# Behind the Profitability Trends[*]

## Andrew Glyn

In the course of the long post-war boom of the 1950's and 1960's profitability played a very minor role in mainstream discussion of macroeconomic trends. Data on aggregate profits were calculated in the National Accounts of most of the advanced capitalist countries, but there was no systematic attempt in any of them to present official series for the profit rate. The same lack of concern with profits was manifested in neoclassical growth theory where the profit rate is simply an indicator of the relative scarcity of capital, with no independent role in determining the course of capital accumulation.

All that has changed now. The OECD now presents data for the profit rate and profit shares in its National Accounts publications and analyses them in its influential *Economic Outlook*. This wider availability of data, together with the growing appreciation in the 1970's that there was a profitability "problem," generated a large number of academic studies of profitability published from differing theoretical positions and covering a range of countries (see Glyn and Sutcliffe (1972), Feldstein and Summers (1977), Flemming (1976), Weisskopf (1979), Armstrong, Glyn and Harrison (1984), Sutch and Chan-Lee (1985), Bowles, Gordon and Weisskopf (1986), Erixon (1987) and Carlin (1987)).

An attempt to evaluate this very substantial body of work would be a major task. The purpose of the present paper is a much more modest one, to present the data on profitability in the three major capitalist blocks (USA, Japan and Europe) from 1960 to the early 1980's and to "decompose" these trends in a way which illuminates the processes at work. Such an analysis cannot validate one or other of the contending view as to the causes of the decline of profitability, but it does present a fuller picture of the facts which such theories must seek to explain.

### The Simplest Decomposition

The profit rate on capital employed can be most simply decomposed into the profit share of output and the output capital ratio according to the formula :

$$R/K = R/Y \times Y/K$$

where $R$ is aggregate profits, $K$ is the capital stock and $Y$ is output all at current prices.

Marx was the first to analyse the rate of profit in this general way,[1] with $R/Y$ in our formula

1) Marx's actual formula of course was $R/K = R/W \times W/K$ where $W$ is the wage bill $(R + W = Y)$, $R/W$ is the rate of exploitation (expressed in money rather than labour values) and $W/K$ is the money expression of Marx's organic composition. As well as being measured in money rather than values (which may make little difference quantitatively——see Petrovic (1987)), the calculations in money terms based on national accounts statistics ignore the role of unproductive labour. According to one line of argument the wages of unproductive labour should be subtracted from $W$ and added to $R$ (see for example Moseley (1985)). This latter issue will not be discussed further, though if it is felt that the role of unproductive labour should be isolated there is nothing to stop the decomposition presented here being extended to show the influence of shifts in the share of unproductive labour in affecting the profit rate in money terms.

Table 1 a Profit Rates, 1960–73

| Percentages | | | | |
|---|---|---|---|---|
| | ACC | USA | EUROPE | JAPAN |
| Business | | | | |
| Peak year | 16.2[2] | 19.8[3] | 16.3[4] | 32.0[5] |
| 1973 | 12.9 | 13.1 | 11.4 | 19.6 |
| 1973÷peak year[1] | 0.80 | 0.66 | 0.70 | 0.61 |
| Manufacturing | | | | |
| Peak year | 24.0[2] | 35.5[3] | 20.4[4] | 46.8[5] |
| 1973 | 19.2 | 21.8 | 12.4 | 33.5 |
| 1973÷peak year[1] | 0.80 | 0.61 | 0.59 | 0.72 |

1) Year before sustained decline in profitability.
2) 1968. 3) 1966. 4) 1960. 5) 1970.

Table 1 b Profit Shares, 1960–73

| Percentages | | | | |
|---|---|---|---|---|
| | ACC | USA | EUROPE | JAPAN |
| Business | | | | |
| Peak year | 23.5[2] | 22.5[3] | 25.5[4] | 38.4[5] |
| 1973 | 20.2 | 16.7 | 19.4 | 30.4 |
| 1973÷peak year[1] | 0.86 | 0.74 | 0.76 | 0.79 |
| Manufacturing | | | | |
| Peak year | 23.7[2] | 23.0[3] | 24.7[4] | 40.7[5] |
| 1973 | 20.1 | 17.4 | 17.2 | 32.9 |
| 1973÷peak year[1] | 0.85 | 0.76 | 0.70 | 0.81 |

1) Year before sustained decline in profitability.
2) 1968. 3) 1966. 4) 1960. 5) 1970.

Table 1 c Output to Capital Ratios, 1960–73

| Percentages | | | | |
|---|---|---|---|---|
| | ACC | USA | EUROPE | JAPAN |
| Business | | | | |
| Peak year | 0.68[2] | 0.88[3] | 0.64[4] | 0.83[5] |
| 1973 | 0.64 | 0.78 | 0.59 | 0.64 |
| 1973÷peak year[1] | 0.94 | 0.89 | 0.92 | 0.77 |
| Manufacturing | | | | |
| Peak year | 1.01[2] | 1.54[3] | 0.83[4] | 1.15[5] |
| 1973 | 0.95 | 1.26 | 0.72 | 1.02 |
| 1973÷peak year[1] | 0.94 | 0.82 | 0.87 | 0.89 |

1) Year before sustained decline in profitability.
2) 1968. 8)1966. 4) 1960. 5) 1970.
Source : Armstrong/Glyn (1986).

playing the role of his rate of exploitation and $Y/K$ the organic composition of capital : to our knowledge Feinstein (1968) was the first to use such a decomposition systematically in empirical work.

The extent of the profitability decline since the mid-1960's is summarised in tables 1 and 2 which deal respectively with the period up to 1973 and the most recent year (1983) covered by our comprehensive data set.[2] The series are

2) The data set represents an updating and reworking of that used in Armstrong, Glyn and Harrison (1984). It is presented in detail and described in Armstrong and Glyn (1986). The decompositions for manufacturing profitability later in the paper take the story up to 1985 by linking on the most recent data to our basic set.

for the net rate of profit as a percentage of the net capital stock, which is considered to be a superior measure of the underlying economic return to the gross rate (see Armstrong et al. Data Appendix). Data is presented for the business sector as a whole, and for manufacturing. Lack of data forces us to use pre-tax series ; in our opinion these show most clearly the underlying forces on profitability (see Sargent (1982) however), but a full analysis should obviously include an assessment of the changing burden of taxation.

The data suggests that in each of the major blocks the rate of profit on capital employed was around one quarter to one third less in 1973 than it had been at its previous peak (table la). This applies broadly to both manufacturing and business. Declines in both the profit share $(R/Y)$ and output-capital ratio $(Y/K)$ contributed to falling profitability (tables 1 b and 1 c)

Whilst of remarkably similar orders of magnitudes in the three blocks, the declines in profitability took place at different speeds—over three cycles beginning around 1960 in Europe, over two cycles since 1966 in the USA and over just one cycle since 1970 in Japan. The combination of these trends (with changing weights and patterns) was that the aggregate profit rate for the big seven capitalist countries as a whole (ACC's) began to fall after 1968, and had fallen by around one fifth by 1973, with the profit squeeze contributing around three quarters of the decline and the falling output capital ratio one quarter.

That the aggregate fall began in 1968 is of some symbolic significance, 1968 being the year of the May events in France which most graphically demonstrated the problems being faced by the advanced countries at the end of the long boom. That the profit rate had fallen substantially by 1973 (the peak year before the first oil shock) is important as well, as it confirms that the golden age pattern of growth was running into severe difficulties *before* the oil

**Table 2 a　Profit Rates, 1973–83**

| Percentages | ACC | USA | EUROPE | JAPAN |
|---|---|---|---|---|
| **Business** | | | | |
| 1973 | 12.9 | 13.1 | 11.4 | 19.6 |
| 1983 | 9.5 | 9.8 | 8.6 | 12.9 |
| 1983÷peak year[1] | 0.59 | 0.49 | 0.53 | 0.40 |
| **Manufacturing** | | | | |
| 1973 | 19.2 | 21.8 | 12.4 | 33.5 |
| 1983 | 8.7 | 8.3 | 7.6 | 12.8 |
| 1983÷peak year[1] | 0.36 | 0.23 | 0.37 | 0.27 |

1) Year before sustained decline in profitability, which is ACC-1968, USA-1966, EUROPE-1960, JAPAN-1970.

**Table 2 b　Profit Shares, 1973–83**

| Percentages | ACC | USA | EUROPE | JAPAN |
|---|---|---|---|---|
| **Business** | | | | |
| 1973 | 20.2 | 16.7 | 19.4 | 30.4 |
| 1983 | 18.4 | 16.0 | 17.0 | 25.8 |
| 1983÷peak year[1] | 0.78 | 0.71 | 0.67 | 0.67 |
| **Manufacturing** | | | | |
| 1973 | 20.1 | 17.4 | 17.2 | 32.9 |
| 1983 | 11.8 | 10.0 | 10.8 | 17.3 |
| 1983÷peak year[1] | 0.50 | 0.43 | 0.44 | 0.42 |

1) Year before sustained decline in profitability, which is ACC-1968, USA-1966, EUROPE-1960, JAPAN-1970.

**Table 2 c　Output Capital Ratios, 1973–83**

| Percentages | ACC | USA | EUROPE | JAPAN |
|---|---|---|---|---|
| **Business** | | | | |
| 1973 | 0.64 | 0.78 | 0.59 | 0.64 |
| 1983 | 0.52 | 0.61 | 0.51 | 0.50 |
| 1983÷peak year[1] | 0.76 | 0.69 | 0.80 | 0.60 |
| **Manufacturing** | | | | |
| 1973 | 0.95 | 1.26 | 0.72 | 1.02 |
| 1983 | 0.74 | 0.83 | 0.70 | 0.74 |
| 1983÷peak year[1] | 0.73 | 0.54 | 0.84 | 0.64 |

1) Year before sustained decline in profitability, which is ACC-1968, USA-1966, EUROPE-1960, JAPAN-1970.
Source : Armstrong/Glyn (1986).

shock of 1974 (see Glyn et al. (1988) for a more comprehensive discussion).

Table 2 carries the story forward until 1983. In that year the rate of profit in business was one half or less of the level of boom years peak in each block, whilst in manufacturing it was one third or less. By 1983 the relative importance of the fall in the output capital ratio had increased, being of similar importance to the profit squeeze in business, though rather less in manufacturing (table 2 b and 2 c). Whilst the years since 1983 have seen some recovery in profitability, in some cases (most notably the UK) back to the level of 1973, the profit rate is generally still well below the levels of the golden age.

## I.　Profitability Trends up to 1973

### Decomposition of the Profit Share

Further information on the nature of the profit squeeze can be gained from decomposing the profit share. It is simplest to see this in terms of the wage share $(W/Y = 1 - R/Y)$. The wage share in value added can be broken down into product wages (money wages deflated by the price index for the gross output of the sector), productivity (real value added per person employed) and the price of gross output relative to that of value added (reflecting the behaviour of materials and other input costs relative to the factor incomes of wages and profits which comprise value added).[3] Thus

$$W/Y = W/E.\ Pq \times Py.\ E/Y \times Pq/Py$$

Where $E$ is employment,

$Py$ is the price index of value added,

$Pq$ is the price index of gross output.

This decomposition allows a *change* in the wage share to be seen as reflecting the growth of product wages, the growth of productivity and changes in the relative price of gross output and value added. Assuming no change in $Pq/Py$, the wage share will rise or fall depending on whether product wages rise faster or slower than labour productivity. Product wages represent the real cost of employing labour from the employers' point of view, that is the gross wage (including all social security contributions) deflated by the price index of gross output. This is different from the real wage in terms of what workers can buy which has to be deflated by consumer goods prices (and from which direct taxation should be subtracted). The balance between product wages and productivity is a crucial determinant of the profit share, which fluctuates with opposite sign, and greater am-

---

3)　Such decompositions of the profit share have a long history. Ricardo's discussion of the effect of increasing real cost of producing workers' subsistence in reducing profits is implicitly based on a decomposition of the wage share into real wages and productivity in the wage goods sector.

**Table 3   Europe Manufacturing(weighted)Profit Shares and Rates**

| % change per annum | early 60's | late 60's | early 70's |
|---|---|---|---|
| ( 1 )Hourly productivity | 6.2 | 6.3 | 6.0 |
| ( 2 )Effect of input costs | 0.0 | 0.3 | 0.7 |
| ( 3 )Real factor incomes=(1)+(2) | 6.2 | 6.5 | 6.7 |
| ( 4 )Product wages | 6.8 | 6.8 | 7.6 |
| ( 5 )Wage share=(4)−(3) | 0.6 | 0.3 | 0.9 |
| ( 6 )Profit share | −2.2 | −0.9 | −3.9 |
| ( 7 )Real output/cap ratio | −0.1 | 0.9 | −0.7 |
| ( 8 )Effect of capital costs | −2.3 | 0.8 | −0.8 |
| ( 9 )Current price $O/K$=(7)+(8) | −2.4 | 1.7 | −1.5 |
| (10)Profit rate=( 6 )+( 9 ) | −4.3 | 0.6 | −5.5 |

| Memorandum items | | | |
|---|---|---|---|
| ( a )Weekly hours worked | −0.8 | −0.6 | −1.4 |
| ( b )Relative consumer price | 1.7 | 0.6 | −0.1 |
| ( c )Real weekly wages= (5)+(a)−(d) | 5.2 | 6.0 | 6.8 |
| ( d )Real direct costs | 4.1 | 3.7 | 4.2 |
| ( e )Relative cap prices | 1.0 | 0.6 | 1.0 |
| ( f )Output prices | 1.9 | 2.6 | 6.7 |

| End of period levels | late 50's | | | |
|---|---|---|---|---|
| ( g )Profit share | 23.9 | 21.4 | 20.6 | 17.9 |
| ( h )Profit rate | 19.1 | 15.3 | 15.7 | 12.9 |

**Table 4   USA Manufacturing Profit Shares and Rates**

| % change per annum | 1960–66 | 1966–69 | 1969–73 |
|---|---|---|---|
| ( 1 )Hourly productivity | 3.9 | 1.6 | 4.2 |
| ( 2 )Effect of input costs | −0.1 | −0.1 | −2.7 |
| ( 3 )Real factor incomes=(1)+(2) | 3.8 | 1.5 | 1.5 |
| ( 4 )Product wages | 2.7 | 3.5 | 1.9 |
| ( 5 )Wage share=(4)−(3) | −1.1 | 2.0 | 0.4 |
| ( 6 )Profit share | 4.6 | −7.3 | −1.3 |
| ( 7 )Real output/cap ratio | 4.5 | −1.6 | 1.3 |
| ( 8 )Effect of capital costs | −1.6 | −3.2 | −2.6 |
| ( 9 )Current price $O/K$=(7)+(8) | 2.9 | −4.8 | −1.3 |
| (11)Profit rate=(6)+(9) | 7.7 | −11.7 | −2.8 |

| Memorandum items | | | |
|---|---|---|---|
| ( a )Weekly hours worked | 0.6 | −0.5 | 0.0 |
| ( b )Relative consumer price | 0.6 | 1.5 | 0.2 |
| ( c )Real weekly wages (5)+(a)−(b) | 2.7 | 1.5 | 1.7 |
| ( d )Real direct costs | 1.9 | 1.9 | 3.2 |
| ( e )Relative cap prices | 1.2 | 2.2 | 0.6 |
| ( f )Output prices | 0.9 | 2.6 | 4.7 |

| End of period levels | | | | |
|---|---|---|---|---|
| ( g )Profit share | 17.5 | 23.0 | 18.3 | 17.4 |
| ( h )Profit rate | 22.8 | 35.5 | 24.4 | 21.8 |

**Table 5   Japan Manufacturing Profit Shares and Rates**

| % change per annum | 1961–64 | 1964–70 | 1970–73 |
|---|---|---|---|
| ( 1 )Hourly productivity | 8.6 | 11.4 | 9.5 |
| ( 2 )Effect of input costs | 2.2 | 2.0 | −1.3 |
| ( 3 )Real factor incomes=(1)+(2) | 10.8 | 13.4 | 8.2 |
| ( 4 )Product wages | 14.0 | 12.6 | 12.4 |
| ( 5 )Wage share=(4)−(3) | 3.2 | −0.8 | 4.2 |
| ( 6 )Profit share | −4.6 | 1.3 | −6.9 |
| ( 7 )Real output/cap ratio | −3.4 | 0.5 | −2.4 |
| ( 8 )Effect of capital costs | 0.6 | 1.5 | −1.5 |
| ( 9 )Current price $O/K$=(7)+(8) | −2.8 | 2.0 | −3.9 |
| (10)Profit rate=(6)+(9) | −7.1 | 3.3 | −10.5 |

| Memorandum items | | | |
|---|---|---|---|
| ( a )Weekly hours worked | −1.3 | −0.7 | −1.0 |
| ( b )Relative consumer price | 6.4 | 4.2 | 2.6 |
| ( c )Real weekly wages= (5)+(a)−(b) | 6.3 | 7.7 | 8.8 |
| ( d )Real direct costs | 6.3 | 6.1 | 6.7 |
| ( e )Relative cap prices | 0.2 | 0.9 | 0.4 |
| ( f )Output prices | −0.3 | 1.5 | 4.8 |

| End of period levels | | | | |
|---|---|---|---|---|
| ( g )Profit share | 43.4 | 37.7 | 40.7 | 32.9 |
| ( h )Profit rate | 43.9 | 38.5 | 46.8 | 33.5 |

**Table 6   ACC's Manufacturing(weighted)Profit Shares and Rates**

| % change per annum | early 60's | late 60's | early 70's |
|---|---|---|---|
| ( 1 )Hourly productivity | 5.4 | 4.7 | 5.6 |
| ( 2 )Effect of input costs | 0.3 | 0.3 | −1.3 |
| ( 3 )Real factor incomes=(1)+(2) | 5.7 | 5.1 | 4.3 |
| ( 4 )Product wages | 5.5 | 5.7 | 5.2 |
| ( 5 )Wage share=(4)−(3) | −0.2 | 0.6 | 0.9 |
| ( 6 )Profit share | 0.7 | −2.1 | −3.4 |
| ( 7 )Real output/cap ratio | 1.7 | −0.4 | 0.0 |
| ( 8 )Effect of capital costs | 0.3 | −1.0 | −2.1 |
| ( 9 )Current price $O/K$=(7)+(8) | 2.0 | −1.4 | −2.1 |
| (10)Profit rate=(6)+(9) | 2.6 | −3.4 | −5.3 |

| Memorandum items | | | |
|---|---|---|---|
| ( a )Weekly hours worked | −0.2 | −0.6 | −0.7 |
| ( b )Relative consumer price | 1.9 | 1.6 | 0.4 |
| ( c )Real weekly wages= (5)+(a)−(b) | 4.1 | 4.0 | 4.6 |
| ( d )Real direct costs | 3.3 | 3.2 | 4.1 |
| ( e )Relative cap prices | 1.0 | 1.4 | 0.7 |
| ( f )Output prices | 1.1 | 2.4 | 5.4 |

| End of period levels | late 50's | | | |
|---|---|---|---|---|
| ( g )Profit share | 23.7 | 24.7 | 22.5 | 19.9 |
| ( h )Profit rate | 24.7 | 28.8 | 24.7 | 20.4 |

plitude, given that it is much smaller in absolute terms than the wage share.

We have deliberately measured product wages in terms of product prices(rather than value added prices)in order to isolate the effect of input costs.[4] When input prices rise faster

4) This distinguishes the method of decomposition used here from that of Weisskopf(1979 and 1985)who uses value added prices.

than output prices this imposes a squeeze on value added so that factor incomes, in real product terms, have to rise less rapidly than productivity. If product wages do not adjust to what is sometimes described as a slower "warranted" growth, then it is the share of profits in value added which feels the pinch. In this respect a rise in real cost of inputs acts

in a similar way to a decline in productivity in reducing the "room" for wage increases. Thus it is the balance between product wage on the one hand, and productivity adjusted for changes in the relative prices of gross output and value added on the other, which determines the trend in the wage share (and thus the profit share).

The first six lines of tables 3–5 perform such a decomposition for the wage, and thus the profit share, for the manufacturing sectors of Europe (a weighted average of the biggest four countries), the USA and Japan for the period 1960–73. The first three periods (early 1960's, late 1960's and early 1970's) represent the three pre-slowdown cycles. Table 6 shows weighted averages for the data for the three main blocks, and thus gives a picture of what was happening in the advanced capitalist countries as a whole. We concentrate on the manufacturing sector here both because of greater data availability (for output prices in particular) and because it bore the brunt of the decline in profitability as we have already seen.

In Europe the profit squeeze was already discernible in the early 1960's (table 3): the wage share grew by 0.6% per year (line 5) as product wages (line 4) grew that much faster than what was available for wages and profits, described in the table as real factor incomes (line 3). The growth rate of real factor incomes was the same as the rise in hourly productivity (line 1) as output prices were growing at the same rate as value added prices (line 2). This in turn reflected a similar rise in input costs as in factor incomes. At the end of the sixties the rate of squeeze eased slightly. But the early seventies saw a sharp intensification as the growth of product wages rose quite markedly, and the favourable trend in input costs was swallowed up by a slight decline in productivity growth. Figure 1 presents the faster growth in the wage share in the early seventies by charting the *change* in the growth rates of productivity, effect of input costs and thus real

incomes and finally product wages and thus wage share. The shifts in the growth rates are quite small (in keeping with the slow and persistent profit squeeze in Europe on average), but highlight the importance of accelerating product wage growth.

In the USA the profit squeeze took place in the late sixties as productivity slowed down sharply and product wages maintained substantial growth (figure 2); in the early seventies the squeeze was much less market as productivity recovered and product wages absorbed most of the sharp rise in relative input costs which cut the growth of real factor income by some two thirds (table 4).

In Japan the profit squeeze in the early seventies was very severe (table 5). Productivity growth slipped back from the very high rates recorded in the late sixties, but the shift in the trend of real input costs from boosting real factor incomes to reducing them below pro-ductivity growth was as important (figure 3). Product wage growth was maintained despite the sharp fall in real factor incomes and thus the wage share increased sharply.

Thus the periods of profit squeeze (Europe and Japan early seventies, USA late sixties) display some common characteristics. Product wage growth was maintained and/or slightly increased in the face of the slower growth of real factor incomes; this slower growth in turn reflected a decline in productivity growth and/or deterioration in the trend of real input costs. The fact that the profit squeezes were not attributable simply to a *faster growth* of wages does not reduce the importance of wages in the whole process. A failure of wage increases to slow down when the "room" for them declines is just as significant, and demands explanation as does an acceleration not "warranted" by a faster growth of factor incomes.

Even though the profit squeezes did not involve large accelerations in product wages it is still interesting to see whether the more militant bargaining characteristic of the period

Fig. 1   Europe Profit Squeeze
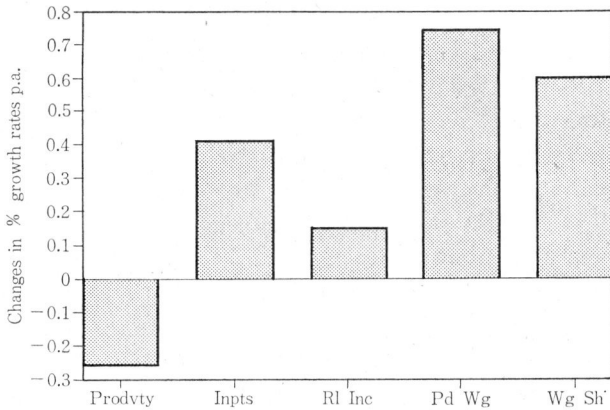Early 1970's (compared to late 60's)

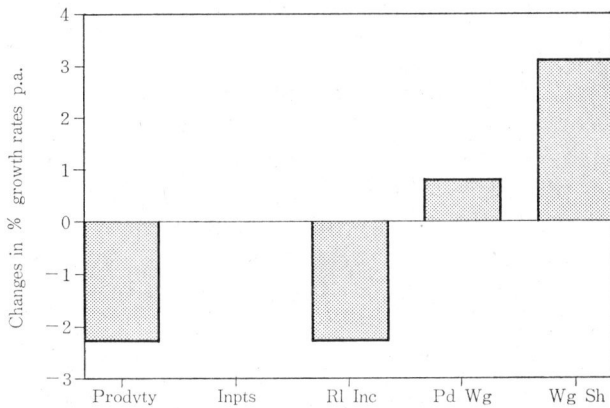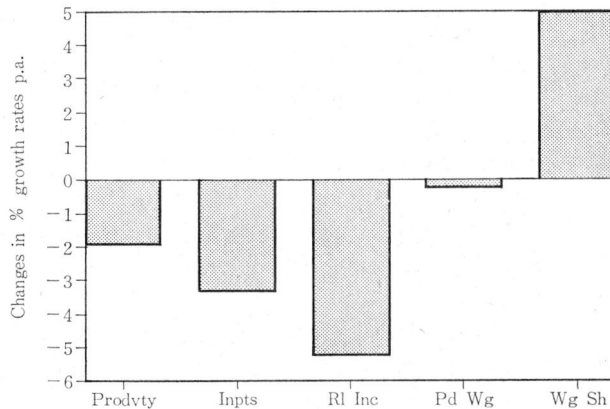Fig. 2   USA Profit Squeeze
Late 1960's (compared to early 60's)

Fig. 3   Japan Profit Squeeze
Early 1970's (compared to late 60's)

realised a faster growth of real wages in terms of workers purchasing power. Memorandum lines (a) – (c) translate the growth of hourly product wages into weekly real wages. Faster reductions in hours of work were noticeable (line a) in the USA in the late sixties and Europe in the early seventies, further indications of labour's enhanced bargaining strength. But there was also a sharp decline in the relatively fast increase of consumer goods prices (line b). Japan is the most striking example, for whereas consumer goods prices were rising more the 6% faster per year than manufacturing prices in the early sixties, by the early seventies the differential was less than 3%. Such shifts play an important role in the relationship between real wages and productivity. A possible explanation for these shifts might be decreasing importance in consumption baskets of food with especially rapid price increases as compared with manufactured goods. The net effect was to allow a much sharper acceleration in real than product wages ; we may speculate that this eased the pressure on manufacturers' profitability since a given rise in the rate of growth of product wages (relevant for manufacturers' costs) implied a faster acceleration of real wages (relevant to workers' living standards).

It must be emphasised that any such "accounting" for the profit squeeze, in terms of which variables (or their growth rates) shifted, cannot establish causation. For example a slowing down of productivity growth, or adverse movement in real input costs, only leads to a profit squeeze if product wages do not absorb the slowdown. If the profit markup on costs was maintained then workers would automatically bear their share of any reduction in the growth of real factor

incomes and thus allow the profit share to be maintained. That this did not happen suggests that profit margins were under pressure from a number of directions——workers' bargaining postion had been strengthened which allowed them to maintain or increase the growth rate of real wages, despite adverse movements in real input costs and/or productivity ; secondly product market pressures prevented firms fully passing on these cost pressures in the form of higher prices. Manufacturing prices were rising about 5 per cent per year in the early seventies as compared to 1 per cent per year in the early sixties, but this was insufficient to maintain profit margins.

The components of the explanation for the pre–1974 profit squeeze seem fairly clear from the data we have presented. Product wage growth was maintained or increased in circumstances where profit margins were already under pressure from faster growth of input costs and/or some slippage in labour productivity growth.

The behaviour of wages is most plausibly explained by the labour shortage, which increased markedly at different times in the various blocks (early sixties in Europe, mid–1960's in the USA and early seventies in Japan). Such a pattern is confirmed by vacancy statistics and in Continental Europe and Japan by the speed of decline of agricultural employment. To an extent therefore, the faster growth of product wages (or more broadly, direct costs of production[5]) played a necessary role in ensuring the faster scrapping of old vintages of equipment rendered redundant by the labour shortage. But the growth of wages went further than this ; the stronger bargaining position for workers implied by tighter labour markets also

5) Line (d) of our tables shows estimates of the growth of real direct costs (a weighted average of input prices and wages both deflated by manufacturing output prices). In each of the three blocks the growth of direct costs was as fast or faster in the early seventies than in earlier cycles which is consistent with there having been pressure from overaccumulation.

formed the economic backdrop to the wage explosions of the late sixties, which forced money wages far above levels necessary to ensure scrapping at existing inflation rates (see Soskice (1978)). This set of factors was analysed by Armstrong, Glyn and Harrison (1984 ch 11) under the term "overaccumulation" ; Sargent (1982) similarly emphasises the role of an unsustainable rate of accumulation in reducing profitability.

The concept of overaccumulation has been extended by Itoh (1980) to embrace the idea of excess demand for raw materials and other inputs leading to rapid price increases in the early seventies. That firms were not able to pass on these cost increases in higher prices must reflect heightened competition. Glyn and Sutcliffe (1972) argued that this intensified competition derived from international competition as trade barriers fell. There is some confirmation of the role of international competitiveness in the econometric work of Weisskopf (1985), Sutch and Chan-Lee (1985) and Carlin (1987), with the additional emphasis that changes in competitiveness have been strongly influenced by fluctuations in nominal exchange rates.

Two competing explanations for the falling off in productivity growth prior to 1974 would focus on the one hand on "social" factors (worker resistance to work reorganisation and new technology) and on the other on "technical" factors (weakening of the impact of post-war technologies as countries caught up with "best-practice" production systems and the development of equally productive new technologies faltered). Glyn et al. (1988) suggest that the "social" explanation may have been the more important in the years before 1973 (see also the discussion of the output capital ratio below).

The relative importance of the individual elements of this complex of factors is only hinted at by our decomposition of movements in the profit share. To try and be more precise

would require a full econometric model and a bold use of counterfactual simulations (see Bowles et al. (1986) for a pioneering attempt).

**Decomposition of the Output Capital Ratio**

As already pointed out there was some decline in the output capital ratio before 1974 which contributed to the decline in the profit rate. The main purpose of our decomposition is to stress the importance of various sets of relative prices (between capital stock and output and between output and value added) which affect the trend in the current price output capital ratio. Many discussions focus almost exclusively on the constant price ratio alone which, as we shall see, is only part of the story.

The net output-capital ratio may be written as follows :

$$nY/nK = q/k \times Pq/Pk \times y/q$$
$$\times Py/Pq \times k/nk \times ny/y$$

where $nY$, $ny$ are value added net of capital consumption at current and constant prices,

$nK$, $nk$ are net capital stock at current and constant prices,

$q$ is gross output at constant prices,

$k$ is gross capital stock at constant prices,

$y$ is gross value added at constant prices,

$Pq$, $Pk$, $Py$ are price indices of gross output, net capital stock and net value added respectively.

The first term is the gross output capital ratio : when multiplied by the third term (the value added to gross output ratio at constant prices) this yields the inverse of the familiar capital output ratio as conventionally measured.[6] The first relative price term is the ratio of the price of gross output to the price of capital goods (the terms of trade between the manufacturing sector and the suppliers of capital goods, some of which are overseas and some in the non-manufacturing sector of the country concerned). The second is the ratio of

the price of value added to the price of output ; as explained in the discussion of the profit share this reflects the relative price of inputs compared to gross output. Additional elements in the decomposition are the ratio of gross to net capital stock (reflecting the age composition of the capital stock) and the ratio of net to gross value added (measuring the weight of capital consumption and thus reflecting all the factors which affect size and composition of the capital stock at current prices).

Lines (7)–(8) of tables 3–6 show the trends in the real output to capital ratio, with the relative price and the other terms lumped together as the "effect of capital costs." The sum of these two changes generates the current price output capital ratio (line (9)).

Between the three blocks there is a rather common pattern of adverse trends in both the real output capital output ratio and in the effect of capital costs. Averaging the data for the ACC's (table 6) shows a steady real output to capital ratio in the early seventies, whilst the trend of capital costs was pushing the ratio down by about 2 per cent per year. In the early sixties, however, both factors had been favourable. Memorandum item (e) shows capital goods prices rising rather steadily at about one per cent per year faster than manufacturing output prices. So the main explanation for the deteriorating trend in capital costs lies in the slow rise of value added prices in relation to gross output prices in the early seventies, which again reflects the inability of manufacturers to pass on all the cost increases. This is clearly visible in table 5 for example where the sharp adverse movement of input costs in Japan in the early seventies (line 2) also pushed up capital costs (line 8).

The fact that a rapid rise in materials costs reduces the output capital ratio (value added, current prices) deserves reiteration. It is not often noticed that rising real input costs which contributes to the profit squeeze is also reflected in a declining output capital ratio.

---

6)　We are forced to assume the real ratio of value added to gross output is constant (constant "materials productivity") for lack of any data.

**Table 7 Japan Manufacturing Profit Shares and Rates**

| % change per annum | 1973–75 | 1975–79 | 1979–81 | 1981–85 |
|---|---|---|---|---|
| ( 1 ) Hourly productivity | 4.9 | 7.8 | 7.6 | 6.9 |
| ( 2 ) Effect of input costs | −8.2 | −2.4 | −9.0 | −2.0 |
| ( 3 ) Real factor incomes= (1)+(2) | −3.3 | 5.4 | −1.4 | 4.9 |
| ( 4 ) Product wages | 9.0 | 4.4 | −1.0 | 4.2 |
| ( 5 ) Wage share=(4)−(3) | 12.3 | −1.0 | 0.4 | −0.7 |
| ( 6 ) Profit share | −33.0 | 6.0 | −1.6 | 3.3 |
| ( 7 ) Real output/cap ratio | −10.9 | 4.6 | 1.4 | 2.0 |
| ( 8 ) Effect of capital costs | −7.5 | −2.5 | −2.1 | −1.7 |
| ( 9 ) Current price $O/K=$ (7)+(8) | −18.4 | 2.1 | −0.7 | 0.3 |
| (10) Profit rate=(6)+(9) | −44.3 | 8.1 | −2.5 | 3.7 |
| Memorandum items | | | | |
| ( a ) Weekly hours worked | −3.5 | 1.3 | −0.3 | 0.3 |
| ( b ) Relative consumer price | 2.8 | 3.2 | −1.8 | 1.3 |
| ( c ) Real weekly wages= (5)+(a)−(b) | 2.7 | 2.5 | 0.5 | 3.2 |
| ( d ) Real direct costs | 9.6 | 4.8 | 6.8 | 4.1 |
| ( e ) Relative cap prices | 0.4 | −0.4 | −3.9 | −0.3 |
| ( f ) Output prices | 14.9 | 3.0 | 8.2 | −0.2 |
| End of period levels | | | | |
| ( g ) Profit share | 32.9 | 15.2 | 19.2 | 18.6 | 20.8 |
| ( h ) Profit rate | 33.5 | 10.4 | 14.2 | 13.5 | 15.3 |

**Table 8 Europe Manufacturing(weighted)Profit Shares and Rates**

| % change per annum | 1973–75 | 1975–79 | 1979–81 | 1981–85 |
|---|---|---|---|---|
| ( 1 ) Hourly productivity | 2.5 | 4.3 | 2.5 | 4.5 |
| ( 2 ) Effect of input costs | −2.4 | 0.3 | −1.2 | −0.6 |
| ( 3 ) Real factor incomes= (1)+(2) | 0.1 | 4.5 | 1.3 | 3.9 |
| ( 4 ) Product wages | 4.7 | 3.6 | 3.7 | 2.6 |
| ( 5 ) Wage share=(4)−(3) | 4.6 | −0.9 | 2.4 | −1.3 |
| ( 6 ) Profit share | −24.9 | 7.1 | −17.8 | 11.3 |
| ( 7 ) Real output/cap ratio | −5.6 | 1.1 | −5.8 | 0.1 |
| ( 8 ) Effect of capital costs | 0.6 | 1.5 | 3.0 | 0.6 |
| ( 9 ) Current price $O/K=$ (7)+(8) | −5.0 | 2.6 | −2.8 | 0.7 |
| (10) Profit rate=(6)+(9) | −28.5 | 9.8 | −20.3 | 11.7 |
| Memorandum items | | | | |
| ( a ) Weekly hours worked | −2.7 | 0.1 | −1.3 | −0.3 |
| ( b ) Relative consumer price | −1.5 | 0.7 | 1.5 | 0.1 |
| ( c ) Real weekly wages= (5)+(a)−(b) | 4.0 | 3.3 | 1.3 | 2.4 |
| ( d ) Real direct costs | 3.3 | 2.3 | 2.8 | 1.3 |
| ( e ) Relative cap prices | 0.5 | 0.3 | −2.2 | −0.3 |
| ( f ) Output prices | 15.4 | 9.2 | 10.9 | 6.9 |
| End of period levels | | | | |
| ( g ) Profit share | 17.9 | 10.1 | 13.3 | 9.0 | 13.8 |
| ( h ) Profit rate | 12.9 | 6.6 | 9.6 | 6.1 | 9.5 |

**Table 9 USA Manufacturing Profit Shares and Rates**

| % change per annum | 1973–75 | 1975–79 | 1979–81 | 1981–85 |
|---|---|---|---|---|
| ( 1 ) Hourly productivity | 0.0 | 2.0 | 1.8 | 4.1 |
| ( 2 ) Effect of input costs | −2.6 | −1.4 | −4.4 | 0.1 |
| ( 3 ) Real factor incomes= (1)+(2) | −2.6 | 0.6 | −2.6 | 4.2 |
| ( 4 ) Product wages | −1.9 | 0.9 | −0.7 | 4.2 |
| ( 5 ) Wage share=(4)−(3) | 0.7 | 0.3 | 1.9 | 0.0 |
| ( 6 ) Profit share | −3.5 | −1.7 | −16 | 0.0 |
| ( 7 ) Real output/cap ratio | −9.1 | 2.1 | −5.1 | 1.4 |
| ( 8 ) Effect of capital costs | −1.8 | −1.4 | −1.4 | −1.3 |
| ( 9 ) Current price $O/K=$ (7)+(8) | −10.9 | 0.7 | −6.5 | 0.1 |
| (10) Profit rate=(6)+(9) | −13.8 | −1.1 | −17 | 0.0 |
| Memorandum items | | | | |
| ( a ) Weekly hours worked | −1.3 | 0.4 | −0.6 | 1.0 |
| ( b ) Relative consumer price | −2.9 | 0.3 | 0.6 | 1.2 |
| ( c ) Real weekly wages= (5)+(a)−(b) | −0.3 | 1.0 | −1.9 | 4.0 |
| ( d ) Real direct costs | 0.1 | 1.7 | 2.5 | 1.8 |
| ( e ) Relative cap prices | −0.7 | 0.1 | −2.7 | 1.6 |
| ( f ) Output prices | 13.0 | 7.4 | 11.3 | 0.7 |
| End of period levels | | | | |
| ( g ) Profit share | 16.2 | 15.1 | 11.8 | 11.8 |
| ( h ) Profit rate | 16.2 | 15.5 | 10.7 | 10.7 |

**Table 10 ACC's Manufacturing(weighted)Profit Shares and Rates**

| % change per annum | 1973–75 | 1975–79 | 1979–81 | 1981–85 |
|---|---|---|---|---|
| ( 1 ) Hourly productivity | 1.6 | 3.7 | 2.9 | 4.7 |
| ( 2 ) Effect of input costs | −3.4 | −1.0 | −4.0 | −0.5 |
| ( 3 ) Real factor incomes= (1)+(2) | −1.7 | 2.7 | −1.0 | 4.2 |
| ( 4 ) Product wages | 2.0 | 2.3 | 0.9 | 3.6 |
| ( 5 ) Wage share=(4)−(3) | 3.7 | −0.4 | 1.9 | −0.6 |
| ( 6 ) Profit share | −16.4 | 2.1 | −11.6 | 4.2 |
| ( 7 ) Real output/cap ratio | −8.1 | 2.1 | −4.4 | 1.0 |
| ( 8 ) Effect of capital costs | −0.1 | −1.5 | −0.3 | −1.3 |
| ( 9 ) Current price $O/K=$ (7)+(8) | −8.2 | 0.6 | −4.7 | −0.3 |
| (10) Profit rate=(6)+(9) | −23.6 | 2.6 | −15.2 | 3.7 |
| Memorandum items | | | | |
| ( a ) Weekly hours worked | −2.1 | 0.4 | −0.8 | 0.4 |
| ( b ) Relative consumer price | −1.6 | 0.9 | 0.6 | 0.8 |
| ( c ) Real weekly wages= (5)+(a)−(b) | 1.7 | 2.1 | −0.4 | 3.3 |
| ( d ) Real direct costs | 2.7 | 2.4 | 3.3 | 2.0 |
| ( e ) Relative cap prices | −0.1 | 0.1 | −2.7 | 0.6 |
| ( f ) Output prices | 14.2 | 7.4 | 10.7 | 2.8 |
| End of period levels | | | | |
| ( g ) Profit share | 19.9 | 13.9 | 15.1 | 11.8 | 13.9 |
| ( h ) Profit rate | 20.4 | 11.9 | 13.2 | 9.5 | 11.0 |

The rising weight of capital consumption (not shown as a separate item in the tables) also contributes to the declining net value added to capital stock ratio. Lastly we should also note that the measured deterioration in the trend of the real output capital ratio will exaggerate the underlying movement if the period saw accelerated scrapping of plant due to the acceleration in the growth of real direct costs of production. For such accelerated scrapping

**Notes to Tables 3-10**

( 1 )  Real value added per worker hour.
( 2 )  Effect of relative price of inputs(estimated as excess of rise in wholesale prices of manufactures over value added prices)and of capital consumption(rise in share of VA) in reducing growth rate of real profits and wages (in terms of manufacturing output).
( 3 )  Money wages per hour deflated by price of manufacturing(estimated as line(3)+line(5)).
( 5 )  Income from employment, corrected for self-employment, as % of net value added.
(6),(g)  Net operating surplus(adjusted for self-employment) as % of net value added.
( 7 )  Real value added divided by real gross fixed cadital stock.
( 8 )  Effect of relative prices of capital stock, output, etc. on net output capital ratio——see text(estimated as line(9) minus line(7)).
(9),(i)  Net value added divided by net capital stock(current prices).
(10),(b)  Net operating surplus divided by net capital stock.
( b )  Relative price of consumer goods and manufacturing output.
( d )  Weighted average (60%, 40%)of product wages and real input costs. The latter is estimated from output and value prices by assuming output is 2/3 VA and 1/3 inputs.
( e )  Relative prices of capital stock and manufacturing output.
( f )  Manufacturing output prices——wholesale prices.

Sources : Armstrong and Glyn(1986)updated from EEC and OECD plus Bureau of Labour Statistics for hours of work and OECD and national sources for output prices (WPI).

is not captured in the capital stock figures which are based on conventional assumptions about asset lives.

Thus the falling output capital ratio was a subsidiary component of the fall in the profit rate in the early seventies (table 6 lines (6) and (9) shows it having about two thirds of the impact of the profit squeeze). Such a decreasing "productivity of investment" owed more to firms' inability to pass on input, depreciation and wage costs into final prices than to the slackening of the trend in real output per unit of capital. Similarly while slackening of labour productivity growth contributes to the pressure on the profit share, what has to be explained is the inability of employers to pass this adverse trend, together with the very important rise in input costs, into a rate of price increase which would ensure that profitability was maintained.

The decline in the profit rate prior to 1973 reflected a combination of pressures——indications of a slackening of labour productivity growth and the "real" output capital ratio and rising wage and input costs——which collided

with effective constraints on firms simply offloading these pressures in sufficiently accelerating inflation.

## II. Profitability Trends Since 1973

The main interest in decomposing the profitability trends since 1973 is to compare the two periods of "shock" (OPEC I in 1973–75 and OPEC II in 1979–81) and the two periods of "recovery" (1975–79 and 1981–85). Tables 7–10 present the post–1973 data in the same form as before. Rather than working through them sequentially we shall simply comment on the main highlights.

Figures 4–6 compare the two post-OPEC periods in each block. Japan stands out as havings coped with OPEC II with virtually no profit squeeze (or change in the wage share) despite terrific pressure from input costs which meant real factor incomes were falling). Wages bore the brunt in 1979–81, whilst they continued to rise very rapidly (in product terms especially) in 1973–75 (Fig 4). The behaviour of the real output capital ratio was also much more favourable in 1979–81 (line 7 of table 7) and the latter effect was enhanced (line 8) by falling relative prices of capital goods (line e).

In Europe the squeeze was rather less powerful during OPEC II (Fig 5). This reflected both slower product (and real wage (line c) of table 8) growth and rather less pressure from input costs (line 2). Capital costs were also increasing less sharply. It is likely that the much higher level of unemployment was responsible for the less aggressive wage bargaining, and that this outweighed the product market pressures on profits which derived from the much more deflationary stance of demand management than after OPEC I.

The USA weathered OPEC II rather worse than OPEC I (Fig 6). Despite the fact that productivity growth was maintained, the pressure of input costs was greater and the fall of product wages less (although real wages fell considerably faster (line c of table 9) reflecting

Fig. 4　Japan Profits & Opec Shocks
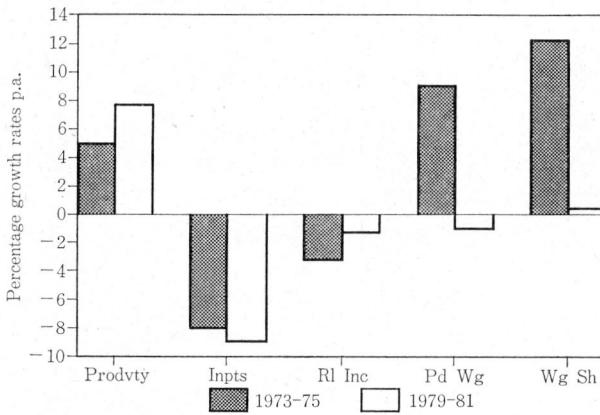1973–75 and 1979–81 compared



Fig. 5　Europe Profits & Opec Shocks
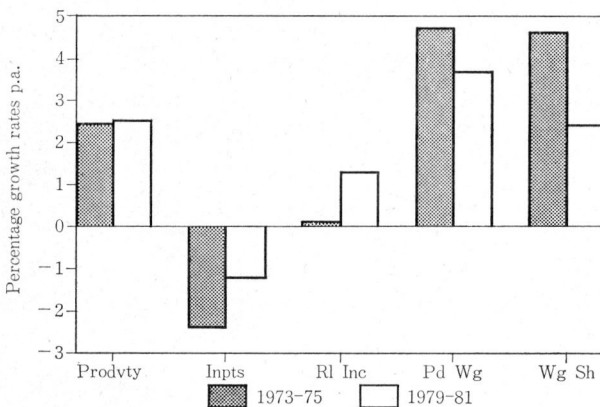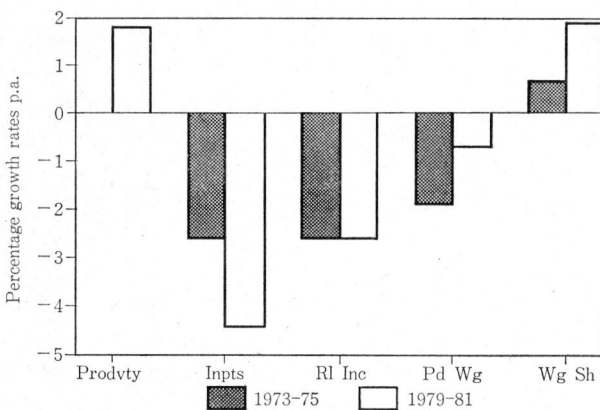1973–75 and 1979–81 compared



Fig. 6　USA Profits & Opec Shocks
1973–75 and 1979–81 compared



a much lesss favourable pattern of relative prices).

Just as the fall in profitability was generally less during OPEC II, so the recovery in profits was rather greater after 1981 than after 1975. In Europe productivity growth was rather similar during the two recoveries, and despite a less favourable pattern of input costs the slower rise in product wages displayed during OPEC II carried on into the recovery period. In the USA productivity growth was much faster during 1981–85, but most of this was swallowed up by a faster growth of product wages than during 1975–79 and the profit rate simply stabilised. Only in Japan was the recovery in profitability a little weaker after 1981.

The final point to note is that the post–1973 "recoveries" had not, by 1985, taken the manufacturing profit rate back to the 1973 level. Indeed in both Japan and the USA it remained around one half the 1973 level; surprisingly it was Europe where the fall between 1973 and 1985 was least, about one quarter.

## Conclusion

As we have repeatedly emphasised decomposing shifts in the profit rate is a way of pointing up the contributory factors whose trends then have to be explained (productivity slowdown, wage pressures, constraints on firms passing on cost increases, relative prices of inputs and outputs). Despite being no more than an overture to a comprehensive analysis, such exercises do point forward in a helpful way to the themes which have to be elaborated.

(Corpus Christi College,

University of Oxford)

### References

[1] Armstrong. P., Glyn, A., and Harrison, J., *Capitalism Since World War II*, Fontana, London, 1984.

[2] Armstrong, P., and Glyn, A., "Accumulation, Profits, State Spending," mimeo., Oxford, 1986.

[3] Bowles, S., Gordon D., and Weisskopf, T., "Power and Profits," *Review of Radical Political Economics*, Nos. 1 & 2, 1986.

[4] Carlin, W., *The Development of the Factor Distribution of Income and Profitability in West Germany, 1945–73*, Oxford D. Phil, 1987.

[5] Erixon, L., *Profitability in Swedish Manufacturing*, Swedish Institute for Social Research, Stockholm, 1987.

[6] Feldstein, M., and Summers, L., "Is the Rate of Profit Falling?" *Brookings Papers on Economic Activity*, 1, 1977.

[7] Feinstein, C., "The Distribution of Income in the UK," in J. Marchal and B. Ducros, eds., *The Distribution of the National Income*, Macmillan, London, 1968.

[8] Flemming, J. S., et al., "Trends in Company Profitability," *Bank of England Quarterly Bulletin*, March, 1976.

[9] Glyn, A., Hughes, A., Lipietz, A., and Singh, A., "The Rise and Fall of the Golden Age," mimeo., Cambridge 1988, forthcoming in S. Marglin, ed.

[10] Glyn, A., and Sutcliffe, R., *British Capitalism, Workers and the Profits Squeeze*, Penguin, Harmondsworth, 1972.

[11] Itoh, M., *Value and Crisis*, Pluto, London, 1980.

[12] Moseley, F., "The Rate of Surplus Value in the Post-war US Economy," *Cambridge Journal of Economics*, March, 1985.

[13] Petrovic, P., "The Deviation of Production Prices from Labour Values," *Cambridge Journal of Economics*, September 1987.

[14] Sargent, J. R., "Capital Accumulation and Productivity Growth," in R. Matthews, ed., *Slower Growth in the Western World*, Heinemann, London, 1982.

[15] Soskice, D., "Strike Waves and Wage Explosions 1968–70: an Economic Interpretation," in C. Crouch and A. Pizzorno, eds., *The Resurgence of Class Conflict in Western Europe*, Macmillan, London, 1978.

[16] Sutch, H. & Chan-Lee, J. H., "Profits and Return in OECD Countries," OECD Working Paper No 20, 1985.

[17] Weisskopf, T. E., "Marxian Crisis Theory and the Rate or Profit in the Post-war US Economy," *Cambridge Journal of Economics*, September 1979.

[18] Weisskopf, T. E., "Sources of Profit Rate Decline in the Advanced Countries," mimeo., Ann Arbor, 1985.