THE DETERMINANTS OF DISTRIBUTION OF THE NATIONAL INCOME

By M. Kalecki

In the present paper we try to investigate both statistically and analytically the problem of the relative share of manual labour in the national income. There are two reasons why we do not consider the total share of labour, although it would be more interesting from the social point of view: (1) The statistics of national income include in the salaries the incomes of directors, managers, etc., which should rather be placed under the heading of profits. In this way what statistics give as the total share of labour does not represent correctly the distribution of the product of industry between profits and interest on the one hand, and wages and salaries on the other. (2) The relative share of manual labour in the national income is more suitable for theoretical analysis.

It must be added that we shall deal here with the relative share of manual labour not in net but in gross income, by which is meant the income before deduction of maintenance and depreciation. (Gross income = net income + maintenance and depreciation.) The reasons for this are again both "technical" and theoretical: (1) The statistics of gross income are much more reliable than those of net income; the latter are based on the net incomes of firms whose allowance for depreciation is certainly more or less arbitrary. In adding to the net national income aggregate depreciation, as given by the firms' accounting, we obtain gross income free from this arbitrariness. (2) It is the share of manual labour in the gross national income which—as we shall see below—ex natura rei can be more easily treated theoretically.

THE STATISTICAL DATA

1. The figures for Great Britain are based on Professor Bowley's The Change in the Distribution of the National Income, 1880–1913, and Mr. Colin Clark's National Income and Outlay.

Using Professor Bowley's data on the distribution of national income (p. 16) and deducting from total income the interest from overseas

1 For the sake of brevity we shall speak throughout the paper of "depreciation" instead of "maintenance and depreciation."
(mentioned on p. 25) we obtain the relative share of manual labour in home-produced income: 43.5 in 1880, and 39.3 in 1913. (It is the distribution of home-produced income in which we are interested.) The above figures are shares in net income—Professor Bowley does not give data on depreciation and gross income. The rate of increase of gross income in that period, however, is unlikely to differ much from that of net income: the proportion of depreciation to net income in 1913 was only about 8 per cent and the volume of capital equipment and national income in 1913 and 1880 show that this percentage could not have undergone a great change within this period. Thus the relative share of manual labour in gross income altered within the period in question similarly to that in net income.

The figures for 1911 and 1924–35 are obtained on the basis of Mr. Colin Clark’s data on “Distribution of Income between Factors of Production, 1911 and 1924–35” (National Income and Outlay, p. 94) and depreciation (pp. 86, 169). The relative shares here calculated differ from those given by Mr. Clark (p. 94) only in that they are taken in relation to gross home-produced income.

<table>
<thead>
<tr>
<th>Year</th>
<th>1880</th>
<th>1911</th>
<th>1913</th>
<th>1924</th>
<th>1925</th>
<th>1926</th>
<th>1927</th>
<th>1928</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (Bowley)</td>
<td>43.5</td>
<td>39.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross income (Clark)</td>
<td>36.5</td>
<td>38.2</td>
<td>37.5</td>
<td>37.0</td>
<td>38.3</td>
<td>38.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income (Bowley)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross income (Clark)</td>
<td>37.3</td>
<td>36.5</td>
<td>38.6</td>
<td>38.0</td>
<td>37.5</td>
<td>37.3</td>
<td>36.7</td>
</tr>
</tbody>
</table>

We see that the relative share of manual labour in the national income in Great Britain declined moderately between 1880 and 1913 and showed a remarkable stability between 1913 and 1935 both in the long run and in the short period.

2. The figures for the U. S. A. are based on Dr. King’s The National Income and Its Purchasing Power, 1909–1928 and a recent estimate of national income and depreciation by Dr. Kuznets.

* The real capital per head increased by about 25 per cent, the real income per head by about 40 per cent (National Income and Outlay, pp. 273 and 232) while the rate of depreciation was probably to some extent higher in 1913 than in 1880.
The relative shares of manual labour in the net national income in 1909 and 1928 are according to King 33.7 and 32.4. Also here the change of relative shares in gross income is probably not very different.

For the period 1929–35 (most interesting from the standpoint of short-period analysis), Dr. Kuznets' estimates are used. These estimates, however, give separate figures of wages and salaries only for "selected industries" (manufacturing, mining, construction, and transport). Thus here we could only calculate the share of manual labour in the income of this part of United States economy. But in spite of this the figures obtained are quite valuable for our investigation. For a section of a national economy can of course be treated as an open economic system, and in our theoretical analysis we do not suppose the system to be closed. (Otherwise the figures concerning the English national income could not be taken into consideration either.)

We obtained the gross income of "selected industries" by adding to their "income produced" the depreciation estimated by Dr. Kuznets in Gross Capital Formation. The relative shares of manual labour in this gross income are given in the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>1909</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
</tr>
</thead>
<tbody>
<tr>
<td>In net national income (King)</td>
<td>33.7</td>
<td>32.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In gross income of manufacturing, mining, construction, and transport (Kuznets)</td>
<td>40.0</td>
<td>42.2</td>
<td>42.0</td>
<td>41.0</td>
<td>37.8</td>
<td>39.5</td>
<td>39.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here, too, the long-run change between 1909 and 1928 is very small. Fluctuations in the period 1929–35, however, are much greater than in Great Britain, no doubt owing to the violent disturbances in the

3 The National Income, p. 80. We have excluded from income the services of durable consumption goods which King treats as a part of national income (he calls this part "imputed income"). We have also excluded from King's figures of wage income that of shop assistants, which we treat throughout (according to Clark) as salaries.


5 Pp. 11 and 12. Depreciation and maintenance is estimated here for the whole economy (dwelling houses excluded) but as a matter of fact it can be almost totally attributed to manufacturing, mining, construction, and transport. Mr. Kuznets has afterwards corrected these figures and we introduce these corrections as given in Mr. Keynes' note, Economic Journal, September, 1936. For 1934 and 1935 we were obliged to make our own rough estimates by means of interpolation.
United States economy while the depression in Great Britain was relatively mild. With the exception of 1933, however, the difference from the average is not great.

As we see on the basis of statistical data the relative share of manual labour in gross income shows only small changes both in the long run and in the short period. We shall try to explain this "law" and establish conditions under which it is valid.

**THE DEGREE OF MONOPOLY AND THE DISTRIBUTION OF THE PRODUCT OF INDUSTRY**

Let us consider an enterprise with a given capital equipment which produces at a given moment an output $x$ and sells it at price $p$. The short-period marginal cost $m$ (i.e., the cost of producing an additional unit of product with a given capital equipment) is made up of the sum of the short-period marginal costs of: depreciation $d_m$ (caused by greater use of equipment), salaries $s_m$, wages $w_m$, and raw materials $r_m$:

$$m = d_m + s_m + w_m + r_m.$$ 

At the same time the price is equal to the sum of the corresponding average costs $d_a$, $s_a$, $w_a$, $r_a$ and the average capitalist income (profit and interest) $c_a$ per unit of output:

$$p = c_a + d_a + s_a + w_a + r_a.$$ 

We subtract the first equation from the second and obtain:

$$p - m = c_a + (d_a - d_m) + (s_a - s_m) + (w_a - w_m) + (r_a - r_m).$$ 

According to Mr. Lerner\(^7\) we shall call the degree of monopoly of the enterprise $\mu$, the ratio of the difference between price and marginal cost to price, or:

$$\mu = \frac{p - m}{p}.$$

If marginal cost is equal to marginal revenue, $\mu$ is equal to the inverse of the elasticity of demand for the product of the enterprise. Substituting $p\mu$ for $p - m$ in the equation (1) and multiplying both sides by the output $x$ we get:

$$xp\mu = xc_a + x(d_a - d_m) + x(s_a - s_m) + x(w_a - w_m) + x(r_a - r_m).$$

Such an equation can be written for each enterprise of an economy (or

\(^6\) We mean here by $p$ the "net price," i.e., the revenue per unit of product after deduction of advertising costs, etc.

any of its sections). By adding the equations for all enterprises we obtain:

$$\sum x_{p\mu} = \sum xc_a + \sum x(d_a - d_m)$$

$$+ \sum x(s_a - s_m) + \sum x(w_a - w_m) + \sum x(r_a - r_m).$$

The sum $\sum xc_a$ is nothing else than the aggregate net capitalist income $C$. Further, in a great majority of enterprises marginal depreciation $d_m$ is small in comparison with average depreciation $d_a$; thus $\sum x(d_a - d_m)$ can be represented by $D(1 - \alpha)$ where $D$ is the aggregate depreciation and $\alpha$ a small positive fraction. For similar reasons $\sum x(s_a - s_m)$ can be represented by $S(1 - \beta)$ where $S$ is the aggregate salary and $\beta$ a small positive fraction.

We are now going to examine the member $\sum x(w_a - w_m)$. The shape of the average wage-cost curve differs in various types of enterprise. In most industries the average cost of manual labour falls slowly, remains constant, or rises slowly until full employment in two shifts of six days a week is reached. In the second type of enterprise the average wage cost falls rather sharply before this point is attained (railways). In the third type a sharp rise of average wage cost begins relatively early (agriculture and mining). If we consider now an economy in which: (1) The second and third type do not produce a large percentage of turnover; (2) Most enterprises of the first two types do not exceed full employment in two shifts six days a week; then the sum $\sum x(w_a - w_m)$ is likely to be small in comparison with the aggregate wage $W$. Indeed, the greatest part of income is produced under conditions of slowly changing manual-labour cost, and thus by enterprises for which $w_a - w_m$ is small in relation to $W$. For the second and third type this difference is not so small in comparison with $W$, and positive or negative respectively. Since neither of the latter types produces a large proportion of aggregate turnover $\sum px$, it will be easily seen that the sum $\sum x(w_a - w_m)$ is probably small in comparison with $W$. It can thus be represented by $\gamma W$ where $\gamma$ is a small positive or negative fraction.

As concerns the average cost of raw materials it can be supposed approximately constant, and consequently the sum $\sum x(r_a - r_m)$ can be neglected as being near to $0$.

On the basis of the above assumptions which seem to hold good for highly developed industrial economies we can write equation (2) as follows:

$$\sum x_{p\mu} = C + D(1 - \alpha) + S(1 - \beta) + \gamma W$$

or

$$\sum x_{p\mu} = (C + D + S) - (D\alpha + S\beta - \gamma W)$$

where $\alpha$, $\beta$, and $\gamma$ are small fractions.
Now it is obvious that both $\alpha D$ and $\beta S$ are small in relation to $C+D+S$; but the same can be said about $\gamma W$ since, as the statistical data quoted above show, $W$ is less than half of the gross income $Y$ and thus less than $Y-W=C+D+S$. We can consequently conclude that $\alpha D+\beta S-\gamma W$ is also small in comparison with $C+D+S$, and therefore:

$$\sum xp\mu = C + D + S$$

can be regarded as a good approximation. Now let us divide both sides of this equation by the aggregate turnover $T = \sum xp$.

$$\frac{\sum xp\mu}{\sum xp} = \frac{C + D + S}{T}.$$

The expression on the left-hand side of this equation is nothing else than the weighted average of the degree of monopoly $\mu$ which we shall denote by $(\mu)$. We have thus the following proposition: The relative share of gross capitalist income and salaries in the aggregate turnover is with great approximation equal to the average degree of monopoly:

$$\frac{C + D + S}{T} = (\mu).^8$$

**HOW IS IT POSSIBLE FOR THE DEGREE OF MONOPOLY TO DETERMINE THE DISTRIBUTION OF THE PRODUCT OF INDUSTRY?**

1. The results attained in the last section may indeed seem paradoxical. In the case of free competition the average degree of monopoly $(\mu)$ is equal to zero; thus equation (3) seems to show that free competition makes it impossible not only to earn profits and interest, but even to cover depreciation and expenses for salaries—all gross income being absorbed by wages. This paradox is, however, only apparent. The formula (3) can be correct merely when the assumptions on which is is based are fulfilled. According to these assumptions: (1) The short-period marginal-cost curve does not differ considerably in the majority of enterprises from the short-period average-cost curve of manual labour and raw materials—up to a certain point (where full employment of the factory in two shifts of six days a week is reached). (2) The output in these enterprises is mostly below this point. These assumptions are quite realistic, but such a state of affairs is possible only with the existence of monopoly or imperfect competition. If free competition prevails, the second condition cannot be fulfilled: enterprises must close

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^8 This formula will also be valid for a section of a national economy if the basic assumptions are fulfilled. This will clearly be the case for the set of “selected industries” in U. S. A. (see pp. 97–100) including manufacturing, mining, construction, and transport.
down or maintain such a degree of employment that the marginal cost is higher than the average cost of manual labour and raw materials. In the real world an enterprise is seldom fully employed in two shifts of six days a week, a fact which is therefore a demonstration of market imperfection and widespread monopolies. And our formula, though quite realistic, is not applicable in the case of free competition.

The second question which may be raised is of a more complex character. Since, according to our formula, the distribution of the product is at every moment determined by the degree of monopoly, it therefore holds both for the short period and in the long run. The formula was, however, deduced on the basis of, so to speak, pure short-period considerations. And both the elasticity of substitution between capital and labour, and inventions are, contrary to the prevailing opinion, of no influence on the distribution of income.

The answer is: (1) That the long-period analysis of distribution is generally conducted on a basis of oversimplified representation of output as a function of only two variables—capital (taken in abstracto) and labour. In this way, the short-period cost curves are—as we shall see at once—excluded artificially from this analysis. (2) On the basis of our assumptions these curves have a special shape which makes for the elimination of factors other than the degree of monopoly from the mechanism of distribution. To clarify the problems concerned we shall now consider the dependence of long-run distribution of the product of industry on the shape of the short-period cost curves.

2. A particular commodity can be produced with various types of equipment requiring more or less labour and raw materials per unit of product. The conditions of production are, however, determined not only by the choice of the type of equipment but also by its use. Not only may the kind of machinery be varied but it is also, for example, possible to work with the same machinery in one or two shifts.

Let us assume for a moment free competition and draw for each alternative type of equipment, which can be applied in the production of the commodity considered, a short-period marginal-cost curve and a short-period average-cost curve of manual labour and raw materials (Figure 1). The shaded area then represents the value of net capitalist income, depreciation, and salaries, while the unshaded area LMNO represents the cost of manual labour and raw materials.

To determine the position of long-period equilibrium we define first for each type of equipment the level of prices at which the shaded area covers salaries, depreciation, interest, and normal profit (i.e., the rate of profit at which the industry in question neither expands nor contracts). We shall call this price the normal price attached to a given type of equipment, and the corresponding use of this equipment, its
normal use.\textsuperscript{9} From all types of equipment we choose that to which the lowest normal price is attached. It is easy to see that the normal use of this type of equipment represents the long-run equilibrium. It is clear now that the shape of the short-period marginal-cost curves corresponding to various types of equipment influences the formation of long-run equilibrium.

If some change in basic data takes place—e.g., the rate of interest alters or new invention occurs, the long-run equilibrium is shifted; a new type of equipment is used in a "normal" way, and in general the relation of shaded and unshaded areas will be different from that in the initial position. This is quite in accordance with the prevailing long-run theory of distribution. We shall see, however, that such is not the case with the peculiar shape of marginal-cost curves assumed in the deduction of formula (3) and if we admit, instead of free competition, a certain given degree of monopoly.

We take for granted that the short-period marginal-cost curve does not differ appreciably from the average-cost curve of manual labour and raw materials, below the point $A$ (Figure 2). We represent them thus by the same thick curve $PMB$. With a given degree of monopoly the relation of price and marginal cost is a constant $1/(1-\mu)$. Thus if output remains below $OA$ the price corresponding to it is represented

\textsuperscript{9} It is easy to see that with free competition the normal use coincides with so-called optimum use.
by the curve QRC, whose ordinates are proportionate to those of the curve PMB. The ratio of shaded areas representing profits, interest, depreciation, and salaries to the unshaded area representing wages and cost of raw materials is equal to $\mu/(1-\mu)$.

We define in exactly the same way as before the normal use for each type of equipment as that at which normal profit is earned. The long-run equilibrium is again represented by the normal use of such type of equipment that—with a given degree of monopoly—it is impossible to earn profits higher than normal in employing plants of a different type. If the basic data alter, the new long-run equilibrium is represented by the normal use of a different type of equipment. The long-run equilibrium price of the product alters too, but not its relation to the average cost of manual labour and raw material, since for all types of equipment the marginal-cost curve coincides with the average-cost curve of manual labour, and the degree of monopoly (which is equal to the relation of price to marginal cost) is supposed to be given. In that way the distribution of the product among factors, as expressed by the relation of shaded and unshaded area, remains unaffected by changes of basic data so long as the degree of monopoly is unaltered and the use of equipment in long-run equilibrium does not reach the point A.

The change of basic data may of course also influence the degree of monopoly. For instance, a change in the rate of interest or technical
progress affects the size of the enterprise which is essential for the degree of monopoly. (The variation of the scale can be treated as a special case of variation of the type of equipment.) In that way such changes influence the distribution of income, but this is not in contradiction with our results because it is the channel of the degree of monopoly through which this influence makes itself felt.

**DISTRIBUTION OF THE NATIONAL INCOME**

1. Our proper task is to find the relative share of wages \( W \) in the national income \( Y \). Since \( Y \) is equal to the sum of capitalists' income \( C \), depreciation \( D \), salaries \( S \), and wages \( W \), it amounts to the same as to find the determinants of \( (C + D + S) / Y = (Y - W) / Y \). In multiplying each side of the equation

\[
\frac{C + D + S}{T} = (\mu)
\]

by the ratio of turnover \( T \) and gross income \( Y \) we obtain:

\[
\frac{C + D + S}{Y} = (\mu) \frac{T}{Y}
\]

Thus it is the degree of monopoly \( (\mu) \) and the ratio of turnover to income which determines the distribution of income.

On the basis of Mr. Colin Clark's data\(^{10}\) there was in the manufacturing industries of Great Britain in 1934:

\[
(\mu) = 0.23; \quad \frac{T}{Y} = 2.3; \quad \frac{C + D + S}{Y} = 0.23 \times 2.3 = 5.3.
\]

I ventured to make a rough estimate (based also on Mr. Clark's data) for the entire economy of Great Britain and obtained:

\[
(\mu) = 0.30; \quad \frac{T}{Y} = 2.1; \quad \frac{C + D + S}{Y} = 0.30 \times 2.1 = 0.63.
\]

2. The factors \( (\mu) \) and \( T/Y \) are not independent: a change in the degree of monopoly influences the ratio of turnover to income. As we shall see on the basis of a numerical example a rise (fall) of the degree of monopoly causes a decrease (increase) of \( T/Y \) but in a lesser proportion.

We shall consider for our purpose an economy producing its output in two stages: in the first semimanufactured goods are produced from foreign raw materials; in the second the former are worked up into

\(^{10}\) *National Income and Outlay*, pp. 132, 133.
finished commodities. Let the numerical scheme of production be as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Raw materials</th>
<th>Wages</th>
<th>Profits, interest, depreciation, salaries</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st stage</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>2nd stage</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Item</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>24</td>
</tr>
</tbody>
</table>

The degree of monopoly is:

\[
(\mu) = \frac{C + D + S}{T} = \frac{6}{24} = 0.25,
\]

and the relation of aggregate turnover to aggregate income:

\[
\frac{T}{Y} = \frac{T}{W + (C + D + S)} = \frac{24}{6 + 6} = 2.0.
\]

Let us now suppose that the degree of monopoly has changed at all stages by 10 per cent. Our scheme will then alter as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Raw materials</th>
<th>Wages</th>
<th>Profits, interest, depreciation, salaries</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st stage</td>
<td>4</td>
<td>2</td>
<td>2.27</td>
<td>8.27</td>
</tr>
<tr>
<td>2nd stage</td>
<td>8.27</td>
<td>4</td>
<td>4.65</td>
<td>16.92</td>
</tr>
<tr>
<td>Item</td>
<td>12.27</td>
<td>6.00</td>
<td>6.92</td>
<td>25.19</td>
</tr>
</tbody>
</table>

The degree of monopoly is now (in accordance with the assumption of a 10 per cent change):

\[
(\mu) = \frac{6.92}{25.19} = 0.275,
\]

and the ratio of turnover to income:

\[
\frac{T}{Y} = \frac{25.19}{6.00 + 6.92} = 1.95.
\]

Thus the ratio of turnover has diminished by 2.5 per cent as a result of the increase in the degree of monopoly by 10 per cent.

We can now conclude that the relative share \((C+D+S)/Y\) increases \textit{caeteris paribus} with the rise of the degree of monopoly but in a lesser
proportion than the latter. [In the example above \((C+D+S)/Y\) increased from \(6/(6+6)=0.5\) to \(6.92/(6.00+6.92)=0.536\), i.e., by 7.2 per cent as a result of the 10 per cent increase of \((\mu)\].

3. Changes in \(T/Y\) can, of course, be caused by influences other than a change in \((\mu)\). A change in the price of “basic raw materials”—i.e., of products of agriculture and mining in relation to wages in other industries—will clearly also have an important influence. It is easy to see on the basis of our scheme that the ratio of turnover to income increases (decreases) with the rise (fall) of the prices of basic raw materials in relation to wages, but in a much smaller proportion.

Let us suppose that the raw materials manufactured in the first stage (we assumed them to be of foreign origin) become 50 per cent dearer, wages (and the degree of monopoly) remaining unaltered. Then our scheme alters as follows:

<table>
<thead>
<tr>
<th>Raw materials</th>
<th>Wages</th>
<th>Profits, interest, depreciation, salaries</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st stage</td>
<td>6</td>
<td>2</td>
<td>2.67</td>
</tr>
<tr>
<td>2nd stage</td>
<td>10.67</td>
<td>4</td>
<td>4.89</td>
</tr>
<tr>
<td>Item</td>
<td>16.67</td>
<td>6.00</td>
<td>7.56</td>
</tr>
</tbody>
</table>

and \[\frac{T}{Y} = \frac{30.23}{6.00 + 7.56} = 2.23\].

Thus, as the effect of the rise of prices of “basic raw materials” in relation to wages by 50 per cent, the ratio \(T/Y\) has risen from 2.0 to 2.23, i.e., only by 11.5 per cent.

Since the degree of monopoly remained constant, \((C+D+S)/Y\) has of course increased in the same proportion (from \(6/(6+6)=0.5\) to \(7.56/(6.00+7.56)=5.58\)). It may seem at first approach paradoxical that the rise in price of foreign raw materials causes an increase of the relative share of capitalist incomes, depreciation, and salaries and thus a fall in the relative share of wages. But since the rise in prices of foreign raw materials increases the turnover \(T\), and with a given degree of monopoly \(C+D+S\) constitutes a constant percentage of \(T\), \(C+D+S\) also must increase while the wage bill remains by assumption unaltered.

4. We have seen that: (1) The rise of the degree of monopoly causes a less than proportionate increase of \((C+D+S)/Y\) (in our example 10 per cent and 7.5 per cent respectively). (2) The rise of prices of “basic raw materials” in relation to wages causes also an increase of
(C + D + S)/Y but in a much lesser proportion (in our example 50 per cent and 11.5 per cent respectively). Thus we can find here some reasons for the tendency of relative shares towards stability. Indeed, the degree of monopoly does not undergo violent changes either in the long run or in the short period. The fluctuations in prices of “basic raw materials” in relation to wages, though strong, are only slightly reflected in the changes of relative shares. But of course if the most unfavourable case of joint action of these factors occurs, the changes of the relative shares may be appreciable; if for instance in our scheme the degree of monopoly increases by 10 per cent and the “basic raw materials” become 50 per cent dearer, (C + D + S)/Y increases by about 20 per cent. We shall see below that the remarkable stability of the relative shares which we notice in statistics is the result of these determinants working in opposite directions. This phenomenon occurred only by chance during the long period considered, and may cease in the future; while in the business cycle there seems to be a steady tendency for the conflict of two forces to keep the fluctuation of relative shares within a rather narrow field.

CHANGES IN THE DISTRIBUTION OF THE NATIONAL INCOME IN THE LONG RUN

1. The degree of monopoly has undoubtedly a tendency to increase in the long run because of the progress of concentration. Many branches of industries become “oligopolistic”; and oligopolies are often transformed into cartels.

As concerns the secular trend of the ratio of turnover to income under the influence of changes in the relation of prices of “basic raw materials” to wages it is difficult to say anything definite a priori.

2. As we have seen in the first section: the relative share of manual labour in the national income in Great Britain has fallen between 1880 and 1913 from 43 to 39 and thus the relative share of capitalist incomes, depreciation, and salaries has risen from 57 to 61. The relation between Sauerbeck’s index of wholesale prices and Mr. Clark’s index for deflation of national income has not changed (between 1880 and 1913 both Sauerbeck’s and Clark’s indexes increased by 6 per cent). Thus the relation T/Y has not altered and the degree of monopoly must have increased in the same proportion as the relative share of capitalist incomes, depreciation, and salaries in the national income (i.e., by 7 per cent if the figures are precise).

Between 1913 and 1935 we do not see any appreciable change in the relative shares, but the degree of monopoly increases considerably. Indeed, Sauerbeck’s index has fallen during that time by 2 per cent,

\[\text{National Income and Outlay, pp. 231 ff.}\]
while the “income prices” have risen by about 60 per cent. Of course Sauerbeck’s index is not suitable for representing “turnover prices,” since the weight of raw materials in it is too large and that of finished goods too small, but this divergence is sufficient to show that there was a considerable change in $T/Y$ because of the relative fall in the prices of raw materials. I tried to make a rough estimate of the rise of $T/Y$ and I think it is unlikely to be less than 10–15 per cent. Thus the degree of monopoly has increased between 1913 and 1935 more than between 1880 and 1913. The only reason why the relative shares have not changed during the last twenty years is the sharp fall in the prices of “basic raw materials.” (Between 1930 and 1935 the increase in the degree of monopoly in Great Britain seems to have been especially strong.) Should a fall in prices of basic raw materials not have happened during the period considered, the relative share of capitalist income, depreciation, and salaries in gross income would have risen during the last 20 years from 63 to 70 per cent at least, a change which amounts to a fall in the share of manual labour from 37 to 30 per cent. Had this been so, it is obvious that the economic and political face of Great Britain now would be quite different.

The development in the U. S. A. between 1909 and 1928 is similar. The relative shares were approximately stable while the value of $T/Y$ appreciably diminished. The wholesale all-commodity index increased by about 45 per cent, King’s index of “income prices” by about 80 per cent. Thus here again the degree of monopoly must have risen considerably, but the influence on the relative shares was counterbalanced by the relative fall of the prices of “basic raw materials.”

It is of course not at all certain that in the future the rise of the degree of monopoly will continue to be compensated by a fall in the prices of “basic raw materials.” If it fails to do so the relative share of manual labour will tend to decline.

CHANGES IN THE DISTRIBUTION OF THE NATIONAL INCOME DURING THE BUSINESS CYCLE

1. We shall examine first the changes which the ratio of turnover to income $T/Y$ undergoes during the business cycle as a result of changes in the prices of “basic raw materials” in relation to wages.

The prices of produce of agriculture and mining fluctuate much more strongly than the cost of labour in other industries. This is due to the fact that marginal cost curves in agriculture and mining, as distinct from other sectors of the economy, slope steeply upwards. In addition, wages in agriculture fluctuate much more strongly during the business cycle than in other branches of the economy. The rise (or fall) of “basic

12 Ibid., pp. 235 and 204.
raw material” prices relative to labour cost causes, as was shown above, an increase (or decrease) in value of $T/Y$. Thus the value of $T/Y$ must rise in the boom and fall in the slump.

Much more complicated is the question of the changes of degree of monopoly in the trade cycle. It was recently admitted by Mr. Harrod that the degree of monopoly increases in the boom and falls in the slump. In the slump consumers “resent and resist the curtailment of their wonted pleasures . . . Their efforts to find cheapness become strenuous and eager. Nor are commercial firms exempt from this influence upon their purchase policy; they too have received a nasty jolt and must strain every nerve to reduce costs.”

Thus the imperfection of the market is reduced and the degree of monopoly diminished.

Mr. Harrod was rightly criticised in that there exist other factors which influence the degree of monopoly in the opposite direction. For instance, in the slump, cartels are created to save profits and this of course increases the degree of monopoly, while they are afterwards dissolved in the boom because of improving prospects of independent activity and the emergence of outsiders. It must be added that the fall of prices of raw materials in the slump creates among the entrepreneurs a reluctance to “pass it on to the buyer,” and this too of course increases the degree of monopoly. And it can be stated on the basis of data quoted above that the influence of these factors in raising the degree of monopoly during the slump is stronger than that of the diminishing imperfection of the market.

If we look at our data on relative shares we see that in general they do not change much during the business cycle and in any case there is no clear tendency for the relative share of manual labour to rise during the slump. But the relative share of capital income, depreciation, and salaries in the total income is equal to $(\mu)T/Y$. Thus, if the value of this expression does not fall in the slump while $T/Y$ does as a result of the fall in the price of “basic raw materials” relative to wages, the degree of monopoly must have the tendency to increase in the slump and fall in the boom.

We see now that, as was already mentioned, the apparent stability of relative shares in the cycle is in reality the effect of the opposite changes of $(\mu)$ and $T/Y$.

2. We shall now examine the special problem of the influence of changes in money wages on the distribution of national income.

Wage cutting is likely to increase to a certain extent the degree of monopoly because a tendency may exist “not to pass it on to the

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buyer.” As concerns the ratio of turnover to income, the all-round reduction of wages by the same per cent in a closed economy leaves it of course unaffected. But in an open economy this is not the case. The reduction of wages in Great Britain, e.g., importing most of the “basic raw materials,” must cause a rise of $T/Y$. Thus both $(\mu)$ (probably) and $T/Y$ (in an open economy importing raw materials) will be increased by the reduction of wages and consequently so will the relative share of capitalist income, depreciation, and salaries; or what amounts to the same thing, the relative share of manual labour will be reduced.

These results may be of some importance for the interpretation of the Keynesian theory of wages. This theory states grosso modo that the reduction of money wages in a closed system (the rate of interest being kept constant) causes a proportionate fall in prices while employment remains unaltered; for an increase in employment and income must raise the volume of saving and this must be accompanied by a rise in the volume of investment, which is however unlikely to occur. If we take into account, however, that the degree of monopoly increases as a result of wage reduction, which, as we stated above, is likely to happen, and thus the distribution of income is changed to the disadvantage of manual workers, then to the same volume of investment corresponds a lower level of employment; for the same amount can now be saved out of a smaller income. In Keynesian terms this may be expressed by saying that the fall in money wages lowers the propensity to consume by increasing the degree of monopoly and in consequence tends to reduce employment.15

If we pass from a closed to an open system a fall in money wages may cause an increase in the balance of trade and thus in foreign investment, and this of course raises employment. But it follows from what we have shown above that this is not the only influence appearing in an open system. For in a country importing raw materials the ratio of turnover to income will increase, and this causes a change of distribution to the disadvantage of manual workers, and consequently reduces the propensity to consume. Thus if we “open” the system there will be two opposite forces at work, and it is by no means clear in what direction they will “push” the employment.

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15 Mr. Keynes also considers the possibility of wage reductions influencing the propensity to consume but on other lines—e.g., by causing a shift of income from entrepreneurs to rentiers. General Theory, p. 262.