APPENDIX

MR. KALECKI ON THE DISTRIBUTION OF INCOME 1880–1913[1]

IN the course of a new formulation of the theory of distribution Mr. Kalecki has commented on income distribution in Great Britain, over the period 1880–1913, in terms very different from those used in Chapter IV, above.[2] He holds that the shape of the curve of short-period marginal costs is normally horizontal and equal to average variable costs, for firms, and, on average, for the economy as a whole; and that this fact 'eliminates factors other than the degree of monopoly from the mechanism of distribution'.[3] This analysis groups, on the one hand, payments for labour and raw materials, and on the other, payments in the form of depreciation, salaries, interest, and profits. Prices are assumed to be set with reference to short-period marginal costs. Since the latter are assumed constant, the elasticity of the demand curve facing the firm determines the portion of total income going to depreciation, salaries, interest, and profits. The 'degree of monopoly' is measured by the relation: price minus short-period marginal costs divided by price. The 'degree of monopoly', for a firm, over the whole relevant range of output, may be said to be constant, then, when average variable costs are constant and equal to short-period marginal costs; when prices are assumed to be determined uniquely with reference to short-period marginal costs; and when the demand curve it faces is of constant elasticity.

Against this theoretical background the period 1880–1913 is viewed as follows:[4]

> '. . . the relative share of manual labour in the national income in Great Britain did not change appreciably between 1880 and 1913. It can be shown that the relation of the prices of "basic raw materials" to wage costs also did not alter in this period.

[1] *Essays in the Theory of Economic Fluctuations*, chap. i. For discussion of Kalecki's view of income distribution see J. M. Keynes, 'Relative Movements of Real Wages and Output', *Economic Journal*, Mar. 1939; P. T. Bauer, 'A Note on Monopoly', *Economica*, May 1941; R. H. Whitman, 'A Note on the Concept of "Degree of Monopoly"', *Economic Journal*, Sept. 1941, and Kalecki's *Comment*, April 1942; J. T. Dunlop, *Wage Determination under Trade Unions*, chap. viii, especially pp. 174 ff.

[2] Op. cit., p. 24.

[3] The author is indebted, in this Appendix, to helpful suggestions from Mr. W. M. Allen, Mr. J. R. Hicks, and Mr. C. J. Hitch.

[4] Ibid., pp. 32–3.

> For this purpose we shall compare Sauerbeck's index of wholesale prices with Mr. Clark's index for the deflation of national income [*National Income and Outlay*, p. 231]. It is clear that the influence of raw material prices as compared with that of wage costs is much greater upon the first index than upon the second. Now between 1880 and 1913 both of these indices changed in the same proportion (increased by 6 per cent.),[1] so that we can conclude that the prices of "basic raw materials" relative to wage-cost did not change. Obviously, then, the degree of monopoly could not have undergone a substantial change between 1880 and 1913 since with raw material prices unaltered as compared with wage costs such a change would have been reflected in the relative share of manual labour in the national income.'

This quotation appears to imply a constant relation among the variables determining the distribution of income over the period 1880–1913. In fact, the course of events yielded, almost certainly, a modest favourable shift in the distribution of income for labour until about 1900; and an unfavourable shift from that time to 1913.[2] The roughly similar relationships in income distribution for the years 1880 and 1913 are the result of an historical accident rather than of long-period stability. Before exploring further Kalecki's historical judgement, however, it may be useful to examine the theoretical framework which informs it.

[1] Clark's general price index, constructed for the purpose of calculating the real national income from money income statistics, is not given, on the indicated page (p. 231), for 1880, but for the average period 1877–85. The figures apparently relevant to Kalecki's exposition are 97·8 for 1877–85; 100·0 for 1913, a rise of about 2 per cent. rather than of 6 per cent. Sauerbeck's index of raw material prices plus food prices also rises about 2 per cent. from the period 1877–85 to 1913; but raw material prices rise from 87 to 100, and food prices fall from 116 to 100, within Sauerbeck's general index. See below, p. 230.

[2] It may, perhaps, be objected that the changes indicated in Bowley's income distribution figures are too small to be regarded as 'significant'. This is, clearly, a matter for judgement, although relatively small percentage changes in the distribution of income can involve very substantial shifts in the sense of relative well-being among the classes affected (see Dunlop, op. cit., p. 151, on the 'propensity to be surprised'). It should be noted, further, that the movements of income distribution from 1880 to 1913 are not random, but exhibit a rising trend for 'labour' to 1900, a falling trend to 1913 ('Wages and Income', tab. xiii, p. 92). Especially if the initial date is moved back to 1873 the whole analysis of these two trend periods attests to the existence of very strong divergent pressures in each, operating on real wages and profit margins. These need not have yielded, of course, changes in the distribution of shares in the national income; although the sense of the full historical evidence is, strongly, that they did.

II

The 'degree of monopoly' has been applied to both short-run and long-run problems of income distribution. The comments here are confined to its long-run applications.

The following observations can be made:

1. The empirical basis for the assumption that constant short-period marginal costs (equal to average variable costs) over relevant ranges of output is either normal for all units, or average behaviour for the economic system as a whole has not been established.[1]
2. The assumption that short-period marginal costs are alone relevant to price formation ignores the role of user cost, and the general importance of quasi-long-period and long-period considerations in the process of price formation.[2]
3. The meaning is ambiguous and the legitimacy doubtful of the summing-up process; that is, adding and averaging the 'degrees of monopoly' for firms to derive an average for the whole economy.[3]
4. The 'degree of monopoly', merging as it does a wide variety of economic phenomena, especially when applied to the economic system as a whole, and embracing factors which bear little relation to monopolistic practices, as commonly understood, is under suspicion of concealing more than it illuminates, and of constituting a misnomer.[4]

[1] Keynes, loc. cit., pp. 44–5; Bauer, op. cit., p. 201. On the evidence of British cyclical history it seems particularly doubtful that conditions of constant marginal cost obtained in the latter stages of major cycle expansions and the early stages of major cycle contractions. See above, Chapter II, especially pp. 52–3.

[2] Keynes, loc. cit., pp. 46–7; Bauer, op. cit., p. 198. See also R. L. Hall and C. J. Hitch, 'Price Theory and Business Behaviour', *Oxford Economic Papers*, May 1939.

[3] Bauer, op. cit., pp. 194–8. Bauer notes that agriculture operated under conditions of virtually perfect competition and that certain important forms of monopolistic arrangement cannot be effectively measured in terms of the elasticity of the demand curve facing the firm; e.g. conditions of competition in selling costs, where prices are fixed, and situations where the demand curve facing the firm is horizontal, and then vertically downward sloping, within the framework of a cartel agreement. Keynes, loc. cit., p. 43, points out that the concept is compromised because it does not include prices set outside the given economy. In the case of Britain, over the period 1880–1913, the movements of agricultural prices, with their major effects on real wages and on the yield from the significant proportion of British capital invested in agricultural land, make this objection particularly germane.

[4] In its portmanteau quality Bauer, op. cit., pp. 199 and 201, regards the

The weight of the objections to the 'degree of monopoly', as a sovereign concept in the analysis of trends in distribution, and especially to the assumptions which underly it, appears sufficient to justify maintaining the more conventional structure of analysis used above, in Chapter I. Kalecki's formulation does suggest, however, that interest may attach to a brief review of the factors affecting distribution, from 1873 to 1914, under two headings:

first, relative movements of money wages, as against the prices of raw materials and foodstuffs; for the relationships among them remain, *deus ex machina*, an element in Kalecki's theory of distribution; and

second, apparent changes in the competitive conditions confronting British industries and firms, over these years; this being quite distinct from the 'degree of monopoly', since the assumption of constant short-period marginal costs and of their unique relevance to price formation are not accepted.

III

Kalecki's analysis allows for changes in the proportion of total income going to wages either through changes in the 'degree of monopoly' or through changes in the prices of 'basic raw materials' in relation to 'wage costs'. 'Basic raw materials' include 'the products of agriculture and mining'. The long-term approximate stability of the proportion of the national income going to wages is attributed to fortuitous balancing movements in opposite directions of these two factors.[1]

In the period 1873–1900 analysed above (Chapter IV), the

'degree of monopoly' as akin to the Velocity of Circulation, in the Quantity Theory of Money. It is, perhaps, more directly related to 'surplus value', as used by Marx; see especially, 'Capital', vol. iii, chap. xiii, which is devoted to explaining how 'surplus value' may grow, for the economy as a whole, in the face of a falling rate of profit. An aspect of 4, above, is the view that the 'degree of monopoly' would rise automatically, with the increased capitalization of a firm, irrespective of the elasticity of the demand curve facing it (Bauer, op. cit., pp. 197–8; and especially Whitman, op. cit., pp. 263–4). If one is prepared to accept the concept of a fixed 'degree of monopoly' attaching to a firm—that is, a demand curve of constant elasticity, over its whole relevant portion—then the level of marginal costs, so long as they are constant and equal to average variable costs, and the degree of capitalization become irrelevant to the 'degree of monopoly'. Whitman does not make the assumption of a constant 'degree of monopoly' in exploring the effects of different degrees of capitalization, and for that reason his argument and Kalecki's do not meet.

[1] Kalecki, loc. cit., pp. 29–32.

rise in real wages is traced, proximately, to a lesser fall in money wages than in retail prices, from 1870–5 to 1880–5;[1] and from that time to 1900 money wages, in net, rose, while the downward trend in retail prices persisted.[2] These movements were certainly the operative means by which the share of labour in a rapidly rising real national income was maintained and even somewhat increased. The following table presents the evidence on price-wage rate movements, in relation to Clark's general price index, for deflation of national income figures, which Kalecki takes as standard:

Prices and Wages, 1870–1913

(1913 = 100)

	General prices (Clark)	*General prices (Sauerbeck)*	*Food prices (S'r'k.)*	*Raw mat. prices (S'r'k'.)*	*Retail prices (Wood)*	*Money wages (Wood)*	*Real wages (Wood)*	*Net barter terms of trade (Taussig)*
1870–6 .	118	119	130	112	112	78	74	—
1877–85 .	98	98	116	87	102	79	80	116 (1880–2)
1894–1903	92	78	86	73	85	90	103	97 (1899–1901)
1913 .	100	100	100	100	100	100	100	100 (1911–13)

The following emerges from an examination of these data:

1. The similar percentage movements of Sauerbeck's general price index and Clark's, as between 1877–85 and 1913, do not represent parallel movements over the whole period; Kalecki would, presumably, judge that either a decrease in the 'degree of monopoly' occurred, from 1877–85 to 1894–1903, and/or that the distribution of income must have shifted favourably to labour; and that an obverse movement or combination of movements must have occurred from that time until 1913.
2. The movements of food prices and of raw material prices, combined without discrimination in Kalecki's formulation, were in opposite directions, from 1877–85 to 1913; and moved at different rates, but in the same directions from 1877–85 to 1894–1903, and from 1894–1903 to 1913.
3. The movements of the net barter terms of trade were favourable to Britain to the turn of the century, slightly unfavourable thereafter.

In Kalecki's formulation the relative movements of money wages and prices must be given, from outside his analytic system. The conventional treatment of distribution, however, is designed

[1] See above, table, p. 90.   [2] See below.

to include that relationship within the orbit of analysis. As indicated above,[1] an increase in the amount of capital used in conjunction with a given amount of labour would show itself, through changes in productivity, in a decline of prices in relation to money wage rates. A great deal of British investment, at home and abroad (e.g. in steamships and in American railways), was calculated to produce precisely the fall in food and raw material prices in Britain which in fact resulted. To the extent that changes in the relation between the price of 'basic raw materials' and wage rates are introduced, then, productivity remains an element in the analysis. Kalecki is pointing to the market mechanism by which changes in distribution are assumed to be achieved, in the conventional analysis.

Whether a relative change in prices and money wages results in a shift in the distribution of income, in the conventional analysis, depends, under rigid assumptions, on the elasticity of substitution, between labour and capital, a concept which measures the relative productivity of the changes in the amount of capital used in conjunction with labour. This consideration, too, appears to be implicit in Kalecki's formulation.

Over the period 1880–1913 he takes two facts to have been proved:

1. The distribution of the national income, as between manual labour and other recipients, was virtually constant;[2]
2. A price index containing a higher proportion of wage payments (Clark's) moves in parallel with one containing a lower proportion of wage payments (Sauerbeck's).

From these two facts, acceptable as between the two years 1880 and 1913, the conclusion is drawn that 'the degree of monopoly could not have undergone a substantial change between 1880 and 1913'.

The conventional theory of distribution, under the assumption of perfect competition, would account for the similar complex of relationships in 1880 and 1913 by assuming: (*a*) that the increase in the productivity of labour with respect to capital (i.e. economies in the use of labour per unit output) balanced out the rise in money wage rates relative to raw material prices; and (*b*), that

[1] Chap. III, especially p. 90.

[2] Kalecki, loc. cit., p. 14, excludes from the calculations on Britain the proportion of income derived from overseas, which rose considerably from 1880 to 1913 (see above, p. 104). Strictly speaking, he is concerned with the proportion of home-produced income going to 'manual labour', a difficult category to identify from available statistics.

the increase in the amount of capital was either proportional to the increase in real national income, with average yield on capital constant; or that the average yield on capital moved in such a way as to balance a disproportionate movement in the amount of capital, in relation to the real national income.

In his elliptical comments on the relative movements of Clark's and Sauerbeck's indexes Kalecki employs a conception much as in (*a*), above. The conclusion that 'the prices of "basic raw materials" relative to wage cost did not change', implies that if profits are a constant element in Clark's index of national output as a whole, and if the physical amounts of raw materials required to produce a given output are constant, then changes in the price of labour were exactly balanced by economies in the use of labour. This is, basically, a judgement about the productivity of investment over the period. It would appear that, having exorcised the conventional theory of distribution,[1] Kalecki re-invokes its concepts implicitly, in his analysis of the relation between the prices of raw materials and labour, and of the relative amounts of raw materials and labour required to produce a given output.

IV

It would, nevertheless, be agreed that conditions of perfect competition did not obtain universally in the British economy over the past century and a half, in markets for both commodities and for labour. Outside agriculture one form or another of market imperfection was, in fact, normal; and, moreover, the degree of monopoly as reflected in (but not uniquely measured by) earnings over and above average variable costs, varied over time. A legitimate question is, clearly, raised by relaxing the assumption of perfect competition often employed in formulations of the theory of distribution.

Chapters III, IV, and IX have referred extensively to the change in the demand conditions facing British industry after 1873. It was concluded that the severity of competition in many important branches of British industry increased; and that, with limited exceptions, such efforts as were made to lessen competition for the individual firm, by institutional monopoly arrangements, were, by and large, unsuccessful in their main aim. These efforts were regarded as symptomatic of the forces operating to depress

[1] Loc. cit., p. 24: 'Contrary to the usual view neither inventions nor the elasticity of substitution between capital and labour have any influence on the distribution of income.'

the level of profits rather than as a decisive factor in limiting the fall in prices, restricting output, and checking the mild inroads on the proportionate distribution of income to 'property', which was under way. Analytically, then, a decrease in the degree of monopoly, in the simple sense of increasingly severe competitive conditions, has already been adduced in the analysis of the Great Depression, as a factor producing the fall in prices and profit margins, and the tendency to introduce labour-saving machinery which characterize these years.

The changed competitive conditions after 1873 were related mainly to three large factors which, by changing the conditions of supply within industries, affected the earning power of individual firms:

(*a*) the rapid development outside Britain of capital industries, notably in the United States and Germany, and a loss of Britain's semi-monopolistic position with respect to railway iron and other capital goods;[1]

(*b*) decisions to expand industrial plant and other capacity (notably, coal-mines) during the upswing from 1868 to 1873 which, when fulfilled, left margins of unemployed plant, even at high levels of labour employment, and induced price-cutting competition;

(*c*) a continued high level of home investment, applying new techniques and processes (e.g. machine-tools, steel, electricity, steamships) which, while it helped sustain the level of employment, and increased productivity, made competition severe for those firms attached to the older techniques.

The analysis presented here would recognize that both cost and demand conditions for the individual firm tended to alter, over the Great Depression period; but would emphasize the extent to which phenomena on both sides of individual markets (i.e. costs and demand) were related to the character of previous and current investment outlays. As a factor affecting the demand situation confronting individual firms this view would attach a low relative importance to the institutional devices of monopoly which grew, to some extent, over these years; and, taking British

[1] A special case of (*a*) above, is the development of the farm lands, opened up in the years before 1873 in the U.S. Here the changed position for Britain appeared simply as a lower wheat price in British markets, rather than a demand curve of increased elasticity, since the world wheat price was set on the basis of virtually perfect competition.

industry in its full international setting, it would attach very considerable importance to changes in the number, capacity, and efficiency of firms within industries.

In the general reversal of the pattern of the British economy, from about 1900, it is likely that the demand situation confronting many British industries—especially in their export branches—notably improved. Although the number of formal monopolistic arrangements made in Britain increased, between 1900 and 1914, and although the fall in the average number of firms in industries continued, again the main impact of the changed position on demand probably arose from other factors.[1] The most important of these was the special ties that developed between Britain and the countries which borrowed British capital, including important areas within the Empire. There is no doubt that the complex of associations that accompanied the increased lending of capital abroad in this period gave a preferred position to the export industries of the lending countries, which modern theory would account an imperfection of competition, and which might be expressed as a demand curve for British exporters, less elastic than it would have been in the absence of British loans abroad.

In addition, it is possible that the relative falling off in domestic investment, over these years, may have removed or lessened the influence of (*c*), above, as a factor affecting the competitive position within Britain.[2]

V

The following conclusions, then, have been drawn:

1. Applied to available evidence on the period 1880–1913, serious doubt attaches to the applicability of Kalecki's three basic assumptions: namely, that short-period marginal costs can usefully be assumed constant and equal to average variable costs; that such costs are uniquely relevant to price formation; and that the position in individual firms can be

[1] For the limited state of development, powers, and efficiency of the principal cartels operating in Britain in this period see H. Levy, *Monopolies, Cartels, and Trusts in British Industry*, chaps. ix and x. The growing scope and power of trade unions was probably the most significant new monopoly element in the British economy over these years; and coupled with the new influence of labour in politics, which had consequences for the structure of taxation and income distribution, it is quite possible that this development prevented the shift in the distribution of income against labour from proceeding as far as, otherwise, it might have gone, from 1900 to 1914.

[2] See Chapter I, pp. 26–8, for a more general discussion of the course of the economy over the period 1900–14.

summed into a generalized 'degree of monopoly' concept for the economic system as a whole.

2. Kalecki's analysis of the relation between raw material prices and wage costs introduces considerations common to conventional distribution theory, including the relative productivity of investment.
3. Changes in the competitive position confronting British industries were a part of the process of price-wage-profit adjustment over the years 1880–1913; and in general, the severity of competition probably increased between 1873 and 1900, and probably decreased between 1900 and 1914.
4. Such changes were not primarily accomplished by alterations in institutional monopoly arrangements, which operated in a direction counter to the trend, from 1873 to 1900, and which perhaps somewhat reinforced the trend, from 1900 to 1914, although their impact on distribution, as between labour and capital, was not wholly in favour of the latter. The principal changes, except in the labour market, were accomplished by changes in the demand position of individual firms which stemmed from the supply position of industries, in their domestic and international settings, and from the consequences of British loans abroad.

The separation and measurement of the related forces which produced changes in the relations among prices, wages, and the yield on capital into elements affecting costs and elements affecting demand appears outside the scope of present data on the period. Kalecki's formulation, however, in no way proves that the nature and productivity of investment are irrelevant to the problem of income distribution over the period 1880–1913. On the contrary, the evidence available would suggest that changes in the severity of competition as well as in relative costs may have had a common basis in the character of investment outlays, over the period 1880–1913.