, 1953. 9". Pp. 86.

[In the address which precedes the customary detailed report on the National Bureau's current activities, Dr. Burns argues that the experience of economic fluctuations in the United States in recent times reinforces the judgement that "the causes of varying degrees of severity of business contraction are to be sought primarily in the developments that precede them." A significant new orientation of the National Bureau's work is foreshadowed in Dr. Burns's suggestion that the time is now ripe for more methodical study of contra-cyclical policies.]

BUTTERS (J. K.), THOMPSON (L. E.) and BOLLINGER (L. L.). *Effects of Taxation. Investments by Individuals.* Boston: Harvard University Graduate School of Business Administration, 1953. 8". Pp. v + 533. \$6.25.

[To be reviewed.]

CIRIACY-WANTRUP (S. V.). *Resource Conservation. Economics and policies.* Berkeley, California: University of California Press (London: Cambridge University Press), 1953. 9½". Pp. 395. 49s.

[This is a tedious book. In all its 395 pages there is no sign that the author has himself ever taken a decision over the use of natural resources or knows the practical problems incurred. His lengthy discussions on the optimum rate of use of a resource in the abstract seem to have no connection with the real problems of using oil at Abadan or forests in Oregon or water in the Tennessee Valley; land tenure, taxation, interest rates, an increase in national income, all appear in a glass darkly, only in so far as they may effect a theoretical decision by an incorporeal "planning agent" (which has "habit patterns") on the time distribution of physical outputs of a natural resource of an unspecified type in an unnamed location. Scattered through the book are useful pieces of analysis and of description of current American practice; but the two are never related, and seem indeed to have been purposely separated by a rigid distinction between theory and administration. The author tells us on p. 32 that his terminology in earlier publications led to "semantic blocking," and the defect has not been cured in the present volume, which is full of woolly phrases and incredibly sententious judgements on matters that are largely irrelevant. Is it worth using natural resources of pulp to tell us that "social institutions are important in many fields of human relations"? If Professor Ciriacy-Wantrup had confined himself to the major resources of the United States; if he had shown precisely how their use had been influenced by Federal and State Governments whose machinery for resource conservation is here described; if he had linked his suggestions for administrative improvement with his theoretical critique; then his book might have had a purpose and possibly some pleasure for its readers. As it stands, the theory lacks a framework of reality, and the description is unrelated to the theory.]

COREY (E. R.). *Operating Results of Limited Price Variety Chains in 1952.* Boston, Mass.: Harvard Graduate School of Business Administration, 1953. 11". Pp. v + 30. \$2.

[The year's results show an increase in sales and in gross margins, but increases in expenses were somewhat greater, so that net gains both before and after taxes registered a slight decline.]

CRUM (W. L.). *The Age Structure of the Corporate System.* Berkeley, California: University of California Press, 1953. 9½". Pp. ix + 181. \$3.50.

[To be reviewed.]

FERBER (R.). *A Study of Aggregate Consumption Functions.* National Bureau of Economic Research, Technical Paper No. 8. New York: National Bureau of Economic Research, 1953. 12". Pp. 72. \$1.50.

[The chief value of this interesting study is perhaps methodological, but it serves also as a useful source of reference on the formulations of the consumption function that have been drawn up by different authors. After summarising some twenty-four of these, the author considers first what treatment of prices, population, income distribution, lags and other cyclical factors seems most appropriate *a priori*, and what treatment has in fact been adopted by the various authorities. In his second chapter Mr. Ferber recalculates the chief formulations to take account of subsequent revisions of the data, and then proceeds to consider the comparative success of each of these functions—all calculated on the basis of inter-war data—in "predicting" consumption and savings for 1947-50. Many interesting results emerge. The one that leaps first to the eye is that closeness of fit in the inter-war period provides no criterion of success in forecasting, since some of the best-fitting functions yield some of the worst forecasts. On closer examination it emerges that closeness of fit as normally measured depends largely on the period covered: authors who exclude 1931-34 from their calculations or who take 1923-40 get less closely fitting functions than those who take as the basis of calculation the years 1929-40, in which depression predominated. The reason for this is the purely technical one that fluctuations in income and savings in 1931-34 were of such large amplitude. Functions based on 1929-40, however, yield very erroneous forecasts for 1947-50. The best forecasts appear on the whole to be obtained from functions which make some explicit provision for cyclical effects, e.g., by including past highest income as a variable. The latter method, however, does not seem to constitute a complete provision for cyclical disturbances, since even functions where it is adopted show a lower marginal propensity to save when fitted to the years 1923-30, 1935-40 (omitting the bottom of the depression) than when fitted to the full period 1923-40.]

FISHER (L. H.). *The Harvest Labor Market in California.* Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. vii + 183. 36s.

[The problems of casual labour in Californian agriculture have been extensively studied and reported on in the past, and the author of the present interesting and well-written monograph concentrates his attention on certain particular aspects of the subject. These include the development and present functioning of the system by which harvest labour is made available to growers through contractors, and the procedure by which wage-rates are fixed unilaterally by the employers' association. The author emphasises that the largely successful endeavours of growers to keep in existence a permanent over-supply of labour have been actuated less by a desire to keep down wage-rates than by a desire to be able to get in the harvest in the shortest period of time so as to provide a safeguard against fluctuations both in the weather and in prices. In his view, the means of remedying the undoubted and serious abuses present in the Californian agricultural labour market are in principle fairly well understood, and do not differ in essentials from those that have been successfully applied to other seasonal industries employing casual labour. The hitherto insuperable difficulty has been a political one, and stems from the strength of the growers both in national politics and still more at the level of local administration. In the instances where the government has intervened in the past, its role has turned out to have been "to place the stamp of legitimate authority upon the private agreements of employers."]

GARVY (G.). *The Development of Bank Debits and Clearings and their Use in Economic Analysis.* Washington: Federal Reserve Board of Governors, 1952. 9". Pp. viii + 175.

[Bank clearings have been used in a number of countries over a period of years as an index of economic and financial conditions. In the United States clearings statistics have been supplemented by the use of bank debits. Both have proved useful in investigating cyclical patterns of change and for forecasting, to which the Americans have devoted much energy. The attributes which recommend these figures are several: they are issued more promptly than any alternative index of overall activity; they are available for individual cities and

therefore useful in analysing local developments; they can be employed in computing the rate of turnover of deposits (V'), still regarded as an important tool of monetary analysis; and either clearings or debits figures are available on a monthly (even weekly) basis over a relatively long period, and hence are an indispensable tool of business-cycle research. (For New York, monthly clearings figures date from October 1853, and nation-wide debits statistics from 1919.) Nevertheless, there are dangers in their use. Changes in collection practice, bank mergers (with some development of branch banking) and changes in the membership of particular clearing houses have all interfered considerably with the comparability of the figures, while the New York figures are significantly inflated by financial transactions, which may not always move in sympathy with economic trends. Further, New York clearings as a ratio to outside clearings fell sharply after 1880, and have continued to decline slowly since 1900. (Two of the appendices are devoted to further analysis of the New York position.) There are many statistical pitfalls, but the author has established "over the long pull" quite a close correlation between movements of debits and clearings and fluctuations in Gross National Product. This is not very surprising, but it is both a significant and convenient fact, because of the promptness with which figures become available. As one would expect, there is a direct reflection of seasonal swings in activity, most marked in agricultural centres, but the most interesting sections of this work probably concern the estimation of the velocity of deposits for the purposes of quantity theory and the use of clearings and debits in studies of business cycles. Under the first head, the author reviews the work of Kemmerer, Fisher, Angell and the Federal Reserve authorities themselves, and this is followed, in a subsequent chapter, by a discussion of the use of velocity indexes in more recent statements of monetary theory (including Keynes' *Treatise* and the refinements of Clark Warburton). Under the second, the work of Wesley Mitchell, Schumpeter and Frickey is taken as representative of a much broader body of empirical investigations based on bank clearings and debits. The author concludes his very thorough investigation by discussing ways of improving existing debit series, to "purify" the monthly series "by eliminating specific categories of transactions which tend to obscure the significance of short-term fluctuations, particularly in the series for individual centres." Nevertheless, he appreciates that "any gains resulting from a shift to a new basis will have to be weighed against the loss of continuity."

GREBLER (L.). *The Role of Federal Credit Aids in Residential Construction. Studies in Capital Formation and Financing. Occasional Paper No. 39.* New York: National Bureau of Economic Research, 1953. 9". Pp. 76. \$1.

[This interesting paper is concerned with the contribution to residential construction in the United States made since 1935 by loans insured by the Federal Housing Administration or guaranteed by the Veterans Administration. About half of all new residential building has now come to operate under one or other of these forms of federal aid. The author traces the evolution of thought by which what was originally intended mainly as a pump-priming device has come to be accepted as the means of causing a larger proportion of the nation's productive resources to be devoted to housing than would occur under *laissez-faire*. Among other questions discussed are the past and likely future effects of federal credit aid on the structure of the mortgage market and on the distribution of new building between houses for letting and houses for owner-occupation.]

HSIA (R.). *Price Control in Communist China.* New York: Institute of Pacific Relations, 1953. 11". Pp. 96. \$1.50.

[This is a scholarly and objective analysis of the means by which the Chinese Communist government succeeded in bringing to a halt the inflation which was raging at the time of its accession to power—an inflation which, as Mr. Hsia remarks, ranks as one of the most violent of world history. The chief feature of the policy adopted was its many-sidedness. Measures for increasing the supply of goods and improving transport facilities were accompanied by great efforts to balance the budget and to prevent increase in the note-issue, and once some semblance of price-stability had been restored, attention was also paid to increasing bank deposits and lowering the velocity of circulation. It is interesting to note that the Communists did not at first attempt to prevent and punish speculation by police action, as the Nationalist government had unsuccessfully tried to do, but relied rather on using the resources of the state trading companies to

ruin the speculators by turning the tide of prices against them at strategic moments. Only after the situation had been brought fundamentally under control was greater recourse had to punitive measures.]

McNAIR (M. P.). *Operating Results of Department and Specialty Stores in 1952.* Boston, Mass.: Harvard Graduate School of Business Administration, 1953. 11". Pp. 64. \$5.

[The special feature of this year's report is the inclusion of a section describing and illustrating certain procedures for expense classification and control that have recently been attracting attention. The review of the year's results shows for the most part a continuation of the relatively low but stable earnings of 1951, with, however, a strengthening of demand towards the end of the year.]

MARX (D.). *International Shipping Cartels. A study of industrial self-regulation by shipping conferences.* Princeton, New Jersey: Princeton University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. vii + 323. 40s.

[To be reviewed.]

PASSER (H. C.). *The Electrical Manufacturers, 1875-1900. A study in competition, entrepreneurship, technical change, and economic growth.* Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1953. 9½". Pp. vii + 412. 40s.

[The author approaches his subject both from the standpoint of the student of competition and from that of the student of entrepreneurship and its relation to economic growth. He traces with a wealth of learning the process by which a state of near-perfect competition in certain sectors of the industry presently gave way to pervasive duopoly. But competition between General Electric and Westinghouse in the production of heavy electrical equipment remained keen and unrestricted throughout the period, even with regard to price competition. The author suggests that the reason for this is to be found in the fact that the uncertainties introduced by rapid technical change were so great that it was well nigh impossible for either firm to predict its rival's reaction to any change of policy on its own part; and duopolistic interdependence was therefore necessarily ignored. The author's treatment of technical progress, which is his second main theme, shows clearly the inspiration he has derived from Schumpeter. His narrative, which includes a considerable amount of technical detail, reveals that radical new developments in the industry emanated chiefly from new firms and from independent engineer-entrepreneurs.]

PURCELL (V.). *The Colonial Period in South-east Asia. A historical sketch.* New York: Institute of Pacific Relations, 1953. 11". Pp. 65. \$1.

[This useful outline was originally designed to serve as a historical introduction to a political and economic survey of South-east Asia which the author has in preparation. It is now published separately in mimeographed form for the convenience of students and others. The author provides a clear and well-documented account of the history of Indonesia, Malaya, British Borneo, Burma, Indo-China and the Philippines from the earliest times until the end of the colonial period. Perhaps the most valuable aspect of the work is the opportunity it affords of comparing the policy and practice of the different colonial powers in the administration of the territories for which they were responsible.]

SHIMKIN (D. B.). *Minerals—a Key to Soviet Power.* Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1953. 8½". Pp. 452. 52s.

[This is a study from the Russian Research Center at Harvard University, where the author, a geographer, is a Research Associate. The greater part of the book is a very detailed survey of production, trade, and utilisation and consumption trends in the main minerals of the U.S.S.R. in the period 1926-50, with rather more sketchy information about the Soviet satellites. The study is, however, more than a mere gazetteer; Dr. Shimkin attempts (though admittedly

on the strength of basic data which are none too firm) to evaluate trends in terms of such indices as an Index of Mineral Consumption and Hypothetical Standards of Consumption, having in his introduction stated that "a systematic program of mining development provides major clues to a country's ambitions at home and abroad." For the most part, however, he is content to leave others to draw political inferences from his data, basic and processed.]

STOUT (H. M.). *British Government*. New York: Oxford University Press, 1953. 9½". Pp. vii + 433. 42s.

[To be reviewed.]

WESTON (J. F.). *The Role of Mergers in the Growth of Large Firms*. Berkeley, California: University of California Press, 1953. 9½". Pp. vii + 159. \$3.50.

[To be reviewed.]

WOLD (H.) in association with JURÉEN (L.). *Demand Analysis*. A study in econometrics. New York: John Wiley (London: Chapman & Hall), 1953. 9". Pp. ix + 358. 56s.

[To be reviewed.]

French

GIDE (P.) and Others. *Le Projet Français de Loi Anti-Trust et les expériences étrangères*. Paris: Sirey, 1953. 9½". Pp. 56.

[In this interesting little study the authors outline the background and present position of legislation relating to monopolies in the United States, Germany and Britain. They then examine the situation in France, with particular reference to post-war projects for kindred legislation. They consider the problems which arise, such as the question of unambiguous definition of "the public interest"; they argue that French industry is insufficiently concentrated by the criterion of the optimum size of firm in many industries. Thus, the authors counsel caution in order to ensure that legislation against restriction should not inhibit the proper growth of business concentration. They set up as principle the obligation to avoid abuse of the law through the adoption of practices which fail to meet the "test of reasonableness."]

INSTITUT NATIONAL DE LA STATISTIQUE ET DES ÉTUDES ÉCONOMIQUES. *L'Autriche*. Paris: Presses Universitaires de France, 1952. 9½". Pp. 313. Fr. 1200.

[This is a further volume in the series of country studies which are issued by the Institut National de la Statistique et des Études Économiques. A great deal of information is given about the political and administrative structure of the country, and about the major aspects of its economic life.]

DE ROOVER (R.). *L'Évolution de la Lettre de Change, XIV-XVIII Siècles*. Paris: Armand Colin, 1953. 10". Pp. 240. Fr. 850.

[This is a highly specialised study of the origin and development of the bill of exchange. The author considers the international development of money markets, the sources of the practices of endorsement and discounting of bills and the influence of theology, law and economics.]

Belgian

DEHEM (R.). *L'Efficacité Sociale du Système Économique. Critériologie de la politique économique*. Louvain: Institut de Recherches Économiques et Sociales, 1952. 9½". Pp. 184. Fr. B. 150.

[This book is argued on a high level of abstraction. The author examines the conditions in which the optimum allocation of resources in the community will be realised. He arrives at the conclusion that the institution of a system approximating to perfect competition will maximise the social welfare. He

argues that the neglect of the traditional theory of distribution of resources which he associates with the publication of the *General Theory* has been based on a superficial dichotomy between the theories of employment and distribution. An extensive bibliography is appended to this study.]

Problèmes Économiques Contemporains. Colloquia de la Chaire Francqui 1951-1952. Liège: Faculté de Droit de l'Université de Liège, 1953. 9½". Pp. 150.

[These conversations, which were held at Liège, were led by Professor Guitton, with the participation of a number of well-known Belgian and French economists. Four broad topics were considered: (1) Crises, Cycles and Growth; (2) Money—Inflation—Wages; (3) Social Security and Redistribution of the National Income; (4) The Object of Economics. It will be remembered that Professor Guitton has published a book entitled *L'Objet de l'Économie Politique*. The idea is advanced, notably by Professor Guitton, that the modern economic crisis is not a cycle with a distinct peak and trough but a continuing one, a kind of creeping paralysis. As M. Guitton puts it, "It is a crisis which is characterised by a kind of sapping of the energies." How far this is true and how far things have changed fundamentally, it seems that post-war experience has not yet been long enough to show. In the second seminar the meanings of inflation and the relation of wages to monetary stability are examined. In the third the pattern of social security and its effects are considered, and in the last the nature of economics and its methodology are discussed.]

German

ABEL (W.). *Agrarpolitik*. Göttingen: Vandenhoeck and Ruprecht, 1951. 9". 419. DM. 29.80.

[This book embraces a study of the economic, technical and sociological aspects of agriculture with a view to interpreting agricultural policy. The approach is largely historical and descriptive, and is mainly concerned with German and European problems. Chapters 5 and 7 dealing with agricultural credit policy and price formation will be of most interest to the agricultural economist. Both chapters give detailed references to recent German literature. There is a comprehensive index of authors and of topics, and the whole volume is well produced.]

NELLNER (W.). *Die Wanderungen im Bundesgebiet 1951*. Bonn: Institut für Raumforschung, 1953. 12". Pp. 45 and appendices.

[Migration problems are still of considerable (though now of diminishing) importance in the German economy, both on account of immigration from the East and on account of the changing economic structure of the country as the post-war recovery continues. This report surveys the migrations among the German Länder in 1951, and is a sequel to a similar report for 1950 published last year.]

RÜSTOW (H. J.). *Theorie der Vollbeschäftigung in der Freien Marktwirtschaft*. Tübingen: J. C. B. Mohr, 1951. 8½". Pp. 329. DM. 15.60.

[Continental economists of the *Eucken* school still manfully defend the thesis that in a perfectly competitive economy with flexible wages full employment will be assured. This thesis is developed with more or less rigour, and in some cases has grafted on to it the Pigou and Haberler refinements regarding the asset effect, of falling price levels. Dr. Rüstow's work is a particular variant of this thesis, and also a very peculiar one. After a long-winded account of the working of an exchange economy with a banking system the author maintains that when the supply of labour exceeds the demand the pressure on the wage-rate reduces the demand for money of entrepreneurs; this effect produces a lowering of the discount rate, and thus a rise in investment. As the author does not define his time periods or specify his assumptions very clearly in this section, it is difficult to follow his reasoning. No references are given, no empirical evidence is provided. A final chapter which compares his approach with that of Keynes, while it avoids the polemics which permeates much of the writing of Continental anti-Keynesians, gives a very garbled version of the *General Theory*.]

VÖCHTING (F.). Die Italienische Südfrage. Entstehung und Problematik eines Wirtschaftlichen Notstandsgebietes. Berlin: Duncker and Humblot, 1951. 9½". Pp. 680. DM. 34.

[This mammoth volume on the economic and social problems of Southern Italy begins in thorough German fashion with the seventeenth century. The historical account of the economic development of the South is followed by a painstaking description of the structure of its agriculture and of the newer development of industrialisation. The author sees the solution to the poverty of the South largely in terms of population changes. Thus he considers emigration coupled with the return of Libya to Italy as a possible solution, together with the spread of birth control. He is aware that these solutions may lack political realism. There is a good sixteen-page bibliography, mostly of Italian sources.]

WASCHINSKI (E.). Die Münz- und Währungspolitik des Deutschen Ordens in Preussen, ihre Historischen Probleme und Seltenen Gepräge. Göttingen: Göttinger Arbeitskreis, 1953. 8". Pp. 251. DM. 10-50.

[This is a contribution to the history of coins in the Middle Ages in Germany, with special reference to Prussian coinage. The book was completed for publication in 1939, but has been delayed on account of the war.]

Swiss

HENNIG (H.). Entflechtung und Neuordnung der Westdeutschen Montanindustrie unter besonderer Berücksichtigung der Verbundwirtschaft zwischen Kohle und Eisen. Bern: Francke, 1953. 9½". Pp. v + 240. Sw. Fr. 22.

[Dr. Hennig surveys the post-war history of the iron and steel industry in Germany and considers, in particular, the impact of the policy of dismantling these industries and the subsequent reversal of that policy. The possibility of the closer integration of iron and steel with the coal industry is examined, as also are the possibilities of European integration by means of the Schuman Plan. The book contains a number of technical tables and diagrams to illustrate the horizontal and vertical integration of the industry.]

HUNOLD (A.) (Ed.). Wirtschaft ohne Wunder. Zurich: Eugen Rentsch, 1953. 8½". Pp. 359. DM. 11-50.

[To be reviewed.]

RAPPARD (W. E.). Varia Politica. Zurich: Editions Polygraphiques, 1953. 10". Pp. 352. Sw. Fr. 38.50.

[To be reviewed.]

Wirtschaftstheorie und Wirtschaftspolitik. Festschrift für Alfred Amonn zum 70. Geburtstag. Edited by V. F. Wagner and F. Marbach. Bern: Francke, 1953. 9". Pp. 371. Sw. Fr. 47.

[To be reviewed.]

Swedish

ARTLE (R.). Svenskt Distributionsväsende. Stockholm: Industriens Utredningsinstitut, 1952. 9½". Pp. 238.

BENTZEL (R.). Inkomstfördelning i Sverige. Uppsala: Industriens Utredningsinstitut, 1953. 9½". Pp. 228.

HÖÖK (E.). Befolkningsutveckling och Arbetskraftsförsörjning. Stockholm: Industriens Utredningsinstitut, 1952. 9½". Pp. 193.

PETRI (C. W.). Svenskt Transportväsende. Stockholm: Industriens Utredningsinstitut, 1952. 9½". Pp. 294.

[These are four of an important new series of studies on Major Trends in the Swedish Economy. They deal respectively with Swedish Distributive Trades,

The Distribution of Income in Sweden, Population Trends and the Supply of Labour, and Transportation Industries in Sweden. Each study contains a summary and table of contents in English and an English translation of the most important words used in the statistical tables and charts.]

LUNDBERG (E.). Konjunkturer och Ekonomisk Politik. Stockholm: Konjunkturinstitutet, 1953. 8½". Pp. 550. Kr. 32-50.

[To be reviewed.]

Italian

ISTITUTO DI ECONOMIA E FINANZA. Studi Keynesiani. Milan: Guiffre, 1953. 10". Pp. 385. Lire 1500.

[This volume of Keynesian studies by a number of Italian economists provides the Italian student with a concise and readable guide to the discussions of Keynesian theory and its developments that have taken place in the English literature in the last fifteen years. Most of the aspects of Keynesian theory—the consumption function, the multiplier, liquidity preference and international equilibrium—are well discussed in the twelve contributions to this volume, though the approach is occasionally uncritical. A list of the principal writings on Keynes in Italian is included.]

PAPI (G. U.). The First Twenty Years of the Bank for International Settlements. Rome: Bancaria, 1951. 8½". Pp. 270. Lire 1500.

[About half of this volume consists of a very detailed bibliography of writings relating to the Bank for International Settlements and its work. In his narrative Professor Papi begins by giving a lengthy account of international monetary affairs from 1919 till 1931, and then goes on to describe the circumstances in which the Bank came into existence and the work which it has done.]

Dutch

BAKKER (O.). The Budget Cycle in Public Finance in the United States of America. The Hague: Van Stockum & Zoon, 1953. 9". Pp. 163.

[The subject of this monograph is the distribution of functions between different organs of government in the preparation, adoption, execution and control of execution of the budget. The author is a member of the General Auditing Court of the Netherlands, and his purpose in studying the procedures adopted in the United States is partly to compare them with what is done in the Netherlands. The book contains a detailed survey of the budget procedures of the federal government, of the states of California and New York, of two cities (Berkeley, California, and Richmond, Virginia) and of the United Nations Organisation.]

HARTOG (F.). Problemen der Moderne Economische Politiek. Leiden: Stenfert Kroese, 1953. 9". Pp. 204. F. 9.75.

[To be reviewed.]

OFFERGELD (J. W. G.). De Ontwikkeling van het Pond Sterling als Internationale Valuta. Tilburg: Bergmans, 1953. 9". Pp. 260.

[This is a chronologically arranged survey of the balance-of-payments problems of Great Britain and the sterling area since the end of the war. The book is clearly written, and is based on a thorough acquaintance with the literature of the subject. It should serve as a valuable introduction for Dutch students.]

VAN DER SCHROEFF (H. J.). De Leer van de Kostprijs. (With an English summary.) Amsterdam: Kosmos, 1953. 9½". Pp. 540.

[The first edition of this work on *The Economics of Cost Accounting Procedures* appeared in 1947. The present edition is the third, and has been substantially

revised. The author's approach may be summarised in the proposition that in costing the decisive factor is not the expenditure that has actually taken place but the replacement value of the factors of production necessarily employed (thus excluding waste) to produce the end-product. After enunciating his general principles, the author goes on to apply them to particular factors of production. The second part of the book deals with the problem of cost allocation, with special attention to the allocation of overhead costs.]

Finnish

PIPPING (H. E.). *Standard of Living. The concept and its place in economics.* Helsingfors: Northern Antiquarian Bookstore, 1953. 9½". Pp. 280. Mk. 1400.

[To be reviewed.]

Egyptian

GIDEONSE (H. D.). *The Economic Foreign Policy of the United States. National Bank of Egypt Fiftieth Anniversary Commemoration Lectures.* Cairo: National Bank of Egypt, 1953. 9½". Pp. 43.

[After discussing the constitutional obstacles in the way of efficient and consistent conduct of United States foreign economic policy, the author of these wide-ranging lectures goes on to take as his central theme the preservation of competition. In his view the genuineness of competition in the American economy and the importance of safeguarding it have been regrettably obscured by modern theoretical refinements of the concepts of monopoly and competition. The concluding lecture is concerned with the development of United States commercial policy during the last twenty years and its relation to present-day military and political problems.]

Official

BRITISH

THOMAS (G.). *Labour Mobility in Great Britain 1945-1949. An inquiry carried out for the Ministry of Labour and National Service.* London: Central Office of Information, 1953. 13". Pp. 71, and appendices.

[This is a roneo-ed study of labour mobility which contains valuable material not available elsewhere. A sample of 3,685 men and 1,725 women was used to throw light on the nature, frequency and causes of changes of occupation, of industry and of town. In all, the men had averaged 3.8 changes each and the women 3.0 changes each. Among both men and women changes of industry unaccompanied by changes of town and occupation are rare (4% of all changes); changes of town alone, but not of occupation or industry, are almost equally rare (7%); much more common are simultaneous changes of both industry and occupation (24%) and of industry, occupation and town (22%). The averages for all workers are themselves rather misleading; 41% of men and 47% of women have worked only in one town; 29% of men and 32% of women only in one industry; 18% of men and 26% of women only in one occupation. But since occupations are defined so as to differentiate between unskilled, operative, manipulative, clerical and managerial posts, ordinary promotion would imply different occupations; in fact, 68% of men have had three or fewer occupations. Change is related to various social factors, such as marriage and children (married men with children change more and not less often), education, size of town and so on. It is a pity that a little more information was not obtained on relative earnings.]

AUSTRALIAN

COMMONWEALTH OF AUSTRALIA. *The Structure and Capacity of Australian Manufacturing Industries.* Melbourne: Division of Industrial Development—Department of National Development, 1952. 13". Pp. iii + 528.

[The scope of this important and pioneering new work of reference is summarised in its preface. "This study has been undertaken within seventeen broad industrial groups, each in turn broken down into individual manufacturing activities. The treatment of each of these seventeen groups is in three parts. The first part gives for each separate activity within the group the number of firms engaged, the products made, the size of firms by employment and the degree of specialisation or integration, including other allied activities. The second part discusses the general operations within the group; reference is made, amongst other things, to estimates of demand and capacity, statistics of production, imports and exports, market prospects, development programmes and the availability of materials and labour. The third part consists of statistical tables of employment, salaries and wages paid, value of production, value of materials used and value of output for the industries covered in Parts One and Two."]

CANADIAN

COMBINES INVESTIGATION COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. *Coarse Papers. Investigation into an alleged combine in the supply, distribution and sale of coarse papers in British Columbia.* Ottawa: Department of Justice, 1953. 9½". Pp. 136.

COMBINES INVESTIGATION COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. *Maple Products. Investigation into an alleged combine in the purchase of maple syrup and maple sugar in the Province of Quebec.* Ottawa: Department of Justice, 1953. 11". Pp. 43.

RESTRICTIVE TRADE PRACTICES COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. *Report Concerning Alleged Price Discrimination between Retail Hardware Dealers in North Bay, Ontario.* Ottawa: Department of Justice, 1953. 11". Pp. 27.

RESTRICTIVE TRADE PRACTICES COMMISSION, DEPARTMENT OF JUSTICE, OTTAWA. *Report Concerning Alleged Instances of Resale Price Maintenance of Soap Products in the Montreal District.* Ottawa: Department of Justice, 1953. 11". Pp. 28.

[The criterion of the existence of a combine, as laid down by the Canadian Combines Investigation Act, is whether competition has been diminished to the detriment of the public interest. It has been held in court that detriment to the public interest can be inferred if the diminution of competition is of sufficient degree, even though there may be no proof of direct damage to the public by way of higher prices. On this criterion the Commissioner finds that a combine was in existence in the distribution and sale of coarse papers in Vancouver. The alleged combine in the purchase of maple products in Quebec is found to be not proved, because the purchasers between whom there was collusion did not account for a sufficiently large part of the market. Since November 1952 the task of reporting on combines has been transferred from the Commissioner to the Restrictive Trade Practices Commission. Of the two reports of the Commission listed above, the first relates to attempts by a producer to control the resale price of soap charged by a wholesaler. Resale price maintenance is specifically forbidden by Canadian legislation. The motive of the manufacturer in this instance was the fear that the wholesaler's price policy would jeopardise certain arrangements in existence for direct dealing between manufacturer and retailer. The alleged discrimination between retailers studied in the second report arose from the treatment by a manufacturer of two firms which had come into existence from the break-up of a family business.]

INTERNATIONAL

BANK FOR INTERNATIONAL SETTLEMENTS. Twenty-Third Annual Report. Basle: Bank for International Settlements, 1953. 12". Pp. 235.

[The annual report of the Bank for International Settlements continues to provide one of the best and most convenient of the surveys available of world economic events during the preceding year, especially in the monetary sphere. A special feature this year is the inclusion of a long chapter on the financing of investment.]

EUROPEAN COAL AND STEEL COMMUNITY. The Activities of the European Community. General report of the High Authority. Luxembourg: European Coal and Steel Community, 1953. 9". Pp. 116.

[This is the first of the General Reports that will be published regularly by the High Authority. It contains much useful information on the state of the markets for coal, iron ore and scrap, on the measures taken by the High Authority before the establishment of the common market in these commodities and on the difficulties that have been encountered in the early stages of its operation.]

EUROPEAN COAL AND STEEL COMMUNITY. The Establishment of the Common Market for Steel. Special report of the High Authority. Luxembourg: European Coal and Steel Community, 1953. 12". Pp. 31.

[This supplement to the General Report noted above describes the problems that have been faced by the High Authority in preparing for the establishment of a common market in steel.]

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT. The Economic Development of Mexico. Report of the Combined Mexican Working Party. Baltimore: Johns Hopkins Press (London: Geoffrey Cumberlege), 1953. 10½". Pp. vii + 392. 80s.

[To be reviewed.]

UNITED NATIONS. Coal and Iron Ore Resources of Asia and the Far East. Prepared by the Secretariat of the Economic Commission for Asia and the Far East. New York: United Nations, 1953. 11". Pp. 151. 11s.

[This is mainly a straightforward description of what is known of the coal and iron ore resources of the ECAFE countries and an account of what has so far been done to exploit these resources or to plan their future exploitation. As such it is necessarily somewhat uncritical, but is nevertheless valuable as a work of reference, especially as a number of important general conclusions are made to stand out from the mass of detail (e.g., the gross optimism of early estimates of China's iron resources and the qualitative and quantitative poverty of the mainly Tertiary coals of most of the region). Attention is also rightly directed to the state of topographical and geological surveys and to the consequent strong element of the tentative about estimates of mineral reserves.]

UNITED NATIONS. Economic Survey of Asia and the Far East 1952. Prepared by the Research and Statistics Division, Economic Commission for Asia and the Far East. Bangkok: United Nations Department of Economic Affairs, 1953. 11". Pp. 104. \$1.

[The annual survey for 1952 stresses two conflicting trends: on the one hand, a general expansion of production, and on the other hand, a worsening of the terms of trade and the disappearance of the fictitious prosperity of the Korean war boom. Primary production is now growing back to the point where a small increase of demand no longer has violent repercussions on price. But, if China is excluded, food production per head remains 14% below the level of 1934-38.

In some key crops and key areas the reduction is still more serious. Even in 1951-52 the area under rice in Burma was 23% below the pre-war level. The worsening of the terms of trade has been severe: in India, for example, the index moved from 128 in the second half of 1951 to 87 in the third quarter of 1952. It is not surprising that reserves dwindled and imports were limited no longer by physical shortage but by purchasing power. One consequence has been "that consumption and development will compete strongly for import-finance." A second has been that fiscal policies, where heavily dependent on exports, have failed to keep abreast of the changing situation, and revenues have fallen more than expenditures.]

UNITED NATIONS. Fields of Economic Development Handicapped by Lack of Trained Personnel in Certain Countries of Asia and the Far East. Prepared by the Secretariat of the Economic Commission for Asia and the Far East. New York: United Nations, 1953. 9". Pp. iii + 119. 5s.

[Chapters I and II of this report enumerate in detail the requirements of skilled personnel as returned by governments in response to an inquiry carried out by ECAFE. Chapter III surveys the different categories of personnel for whom the demand in these countries is most pressing, and considers possible means of supplying the need.]

UNITED NATIONS. Mobilization of Domestic Capital: Report and Documents of the First Working Party of Experts. Bangkok: Economic Commission for Asia and the Far East, 1953. 9". Pp. 206. \$1.50.

[The three principal topics studied at the meeting of the working party, which took place in November 1951, were the impact of inflation on mobilisation of domestic capital, measures for increasing government bond sales and measures for mobilising savings, particularly in rural areas. The present volume contains the recommendations of the working party, together with summaries of twenty-six papers submitted to it by various authors and agencies.]

UNITED NATIONS. Report and Proceedings of the United Nations International Seminar on Statistical Organisation. New York: United Nations, 1953. 11". Pp. 137. 11s.

[The Seminar was held in October and November, 1952, and was attended by leading official statisticians from many countries. The report contains abstracts of the papers presented and summaries of points raised in the discussions. The full documentation of the Seminar runs to over a thousand pages, and is being privately circulated.]

UNITED NATIONS. Review of Economic Conditions in the Middle East, 1951-52. Supplement to World Economic Report. New York: United Nations Department of Economic Affairs, 1953. 11". Pp. iii + 161. 12s. 6d.

[The raw material boom of 1950-51 on the whole improved the terms of trade of Middle East countries, and its end in 1952 tended to remove the stimulus to economic activity. But the events of 1951-52 affected different countries in markedly different ways. Iran suffered severely from the loss of oil revenues. Egypt and the Sudan were greatly affected by the decline of cotton prices. On the other hand, in Israel the central problem of absorbing mass immigration was little changed. The Survey emphasises these growing differences, and that by degrees as the countries become more differentiated they are becoming also in some small degree more complementary. Some Middle East countries, particularly those with oil resources, are acquiring savings faster than they can be used; other countries are desperately short of capital. Use might be made by neighbouring countries of natural gas now wasted. Water supplies might be developed jointly. Tariff barriers are at present an obstacle to advantageous mutual trade. It is easy to argue these gains. It is much more difficult to solve many of the political than the economic problems of collaboration, and parts of this survey give an impression of somewhat unrealistic reluctance to face the tasks of overcoming these enormous political obstacles.]

UNITED NATIONS. Review of International Commodity Problems 1952. Prepared by the Interim Co-ordinating Committee for International Commodity Arrangements. New York: United Nations, 1953. 11". Pp. iii + 51. 3s. 9d.

[The greater part of this document is occupied by detailed surveys of current developments in world production and trade in some twenty commodities. These surveys are preceded by a brief general discussion of world commodity problems, relating in particular to the question of price stabilisation.]

UNITED NATIONS. Special Study of Economic Conditions and Development in Non-Self-Governing Territories. Summaries and analyses of information transmitted to the Secretary-General during 1951. New York: United Nations, 1953. 9". Pp. iii + 415. 22s. 6d.

[This is a valuable source of general information about economic development in all the various non-self-governing territories. It contains a great deal of useful detail about actual attempts in different territories to improve agriculture, to introduce new industries and to develop co-operation. But it contains little serious attempt to see the broader problems of capital supply or of transfer of technological know-how, except in rather vague and general terms, nor to measure the amount of such investment that has taken place since the war.]

UNITED NATIONS. United States Income Taxation of Private United States Investment in Latin America. A description of the United States system and some of its implications. New York: United Nations Department of Economic Affairs, 1953. 9". Pp. iii + 80. 5s.

[The interest of this report is less purely technical than its title might suggest. It contains much valuable information on the effects of United States tax provisions on the nature and form of investment in Latin America, and concludes with a more general discussion of United States business attitudes towards investment abroad.]

UNITED NATIONS. World Economic Report, 1951-52. New York: United Nations Department of Economic Affairs, 1953. 11". Pp. 141. 11s.

[This fifth survey of world economic conditions is built upon a classification of countries into three broad groups: the economically developed private enterprise economies, composed of Western Europe, North America and Australasia; the centrally planned economies, made up of the U.S.S.R., China, the Eastern European Satellites; economically under-developed private-enterprise economies, in Latin America and in the Far East. In the first group the dominant influences during 1951-52 were two: the growth of public expenditure, mainly on armaments, and the inventory cycle, reflecting changing rates of accumulation of raw materials and work in progress. On average, the ratio of government expenditure to national output rose from 15% in 1950 to nearly 20% in 1952. Despite higher taxation, there were widespread inflationary pressures. The inventory boom "fed on the price movements which it itself helped to generate," but by 1952 inventories were rising less quickly, and in some cases actually fell. But for a variety of reasons consumption declined; while demand for the heavy industries was maintained, demand for textiles and consumer durables was insufficient to keep industries working to capacity. The trends in under-developed countries depended very much on how they were individually affected by the boom and subsequent recession in primary products. In some cases they not only suffered heavy price falls in the later stages, but also found themselves forced to accumulate unsold stocks of their products. Between these countries and the centrally planned economies "there was relatively little mutual interaction." Their rate of increase of industrial production, though lower than in earlier years, was still very high, with heavy industries advancing faster than consumer-goods industries. Agricultural output developed slowly. In general, increases of food and other consumption goods were sufficient to permit a rise in real wages. The survey emphasises the continuing international economic disequilibrium and the undiminished urgency to develop new supplies of dollar-saving goods at prices competitive with those produced in the dollar area.]

UNITED NATIONS DEPARTMENT OF ECONOMIC AFFAIRS. The European Steel Industry and the Wide-Strip Mill. A study of production and consumption trends in flat products. Geneva: Industry Division, United Nations Economic Commission for Europe, 1953. 11". Pp. 100. 7s. 6d.

[This is the first of a series of studies relating to particular problems of the European steel industry. After considering likely future trends in production and in the various categories of demand for flat steel products, the authors conclude with some suggestions for dealing with the excess of productive capacity over demand which seems to be in prospect in the near future. They suggest that it would be more useful at present to concentrate on expanding finishing facilities than to lay down further new strip mills, and that governments and the steel industry should give serious attention to the social problems that are bound to arise from the accelerated scrapping of old and inefficient plants which is probably both inevitable and economically desirable. It is argued that there is no reason why production on continuous wide-strip mills in western Europe should compare unfavourably in cost with production in the United States. On the basis of United States experience, it would appear that cost reductions should open up wide new potentialities for the sale of flat products, and the report contains some suggestions about the particular uses in which this expansion might take place.]

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE. Combustion. Results achieved by certain European countries in the field of fuel advisory services and technical training. Geneva: Industry Division, United Nations Economic Commission for Europe, 1953. 11". Pp. 167. 6s.

[The countries covered by this report are West Germany, France, Holland, Belgium, Denmark, Sweden, Italy, Poland and the United Kingdom. Particulars are provided on the advisory and propaganda services on fuel utilisation in existence in each country, and discussion is included of the compulsory powers exercised by the authorities in France and Italy. The second part of each chapter describes the facilities for the training of boiler-house staff in the various countries.]

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL. European Steel Exports and Steel Demand in Non-European Countries. Geneva: Industry Division, United Nations Economic Commission for Europe, 1953. 11". Pp. 242. 9s.

[This contains detailed particulars on the structure of production, consumption and imports of steel in the foreign markets which are of chief importance to European producers. The authors also discuss the causes of the instability of steel export prices in recent times and the factors affecting the competitive strength of European producers. Their conclusions contain estimates of the level of future demand, based, broadly, on a projection of current consumption trends and on programmes announced in the various countries for the expansion of production.]

UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION. The Long-Term Contract. Commodity Policy Studies No. 3. Rome: FAO, 1953. 11". Pp. 27. 2s. 6d.

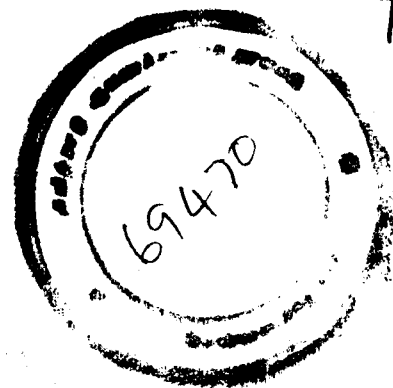
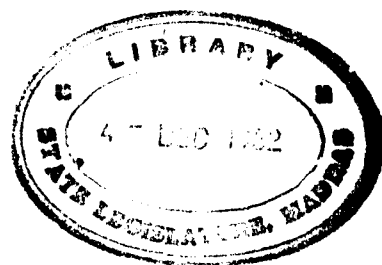
[This interesting report contains a description and appraisal of the long-term food-import contracts that have been entered into by the United Kingdom government since the end of the war. The least satisfactory feature of the long-term contract system as it has hitherto been practised has been the absence of any objective basis for fixing prices. Price determination by bargaining between the two countries involved, conducted with greater or less reference to world market prices, is unsatisfactory, if only because world prices are themselves not unaffected by the existence of the contract. The author argues, however, that the system is in principle capable of being very advantageous, both to the importing and to the exporting country; and he suggests that for this reason it is important to develop a better pricing system and also to devise means of safeguarding the interests of third countries which might be prejudiced by the existence of the contract.]

UNITED NATIONS TECHNICAL ASSISTANCE ADMINISTRATION. Revenue Administration and Policy in Israel. New York: United Nations, 1953. 10½". Pp. 107. 7s. 6d.

[This inquiry was undertaken at the request of the Government of Israel. It deals chiefly with the income-tax system in Israel. The author has many valuable points to raise, some of which will be of interest to students of public finance not particularly concerned with the problems of Israel. A good many of the faults he finds in the present system can be traced to one of two sources. In the first place, the progress of inflation has caused the incidence of the tax to differ considerably from what was originally intended. In the second place, tax law in Israel has inherited a number of features from the Mandatory government which were based on British tax practice and which have ceased to be appropriate to Israel or else were never appropriate there. This is partly because of the lack of administrative machinery of the British type, partly because of differences in the social and economic structure of Israel and Britain, and partly because the principles involved belong to an earlier period in fiscal thinking and have become outmoded even in the country of their origin.]

UNITED NATIONS TECHNICAL ASSISTANCE ADMINISTRATION. The Trust Territory of Somaliland under Italian Administration. New York: United Nations, 1952. 11". Pp. 343. 25s.

[The first part of this report contains a general survey of the land, population and economy of the territory; the second part is made up of more detailed studies on livestock, agriculture, education and public health.]



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