

KEYNES LECTURE IN ECONOMICS

The High-wage Theory of Unemployment: Theory and British Experience 1920–89

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THIS article contests the view that (some or much) unemployment is due to real wages being too high. It will be argued that the question is not merely an empirical question which can be settled only by the evidence, and that there are prior questions of theory: these will be discussed first in part 1. Part 2 will then discuss the empirical evidence for the United Kingdom in the period 1920–89.

Figure 1 shows the course of unemployment, along with two measures (described later) of real wages. It is to be noted for later reference that the changes in unemployment (what we want to explain) have mostly taken place in short sharp bursts, lasting typically two years (Table 1).

Some definitions and clarifications

The proposition here disputed, which will be referred to as the High-wage theory, asserts that if wages are high *relative to the price of the product* (high product wages), that can cause unemployment.

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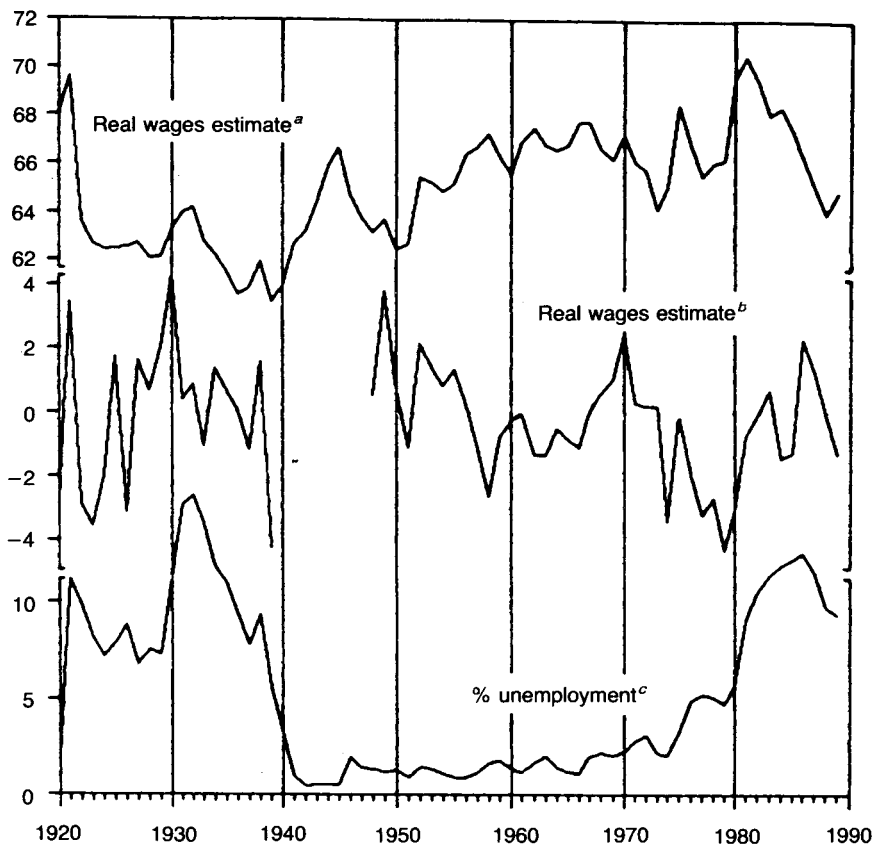


Fig. 1. Real wages and % unemployment 1920–89.

^a Income from employment as % of total domestic income (includes total stock appreciation) excluding North Sea income.

^b deviation of employment real income per employee from trend. Average employment income is deflated by the GDP deflator to include stock appreciation in GDP and exclude North Sea income. Trend is estimated from trend lines fitted to separate sub-periods 1921–39, 1950–73 and 1982–89 (with years 1974–81 being an interpolation between points shown for the terminal years).

^c unemployment including (after 1982) numbers on government training programmes. This adjustment increases the % figure by 1.6 points in 1989.

This proposition has to be distinguished from two other propositions which may appear similar which are not here disputed. One is a proposition about relative wages. If the wages of one type of labour (or labour in one location) are high *relative to the wages of other types (locations) of labour*, that will reduce employment of that type of labour. The other proposition is not about the actual level of real wages but the *desire* for

Table 1. Major changes in unemployment 1920–90.

Period	Length in years	Change in % unemployment ^a
1920–21	2	about +9
1921–23	2	-3.2
1929–31	2	+7.8
1933–37	4	-7.8
1938–41	3	-8.1
1974–76	2	+2.1
1980–82	2	+5.7
1987–89	2	-3.5

^a Change between averages for calendar years.

Sources: Feinstein (1972) and *Economic Trends*.

high real wages: that the pursuit by e.g. trade unions of high real wages can cause inflation, and that, given some assumptions about government policy, can cause unemployment. For the sake of clarity these three different propositions may be elaborated as follows.

If one treats all non-employment incomes as 'profits' (a reasonable simplification: see part 2) and broadens wages to include all labour costs, then high wages are the inverse of low unit profits. Both phrases describe the same situation. The High-wage theory says that high wages, or low profits, make marginal employment not worth undertaking, i.e. simply unprofitable. I will dispute this proposition on the ground of the plausibility of the kind of behaviour implied.

The High-wage theory refers to wages in general; it therefore differs from the case of high (relative) wages for labour of a particular type. Too high a price for labour of one grade or in one region results in too high a price for the product it makes (a price rise is not what the High-wage theory assumes). Suppose the product is sold outside the region so that total demand is unchanged. The effect of high relative wages is that demand is switched to competing products. Labour of that grade (that region) will have priced itself out of jobs; unemployment rises for that grade (that region) *but falls elsewhere*: and in total is unchanged.

A region is related to a country as a country is to the world. Thus the regional case is analogous to that of a country which has become internationally uncompetitive. Too high a wage (or too high an exchange rate) in one country causes markets to be lost to competitors. Unemployment rises in that country to the benefit of countries whose products now sell better; and in total unemployment as before is unchanged. This case I do not dispute.

The High-wage theory is also different from the case of unemployment

that may result from pressure for high wages. Pressure for higher real wages may (let us say) cause inflation; the government counters by restrictive policy; that causes unemployment. It differs, first, because it is not here a matter of actual high real wages but of the desire for them. If pursuit of higher real wages pushes up prices high real wages are not achieved. Another difference is that unemployment here comes as a result of the reaction of, and *via the intervention of, the government*, whereas the High-wage theory says that high real wages cause unemployment endogenously and by virtue of the way the economic system operates.

The High-wage theory—what I am contesting—is supposed to operate in the real world in an open economy and with governments. But, to make things clear, one can say that it is supposed to be about what *could* happen in a closed economy, with no mismatches between supply and demand for labour of different types or location, and no government—but presumably with trade unions.

The concept of total demand when here employed will be defined in real terms. A rise in nominal wages greater than the rise in labour productivity in any period is likely to result in a rise in prices, so that in nominal terms, labour and profit incomes and product prices will all be increased. When deflated by the index of prices, income in total may be unchanged, and thus also demand in real terms.

1. Theoretical questions raised by the High-Wage Theory

It is widely taken as self-evident that, since it is labour that gets unemployed, unemployment must reflect a malfunctioning of *the labour market*—a malfunctioning usually attributed to the stickiness of wages. If wages declined when there was unemployment, full employment (it is implied) would then be restored. Since they fail to do so wages are ‘excessive’.

Such reasoning may appear to have intuitive appeal, but rests I think on a confusion. For capital as well as labour gets unemployed. Should we say then that unemployment of capital is due to capitalists demanding excessive profits? Can wages and profits both be excessive at the same time? These lines of thought surely suggest that unemployment stems from a more general blockage of the economic system, not confined to a single market.¹

¹ It is hoped to elaborate this proposition on a later occasion.

The High-wage theory has been most fully set out by Malinvaud.² As he puts it, there are two conditions necessary for the existence of full employment:

- 1 Demand for goods and services must be sufficiently high to buy the output of the fully-employed labour force.
- 2 Profits must be sufficient to provide an incentive to firms to produce this volume of goods.³

It is on these two conditions that Malinvaud bases his twofold classification of unemployment. If the first condition (adequate demand) fails, the unemployment will be 'Keynesian'. If the second fails, there will be (what since Malinvaud has been called) 'classical' unemployment. That is, classical unemployment happens when, because wages are too high, firms do not produce—even though demand is adequate. That condition 'though demand is adequate' will be important when we come to consider how prices are determined.

That definition of classical unemployment might appear to mean that it could not coexist with Keynesian unemployment. For adequate demand (which classical unemployment might seem to imply) cannot exist at the same time as inadequate demand (which Keynesian unemployment requires). Malinvaud, nevertheless, believes they can coexist;⁴ if I believed in classical unemployment at all, I believe he would be right.

The joint existence of both types of unemployment could arise in the following way. Suppose an initial condition in which demand is inadequate, so that some Keynesian unemployment exists. Then suppose that real wages become so high that employment is reduced even below the level which demand would have permitted. There will then be an extra quantity of unemployment, and that extra would be classical unemployment.

One can perhaps understand Malinvaud's idea to be that profits are like a rent which gets squeezed as real wages rise, so that, in one line after another, production becomes unprofitable and is abandoned. He himself has always been too fastidious to provide estimates of how excessive wages

² Malinvaud (1977, 1978, 1980, 1982, 1984, 1986, 1988).

³ Classical unemployment is usually held to occur when wages are so high as either to make it unprofitable to produce full employment output, or to so discourage investment that capacity is reduced below the full employment level, so that firms are unable to meet demand. It is chiefly for this latter longer-term situation that Malinvaud reserves the term 'classical' unemployment. Other High-wage theorists seem to think more in terms of the effect on the immediate unprofitability of employment.

⁴ He indeed believes that while part of the unemployment since 1973 has been classical, most has been Keynesian.

are (i.e. of what is sometimes called the 'wage gap').⁵ The many who have since provided estimates of the effects of high wages seem to follow Malinvaud's general thinking, but to have a different model in mind couched in terms of a production function (detailed discussion of which will be deferred until part 2) in which changes in factor prices provoke changes in the proportion in which factors are employed. Though different, it equally requires that real wages can in fact become 'excessive'.

The determination of real wages

The main theoretical objection to the High-wage theory is that it is difficult to envisage a credible process by which real wages can become excessive. This difficulty is not faced, nor therefore is an answer provided, by protagonists of the theory.

Real wages are nominal wages divided by product prices, and therefore depend both on nominal wages, which firms and their workers bargain about; and on product prices, which firms alone decide. High-wage theorists say something about how nominal wages are determined, but little about how prices are set, so that the theory is critically incomplete. What needs to be explained is how firms could be driven to sell at prices which are relatively so low that they are forced to contract their operations — at a time moreover when by definition demand is adequate. The process is considered below first at the macro and then at the micro level.

The fullest accounts of how excessive real wages are held to come about are given by Malinvaud, and by Bruno and Sachs. In general Malinvaud seems to treat real wages as exogenous.⁶ Bruno and Sachs' framework of thought is that while the capital market clears the labour market does not: real wages adjust only slowly, for instance to a 'supply shock' that reduces the marginal productivity of labour.⁷ The emergence of a wage gap is put forward as an explanation of what happened in a particular phase of history, not as a universal event.⁸

⁵ Pretending to give a regular evaluation of the wage gap would be premature now, and still, I am afraid, for some years to come' (Malinvaud, 1988, p. 10).

⁶ Malinvaud at one point (1982) treats them as directly manipulatable by incomes policy.

⁷ The marginal productivity of labour is held to have been reduced by the rise in commodity and oil prices in 1973 and 1979, and by the slowdown in productivity growth after 1973. There is however also an idea that high demand may overrule such effects. Firms may produce at a loss to keep customers happy (Bruno & Sachs, 1985, p. 210).

⁸ Thus Sachs (1983) notes that the generally accepted observation (going back to the exchange between Keynes, Dunlop and Tarshis) had been that real wages vary not countercyclically as here supposed, but acyclically or procyclically. He explains the contradiction by noting that most studies have referred to either longer periods or to the United States, whereas his findings related more to recent events in Europe.

Both Malinvaud and Bruno and Sachs imply that real wages are determined by what happens in nominal wage bargaining; and that the outcome is either the result of the attitudes or bargaining strength of trade unions on their own, or the outcome of the conflict between unions and employers as opposing partners in such negotiations. In fact it is only nominal wages that are so determined.

The question of price determination is neglected almost completely. At one point Malinvaud notes that 'changes in prices and changes in wages are intimately related', and that in a cost-plus theory of pricing they tend to offset each others' effect on real wages (Malinvaud, 1980, p. 187). Though he treats it as a minor gloss, that is surely a fatal admission.

Consider two opposite theoretical cases: perfectly competitive markets; and then, imperfect competition with prices set as a margin above costs.

Under perfect competition (the first case), product markets clear. Firms are price-takers and have no power to set prices. Factor prices equal marginal factor productivities; factor markets also clear; neither firms nor workers have power to determine wages; and since product prices and factor prices are determined simultaneously, they cannot get out of step. Such a world might well deserve to be called 'classical'. But in that world real product wages would always be in equilibrium, and 'classical' unemployment could not exist—which seems to make 'classical' as a description of high-wage unemployment curiously inappropriate.

In a world of imperfect competition (the second case), firms set product prices and usually set them as a mark-up on unit costs. Assuming first as a simple case that the mark-up is a fixed percentage and that we are dealing with a closed economy; then if unit labour costs rise, product prices will be advanced proportionately, and real product wages will be unchanged. If labour unions force up nominal wages, it results in inflation not higher real wages. Thus, in this case, too, 'classical' unemployment could not arise.

In an open economy, if unions force up nominal wages, import costs might remain unchanged. The result would again be inflation but with real wages *and also real unit profits* higher than before: hence, again, not a situation for classical unemployment.

High-wage theorists sometimes seem to be assuming that the price level is fixed independently of what firms do, so that if nominal labour costs rise, firms are up against a ceiling and cannot raise prices. Consider some possibilities.

First the assumption might be that the price level is determined by the stock of money which is determined by the authorities. Against that there are good reasons to believe that growth of the money stock is a market

process, which the authorities do not have a hand over.⁹ If that were not the case it would imply, since prices have been rising continuously in most industrial countries for half a century, that monetary authorities had been comprehensively incompetent or neglectful. Even were such a view credible, such universality would cry out to be accepted as a datum. Governments have certainly sought (in the political rhetoric of our time) to 'resist inflation' by raising the cost of credit. But that has plainly not placed a ceiling on the rise in prices which prevented firms from charging more for their products.

A second possible assumption is that international competition imposes a ceiling on prices. If the exchange rate were fixed that could admittedly lead to unemployment, which might make firms refrain from passing on cost increases for fear of further loss of markets. Something like that indeed happens. But it is a matter of *relative* prices (prices in one country relative to those elsewhere) and not what is here being disputed.

The reaction of the individual firm

The preceding discussion has been at a macroeconomic level. It is necessary to consider also the situation of individual firms; when considered at that level there may appear more of a case for believing that unusual wage increases might cut profit margins (which, collectively, would produce high real wages). This when closely analysed turns out however to be less than compelling. What is needed is not micro analysis of a single firm, but mixed micro/macro analysis of the interaction of a group of firms. From such an analysis of group behaviour it does not appear possible to derive absolutely clear-cut conclusions.

Under conditions of imperfect competition each firm is likely to feel under some constraints—even when total demand is adequate—as to how far it can pass cost increases into higher selling prices. The reaction of a group of such imperfectly-competing firms to an increase in costs depends on how each expects others to react. Each must feel an element of doubt about how fully others will pass on higher costs; and if each senses others are doubtful on this score, each (it might be thought) might shave profit margins.

The background to the situation to be examined needs to be kept in mind. At the times when real wages are alleged to have been 'excessive' (e.g. 1973–5 or 1979–81), total demand was below the high-employment

⁹ See Hicks (1989) and also Dow & Saville (1989).

level, and it is usually agreed that that caused some or even much of the unemployment. The question is whether extra unemployment, going beyond that, was due to wages being so high that production appeared unprofitable, even though demand was sufficient for all firms to have sold the output they allegedly refrained from producing because real wages were too high.

Firms are concerned not with the macro situation, but with something more simple: whether by raising prices they will lose sales to competitors. They will not have this fear if they know that competitors will raise prices also. We are here concerned not with cost increases affecting only one firm, but with general, industry-wide cost increases, e.g. a rise in the import costs or wage costs of an industry. In the case of such a general cost rise there is a presumption, based on experience of this having happened in the past, that all firms will react by raising selling prices. A competitor could gain an advantage by delaying or diluting his reaction; but that would risk starting a price war—a fear that (as in the standard static analysis) would deter him from such a course. Even so, some doubt as to competitors' reaction must remain.

On the other hand the costs to a firm of being very seriously deterred by this doubt are high. The High-wage theory supposes not that firms suffer some loss of profits or even loss of all profits for some temporary period which they can ignore, but such severe loss that they shut down part or all of their operations. Each firm is likely to sense that demand conditions for the industry as a whole do not forbid an increase in prices. This being so it seems likely that each will expect others to test the effect of raising its prices rather than accept grossly subnormal profits; and, expecting others to do likewise, will instead raise prices.

It would clearly be possible to work out with greater detail and rigour group reactions on various assumptions: but they would remain assumptions. In this area it appears impossible to derive absolutely firm conclusions from first principles. Nevertheless it seems generally implausible to suppose that firms, in conditions when by hypothesis demand is adequate, should so price their products as to make it unprofitable to satisfy that demand; and thus implausible to suppose that real wages, though they certainly vary, can become 'excessive' in the sense here meant.

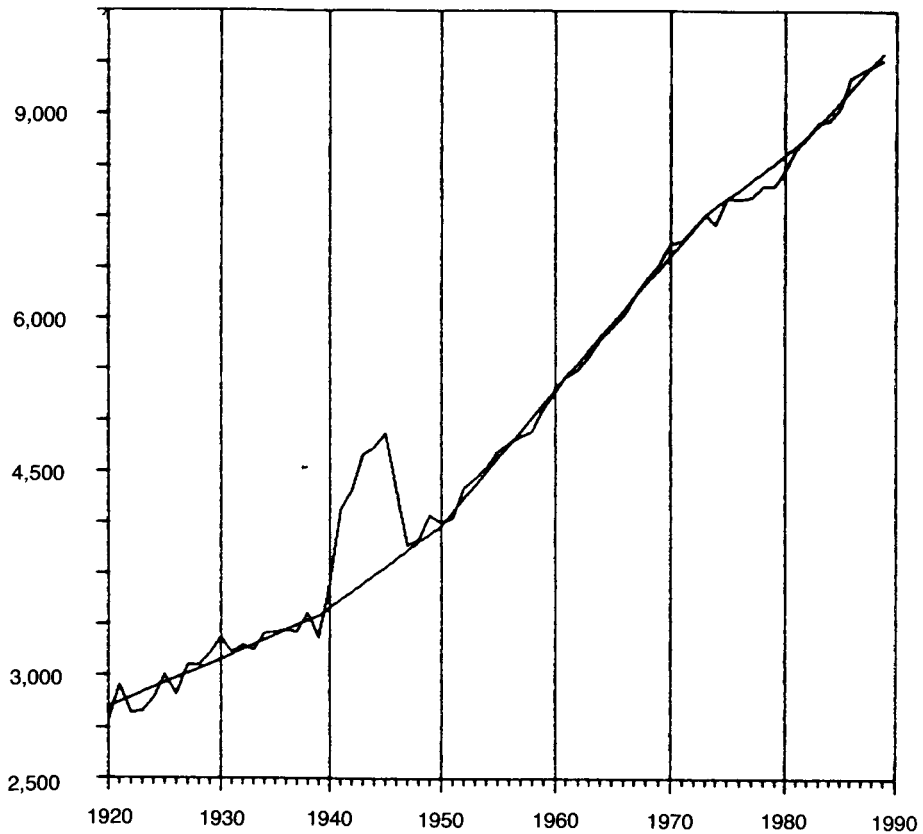


Fig. 2. Real employment income per employee 1920–89.^a

^a Average employment income per employee deflated by adjusted GDP deflator with stock appreciation included but North Sea income excluded from GDP). Trends are fitted for separate sub-periods 1921–39, 1950–73 and 1982–89 (1940–49 and 1974–81 are interpolations).

2. The empirical evidence for the High-wage theory

Most of the evidence that appears to support the High-wage theory is contained in econometric studies that embrace the post-1973 period. The findings of these studies will be disputed below both on methodological grounds; and on the ground that they give, at best, an inadequate account of what caused real wages to be as they were, and that this bears on the interpretation of the evidence.

Presentation of the data

Figure 1 shows along with percentage unemployment two estimates of real product wages in the period since 1920 in the economy as a whole.¹⁰ These two estimates must now be explained.

Real wages increase over time as productivity grows (Fig. 2), and what one wants to know is whether real wages are increasing more or less rapidly than usual. There is however no unequivocal way to measure the trend. The estimate in Fig. 1, middle line, shows deviations from trends separately estimated for three sub-periods (see notes to figure). The line shown for the fourth sub-period, 1973–82, is merely an interpolation: conditions then were very disturbed and the trend is impossible to estimate. Estimates in this period of detrended real wages are therefore highly suspect. The period happens to be a crucial period for the analysis.

A different approach is to take the share of wages in total factor income as a measure of real product wages (Fig. 1, top line). A theoretical objection to this measure is that it will reflect changes not only in the relative rewards per unit of labour and capital, but also changes in the relative quantities of them in employment—including those that may be induced by the former. This objection, however, is not important when, as here, it is short-term changes only that have to be explained. It has already been noted that the changes in unemployment occurred mostly in sharp bursts over periods of two or three years. But it takes periods perhaps 10 times as long to bring the capital stock into equilibrium adjustment with a different quantity of labour; and the scale of such adjustment that can take place over two or three years must be too small to be significant.¹¹

For these reasons the second estimate, though not perfect, appears much to be preferred. At times it diverges considerably from the first

¹⁰ That is to be preferred to taking only manufacturing, as several studies have done. Conceptually, unemployment 'in one industry' has little meaning. And from the statistical point of view, the national accounts provide consistent estimates of output and profit shares and hence of the wage component of prices, which piecemeal estimates can easily misestimate.

¹¹ It can be argued that though this is true of a single firm, in a recession the most labour-intensive firms will fail first if wages are high, so that the proportion of labour to capital employed in the economy as a whole may change. But it is, rather, the least efficient firms (or ones lacking short-term financial assets) that will fail first: these are not necessarily the most labour-intensive.

(Fig. 1), more especially during the years 1973–82 when, as already noted, the detrended real wage estimate is of dubious if any significance.¹²

‘Wages’ here are represented by income from employment as defined by the CSO and thus include salaries. Short-term changes in the share of *non-employment* income reflect mostly variations in the share of profits (see Fig. 4); and in what follows changes in the share of profits will often be taken to be measured by changes in the share of that larger total. In this sense the share of ‘profits’ is the inverse of the share of ‘wages’.

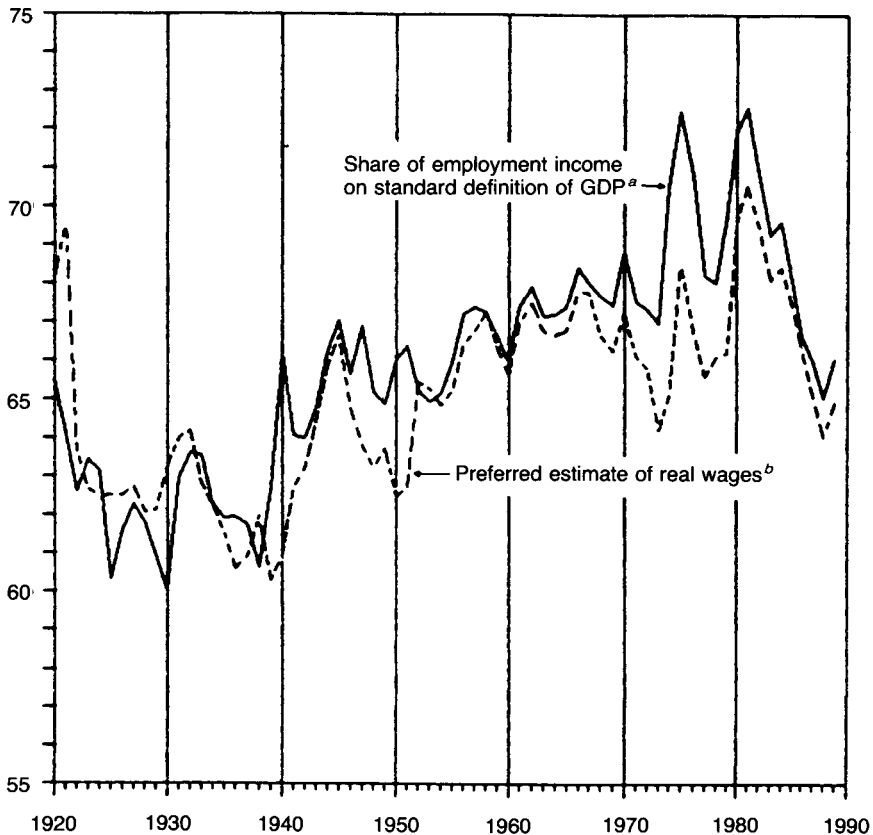


Fig. 3. The treatment of stock appreciation: effect on estimates of real product wages.

^a Employment income as % of GDP net of stock appreciation

^b Employment income as % of total domestic income (GDP including stock appreciation).

Both series exclude North Sea income.

¹² Other divergences reflect the fact that there is erratic short-run variation in the pace of growth and, associated with that, in the share of profits; this is reflected in the second estimate but gets removed by the detrending procedure from the first estimate.

It is the convention in national accounting to measure profits (and factor income in total) as net of stock appreciation. But firms themselves must chiefly think in terms of their accountants' definition of trading profits, i.e. profits including stock appreciation.¹³ That therefore is how they are defined here, unlike most other studies, which follow the standard national accounts convention. Which convention is adopted makes a considerable difference at times when world prices are changing a lot. After OPEC I and again after OPEC II, the usual treatment raises real wages by several percentage points (Fig. 3). That matters because these

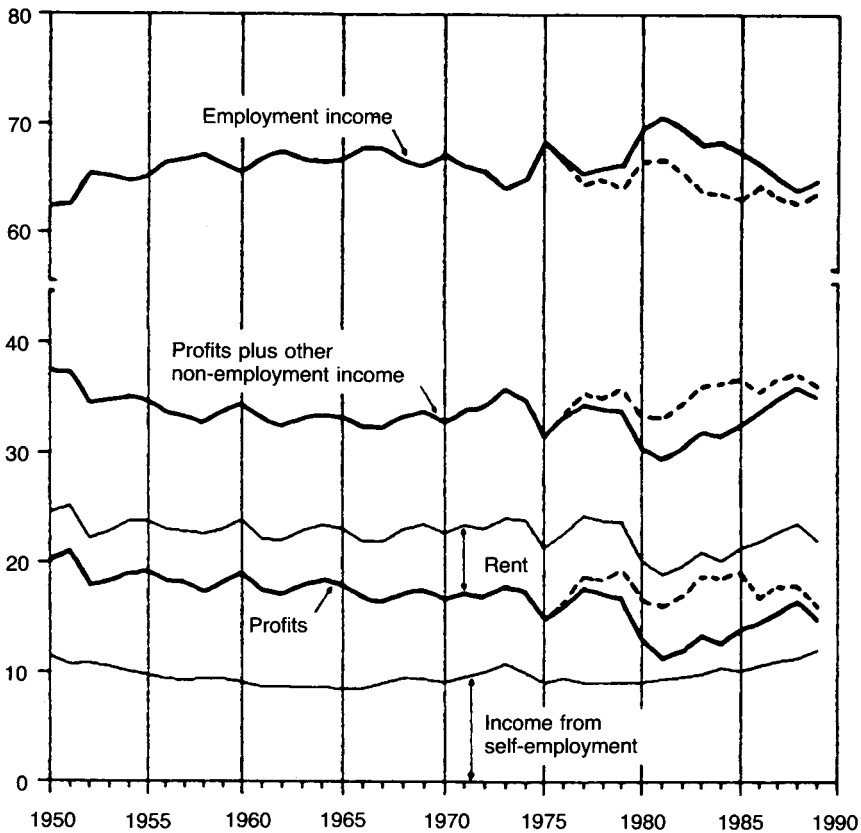


Fig. 4. The shares of wages and profits 1950–89. % Factor shares in total domestic income with North Sea income excluded. (Broken line shows shares with latter included).

¹³ In recent years pricing procedures may be based on current (rather than historical) costs to a greater extent than earlier. But what is said above is probably historically correct.

high real wages are then treated as a cause of the unemployment that followed soon after.

Two further small adjustments need to be noted

1 In the years after 1973 an increasing share of profits was earned by companies engaged in the extraction of oil and gas from the North Sea. Since oil output involves little employment, and profits earned there are largely irrelevant to decisions about employment in the mainland economy, North Sea activities are here treated as outside the United Kingdom. Their exclusion *reduces* the share of profits and *raises* that of employment incomes (Fig. 4).

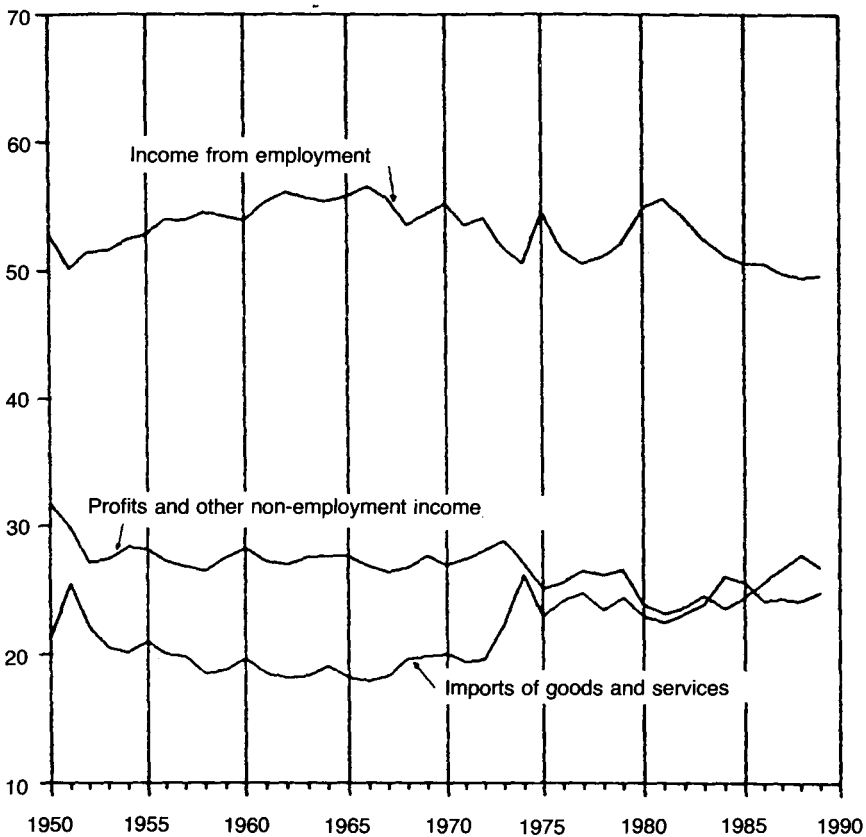


Fig. 5. Factor shares in value of final output import content.^a

^a Factor shares as % of final output = GDP (adjusted to include stock appreciation and exclude North Sea income) plus imports of goods and services.

2 It seems probable that the effect of government training schemes has been to reduce unemployment below what it would otherwise have been. Such schemes were greatly increased in the late 1980s, and by 1989 absorbed 1½% of the labour force. For continuity, people on these schemes are here treated as unemployed.

A variant concept to real product wages is shown in Fig. 5. Firms probably look at profits as a proportion of the value of their output including purchased input, not as a proportion of value-added. It can be argued that for the economy as a whole it is therefore better to measure profits as a share of final output (i.e. including inputs) not of GDP. The import share had a brief peak at the time of the Korean War in 1951 and stepped up to a new high level at OPEC I in 1974 (Fig. 5). The share of domestic costs was therefore reduced, and the share of 'profits' shows an even more pronounced dip after OPEC I than on the definitions of Fig. 4.

First inspection of the data

The events to be explained in the period since 1920 are chiefly four large and abrupt changes in the level of unemployment together with four other considerable changes a little less large or less abrupt (Table 1). If the High-wage theory provided the explanation, that would require that real wages, after being very low immediately after World War I, should quickly have become very high to cause the enormous leap in unemployment in 1921; and to leap again in 1929 to produce the unemployment of the Great Depression. They would then have had to become extremely low to produce the minimal unemployment of the war years, and stayed that way for 28 years afterwards. Finally, there would have had to be two upward leaps to explain the growth of unemployment after 1974 and after 1980; and after 1985 some falling back.

By and large Fig. 1 does not show these associations. When each of the three subperiods is looked at as a whole, neither the 'wage' share, nor detrended real 'wages', were unusually high during the inter-war period, nor unusually low either during the war or the post-war years up to 1973. It was only in the post-1973 period that the 'wage' share (but not detrended real 'wages') was above average.

This impression is confirmed by the correlation results shown in Table 2. For the whole period, the correlation coefficients are generally small and often of the wrong (negative) sign. That is the main conclusion to be drawn. Within each of the three main sub-periods there is however considerably more correlation (see Table 2, and also Table 3 which shows first differences).

- 1 In the inter-war sub-period, real wages on one showing were high at the time of the Great Depression. (For the sub-period as a whole a correlation of over 0.5 only appears if import costs are included: see Table 2 last column).
- 2 In the post-World-War-II sub-period, both real wages and unemployment rose throughout the period, but only very modestly: the correlation (shown by the 'wage' share only: Tables 1 and 2) is therefore not very important.
- 3 In the post-1973 sub-period, high wages are more clearly correlated with unemployment (see Table 3, results with unemployment lagged one year; and Fig. 6).

Table 2. Simple correlation of % unemployment and real wages, 1920–1989.

Explanatory variables lagged by	Sub-period/ /Whole period	Detrended real wage		Employment income as % of GDP		Employment income as % of adjusted final output ^b
		Standard definitions	Adjusted GDP ^a	Standard definitions	Adjusted GDP ^a	
0 Years	1920–1939	0.191	0.381	-0.046	0.027	0.576
	1950–1973	0.233	0.188	0.391	0.203	0.157
	1973–1989	-0.380	0.549	-0.340	0.226	-0.194
	1920–1989	-0.325	-0.259	-0.311	-0.149	0.430
1 Year	1921–1939	-0.011	0.355	0.158	0.298	0.291
	1950–1973	-0.203	-0.114	0.467	0.478	0.349
	1973–1989	-0.409	0.335	0.118	0.514	0.036
	1921–1989	-0.327	-0.269	-0.231	-0.014	-0.452
2 Years	1922–1939	0.120	0.458	-0.148	0.068	0.121
	1950–1973	0.214	0.155	0.710	0.466	0.453
	1973–1989	-0.442	0.054	0.275	0.659	0.026
	1922–1989	-0.304	-0.285	0.155	0.028	-0.438

^a Total domestic income including stock appreciation, but excluding income from North Sea oil and gas.

^b GDP adjusted at ^a plus imports of goods and services.

Sources: Feinstein (1972), CSO Economic Trends (1990) and CSO UK National Accounts (1990).

The evidence of econometric studies

The most systematic attempt to test the effect of real wages on unemployment is contained in a by now rather numerous series of econometric studies. On the face of it the results, while differing considerably, appear to provide rather positive evidence for such an effect. These studies all follow a broadly similar approach, which it is here argued is open to objections sufficient to invalidate the conclusions they claim.

Table 3. Simple correlation of the first differences of % unemployment and the first differences of real wages, 1920–1989.

Explanatory variables lagged by	Sub-period/ /Whole period	Detrended real wage		Employment income as % of GDP		Employment income as % of adjusted final output ^b
		Standard definitions	Adjusted GDP ^a	Standard definitions	Adjusted GDP ^a	
0 Years	1921–1939	–0.077	0.065	–0.228	0.382	0.471
	1950–1973	0.200	0.204	–0.317	0.299	0.170
	1973–1989	–0.025	0.218	0.087	0.427	0.368
	1921–1989	–0.024	0.046	–0.193	0.124	0.148
1 Year	1922–1939	0.119	–0.131	0.098	0.239	0.149
	1950–1973	0.306	0.064	0.456	0.474	–0.018
	1973–1989	0.073	–0.300	0.757	0.765	0.474
	1922–1989	0.061	0.002	0.180	0.304	0.285
2 Years	1923–1939	0.134	0.488	0.103	–0.044	0.031
	1950–1973	–0.050	–0.252	0.444	–0.091	0.193
	1973–1989	0.300	–0.272	0.631	0.229	0.087
	1923–1989	0.015	–0.043	0.191	0.129	0.119

^a Total domestic income including stock appreciation, but excluding income from North Sea oil and gas.

^b GDP adjusted as at ^a plus imports of goods and services.

Sources: Feinstein (1972); CSO Economic Trends (1990) and CSO UK National Accounts (1990).

Many of the studies are international: fourteen that include the United Kingdom are listed in Table 4. Of these one refers to the inter-war period, but most to periods that include the post-1973 years.¹⁴ Those listed omit the numerous studies which trace an effect of inflation on employment that arises through the reaction of the authorities to inflation:¹⁵ as explained at

¹⁴ Half the studies refer not to the economy as a whole but manufacturing only—a potentially serious limitation. A few attempt to estimate not only the effect of real wages but also how real wages themselves are determined; but nevertheless do not explain what principles of price-formation could produce excessive wages, the point criticized in part 1 above.

¹⁵ These studies treat nominal wages as a function of past prices, and prices as a function of past costs including wages. Pressure for higher wages then results not in a permanent shift towards high real wages, but in inflation. Faced with inflation governments have usually restricted demand, so increasing unemployment.

A series of studies by members of the Centre for Labour Economics at the London School of Economics has sought to estimate the 'equilibrium' level of unemployment conceived to be the level of unemployment at which claims on national output are compatible and inflation does not accelerate. These studies are summed up in Jackman, Layard & Nickell (1992); some

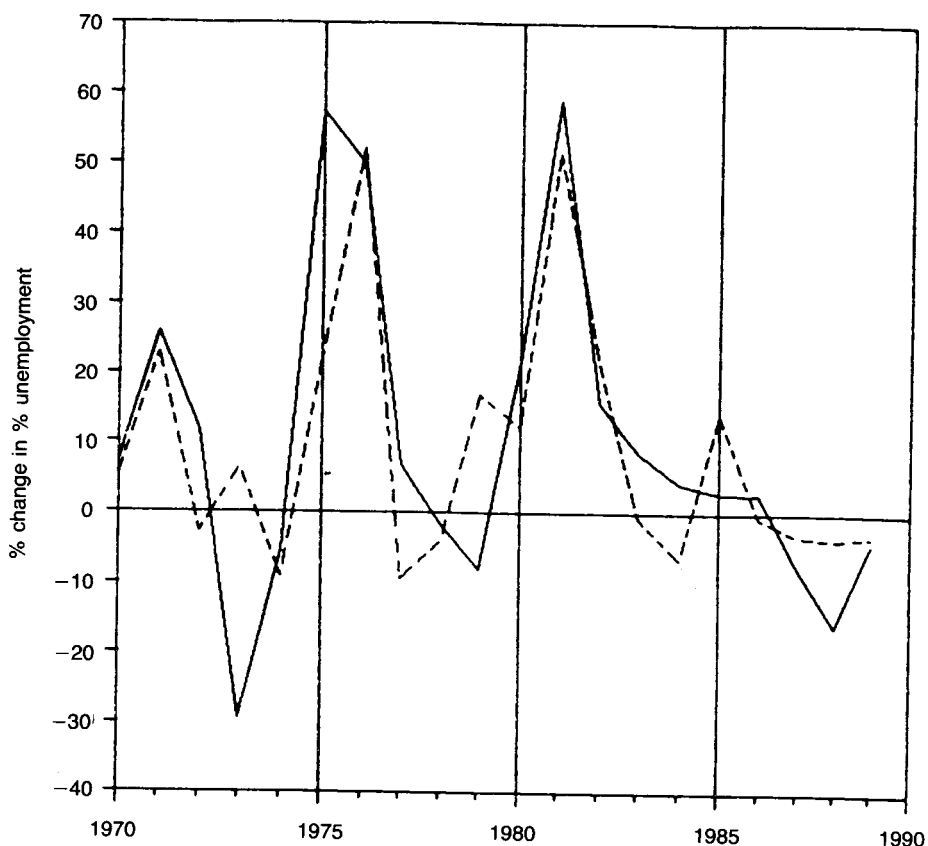


Fig. 6. Changes in % unemployment 1973–89 explained as a function of changes in real wages.^a (Dotted line is calculated value of change in unemployment.)

^a The calculated value of % change between years $t-1$ and t in % unemployment ($U_{ct} = 0.106 + 8.09 RW_{t-1}$ where $RW_{t-1} =$ % change between years $t-2$ and $t-1$ in income from employment as a share of GDP including stock appreciation but excluding income from the North Sea. The equation was estimated by fitting to period 1973–89.

earlier papers are Grubb, Jackman & Layard (1982, 1983) and Layard & Nickell (1986). The concept of equilibrium unemployment usually also carries an implication that the equilibrium rate, if not achieved by policy, will in the long run be arrived at through some automatic adjustment process.

There is a similar line of argument in Drèze & Modigliani (1981) who argue that, in an open economy, a rise in nominal wages, in conjunction with a fixed exchange rate, will raise real wages and worsen the external balance; and that that will make the government reduce demand and thus raise unemployment.

Table 4. Econometric studies of the relation in the UK between real wages and employment/unemployment.

Author(s) causation ^a	Scope of study			Evidence claimed of causation		
	Period fitted	No. of countries	T or M ^b	by real wage	by demand	of real wages
Inter-war period						
Dimsdale (1984)	1923–38	1	T	Yes	Yes	No
Post-war period						
Symons (1982)	1961–71	1	M	Yes	No	No
Post-1973 period						
Bruno & Sachs (1982)	1956–78	1	M	Yes	Yes	Yes
Geary & Kennan (1982)	1944–77	12	M	No	No	No
Nickell & Andrews (1983)	1951–79	1	T	Yes	No	Yes
Sachs (1983)	1961–81	6	M	Yes	Yes	No
Artus (1984)	1955–82	6	M	Yes	No	No
Bruno (1984)	1961–81	6	M	No	Yes	Yes
Layard, Grubb & Symons (1984)	1955–80	6	M	Yes	No	Yes
Bruno & Sachs (1985)	1961–81	6	T	Yes	Yes	No
Layard & Nickell (1985)	1955–81	5	T	Yes	Yes	Yes
Newell & Symons (1985)	1954–81	16	T	Yes	—	Yes
Bruno (1986)	1961–81	6	M	Yes	Yes	No
Michael & Urwin (1986)	1974–84	2	T?	Yes	Yes	Yes

^a Date order.

^b T = total economy. M = manufacturing.

the beginning this article does not contest the existence of this sort of effect.

It is not proposed to discuss individually the studies that claim an effect of high real wages but to focus on the methodological approach they have in common. They accept that unemployment in the period they cover was due in part to inadequate demand, and attempt to estimate how much was due to that and how much to high real wages. Real product wages are treated as representing the relative price of labour relative to that of capital, and of inducing substitution of capital for labour. The stock of capital is taken in the short term to be fixed and a rise in the price of labour is taken to cause less labour to be employed in conjunction with the same capital stock: capital is as it were spread more thickly over fewer men. The scale of unemployment attributed to high real wages thus depends in part on the assumed shape of the production function, and in part on how high real wages are.

The methodology appears to be open to major objection on three scores. First, discrimination between the respective effects on employment of real wages and demand requires adequate measures of real wages and demand. In fact, available measures are not reliable.

- 1 For instance, this article has presented two measures of real product wages which differ considerably, which are neither perfect, but may be as good as can be got.
- 2 Changes in total demand are also difficult to measure. Most studies employ as indirect measures of changes in demand estimates of one or two exogenous factors held to have *caused* demand changes: for instance, fiscal policy variables, and changes in world trade. But other influences not included were almost certainly also important, e.g. the effect of real interest rates and of credit conditions are both hard to measure. The pressure of demand is probably affected also in complex ways by changes in productivity growth or in the terms of trade.¹⁶

The second objection to the methodology employed in these studies concerns the possible speed with which adjustments to the factors of production can be made. The assumption is that a rise in real wages may cause curtailment of the employment of labour but not of capital. That implies a reshaping of the capital stock. But (as already argued) the capital stock is not sufficiently malleable for much reshaping to be possible within a period of two or three years. If so, the sort of adjustment is inapplicable as an explanation for the kind of unemployment changes that occurred, since they consisted mostly of large and quick changes.¹⁷ In other words, it is unrealistic to suppose that the process envisaged can occur so quickly.

The third objection to the methodology relates to a more fundamental question of theory. In the theory of production, the proportions in which

¹⁶ The general difficulty may be put as follows. For many purposes it is quite usual to take changes in real expenditure as a measure of changes in real demand; and, below high employment levels, that may for many purposes be fairly adequate. In the present case however it can be argued that some output (and hence some expenditure) is prevented by high real wages: if so expenditure fails to measure demand. But it is probably impossible to construct an accurate measure of demand which is independent of observed expenditure by adding up the effect of all the factors that determine demand. Partial or proxy measures on the other hand could mislead seriously. Some studies for instance use as a proxy measure of demand the rate of growth of the nominal money stock; that appears to me an extreme instance of inadequate measurement.

¹⁷ In fact when labour gets unemployed, much capital falls out of employment also. To explain that, there is no need to call in aid the concept of a production function.

factors are employed depends partly on the slope of the isoquant and partly on the relative price of the factors. The relative price of labour and capital is however not to be measured by real product wages. For labour is embodied in capital goods and a rise in labour costs will also raise the cost of capital goods. The additional cost of more capital-intensive methods is measured by the rate of interest; and the relative cost of labour compared with that of capital is measured by the ratio of nominal wages to the nominal rate of interest (i.e. by one definition of the real rate of interest). That can move and has moved very differently to real product wages.

Any one of these three reasons would seem to discredit the claim of production function methods to say how much unemployment was due to inadequate demand and how much to high wages. These studies must pick up the evident association in the post-1973 period shown in Fig. 6 between high real wages and high unemployment. But though real wages clearly varied in association with unemployment, that does not show that they varied enough to make employment unprofitable at the margin, nor therefore to validate the theory that high real wages caused the unemployment.

Why profits were low during the recessions

An alternative view is that while general insufficiency of demand caused the unemployment, ¹⁸ the observed high wages/low profits were due to temporary maladjustments of a sort which employers will not have regarded as a reason to shed labour.

One mechanism is simply that in conditions of low demand firms may tend to shave profit margins on what they can sell (low demand also reduces how much they can sell and how many they can employ). A second important factor was that in the two recessions of the 1970s normal productivity growth was interrupted. (That could have been either a yet further effect of lack of demand, or by coincidence some other cause.) Whatever its origin it was a major break in the normal behaviour of the economy whose consequences requires examination.

During periods of normal growth, productivity tends to rise each year and firms tend to advance prices by an amount which is a margin below the growth of nominal labour costs. If the margin equals productivity growth, the share of profit will remain constant. During the steep recessions of 1929–32, 1973–5 and 1979–81, the normal path of productivity growth was

¹⁸ Some unemployment also was probably due to high wage rates in particular regions or of particular grades of labour or to a high exchange rate.

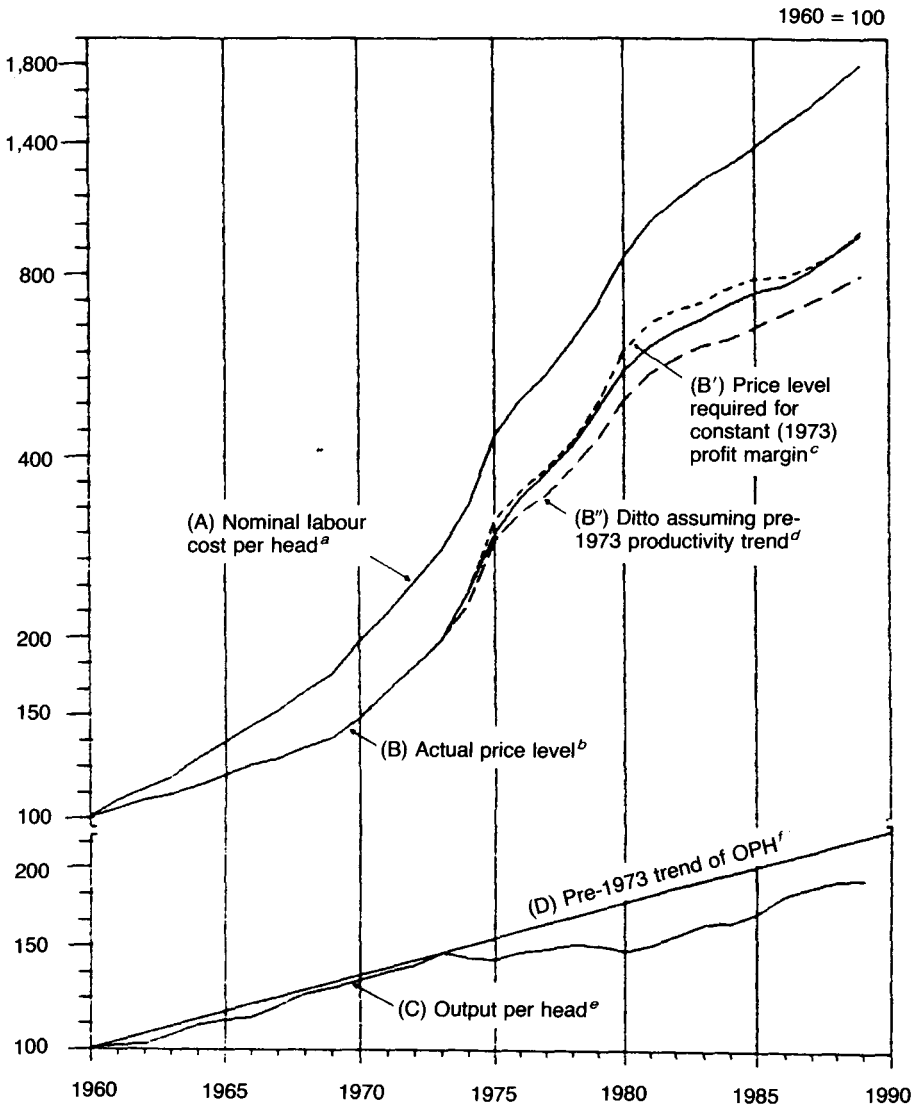


Fig. 7. Analysis of productivity labour costs and prices 1960–89.

^a Income from employment divided by number of employees.

^b Deflator of GDP at factor cost including Stock Appreciation, excluding North Sea output [= curve B].

^c Hypothetical level of GDP deflator assuming it increased after 1973 in proportion to the increase of actual unit employment cost.

^d Hypothetical level of GDP deflator assuming it increased after 1973 in proportion to the increase of the unit employment cost if there had been no shortfall in productivity.

^e GDP at 1985 factor cost (excluding North Sea output) divided by number of employees.

^f Extrapolation of exponential growth rate of output per head [as at C] in years 1960–73.

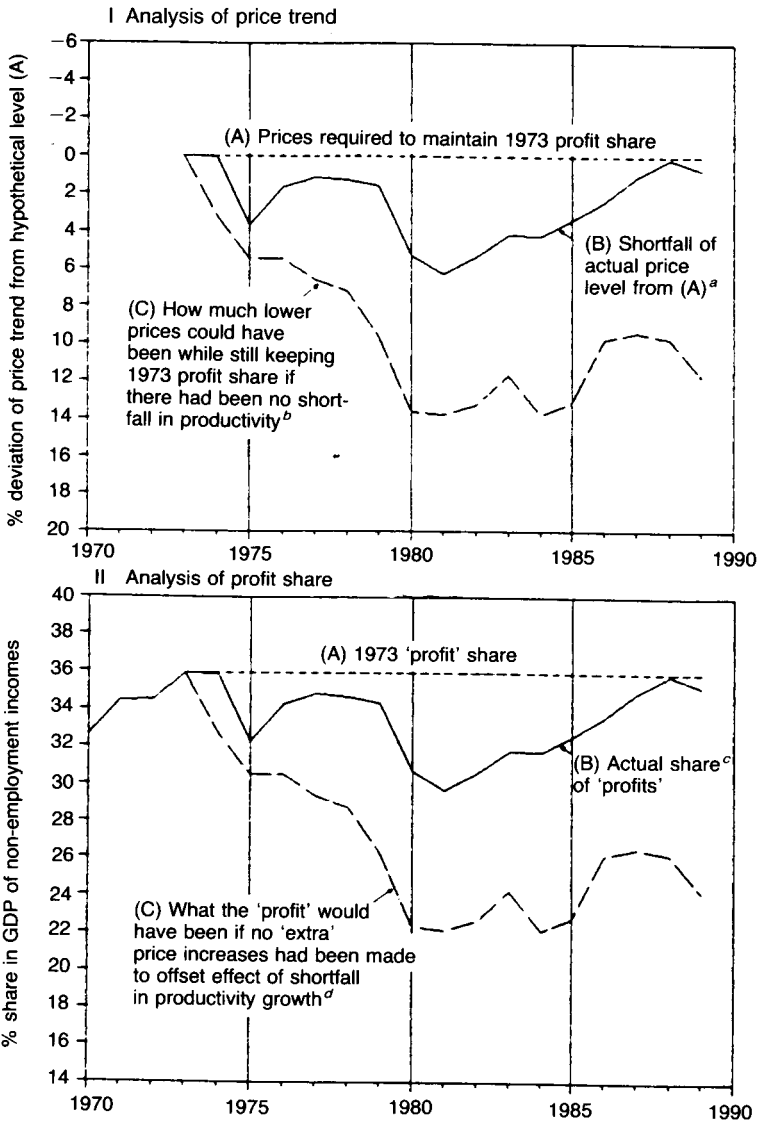


Fig. 8. Prices and profits on different assumptions 1973-89.

^a % deviation of actual GDP deflator (adjusted to include stock appreciation and to exclude NS output) from level of GDP deflator required to maintain the 1973 share of non-employment incomes in GDP, given the actual course of output per head.

^b How much lower the GDP deflator would have been, if it had maintained the 1973 share of non-employment income in GDP, and if output per head had grown as fast as in 1960-73.

^c How far the actual share of non-employment income in GDP fell below the 1973 share.

^d How much the share of non-employment income would have fallen below the 1973 share if firms had assumed that output per head had continued to grow as fast as before 1973 and had raised prices only enough to maintain the 1973 share.

broken. If firms had sought to prevent profit margins being eroded, they would have had to increase prices by *more than the full extent* of the rise in nominal labour costs (since productivity fell absolutely). They did not do this, probably for two reasons. First, because demand fell off. Second, in a mild recession any check to productivity growth is temporary and quickly reversed. Here it was not and firms probably needed time to discern and adjust to the new trend.

In the long expansion after World War II, labour productivity increased fairly steadily. Then at OPEC I (1973–5) it fell; then started to grow again; then at OPEC II (1979–81) fell; and again started to grow—but never at a rate much higher than the pre-1973 pace (Fig. 7: panel B) so that the previous path of productivity growth was never regained.

Figure 7 illustrates the implications for firms' pricing. Panel A shows growth of nominal labour costs; and, along with that, the course of prices that would have been required to keep profit margins constant at their 1973 level—on the alternate assumptions 1 that productivity had continued to grow as it had in the previous period 1960–73, or 2 that productivity grew as it in fact did after 1973. The actual course of prices fell between these extremes. In the first two years after 1973 firms failed to raise prices by enough to compensate for the interruption of productivity growth; but four or five years on they had largely caught up.

Figure 8 gives for clarity a kind of enlargement of Fig. 7. Panel A shows how big the 'shortfall' in prices was, as compared with what prices would have had to be to preserve 1973 profit margins given the check to productivity growth. Panel B shows that the whole of the dip in profits (and, therefore, the whole of the peak in real product wages) can be explained as the result of a lag in adjusting prices to the downward shift of the path of productivity growth. Firms went through the same experience again after 1980, and it was only in 1986 that percentage profit margins got back to the 1973 level.¹⁹

It has already been argued in part 1 that it is a major defect of the High-wage theory as usually expounded that it offers little or no explanation of how real product wages get to be high. How high wages/low profits arise affects what effects they can be expected to have. If profits are low because demand is low, it would be more natural to attribute the accompanying unemployment directly to that low demand not to the low profits low demand has also caused. If profits are low because firms are temporarily unable to assess the new trend of productivity growth, firms will see that as

¹⁹ The year 1973 is taken only as a convenient reference point: it was a year when profit margins were unusually high.

due to their inability to cost effectively, not to labour having got relatively costly.

3. Conclusions

The macroeconomic interconnections here involved are too complex to allow completely categorical conclusions. But the above discussion points to a conclusion as definite as this inevitable uncertainty permits: namely, that there are no good arguments in favour of the theory that unemployment is caused by generally high wages.

The chief emphasis has been on theoretical considerations, discussed in part I. The conclusion was that in conditions when, by hypothesis, demand is adequate, it is not plausible to suppose that firms should so price their products as to make it unprofitable to satisfy that demand; and thus implausible to suppose that real wages, though they vary, vary to the extent of ever becoming 'excessive' in the sense here meant.

The second part of the argument has been that the empirical evidence for the United Kingdom does not contradict the conclusion to which theoretical considerations point.²⁰ There is at times a statistical association between real product wages and unemployment, mostly however confined to the post-1973 period. Here unemployment can well be ascribed to low demand, whose existence all parties admit; and high wages/low profits to a change in trend in productivity, to which the appropriate response was not to cut employment by more than inadequate demand dictated, but to raise prices, as in time firms did.

The High-wage theory has not attracted much criticism. Two writers (Schultze, 1986; Worswick & Gausden, 1986) have treated its claims as exaggerated. Hopkin (1984) argued that the theory was 'unproved and implausible', which is essentially my own conclusion.

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²⁰ I would expect a similar examination of the evidence for other countries to show the same.

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