CHAPTER 2
WAGE BARGAINING AND THE INFLATION PROCESS

by Ken Coutts, Roger Tarling and Frank Wilkinson

Most economists seem to agree that price inflation is caused, predominantly at least,[1] by wages rising faster than productivity, the important area of disagreement being over what determines wages. On the one hand the 'monetarists' hold that the rate of change in the growth of money wages (i.e. the acceleration or deceleration) is ultimately governed by supply and demand in the labour market; hence that a necessary and sufficient condition for slowing down wage inflation is that unemployment should be raised above some 'natural' rate.[2] On the other hand 'Keynesians' hold that, unlike commodities, labour in the aggregate does not have a supply price, in the sense that significantly more or less is forthcoming at alternative actual or expected real wages. Employment is determined by effective demand[3] and wage inflation is only weakly related to the pressure of demand for labour. The 'Keynesians' hold that the level of money wages is mainly determined by institutionalised collective bargaining which may, even at quite high levels of unemployment, seek to achieve higher levels of real wages than the economic system will actually provide. They have therefore tended to attach great importance to the successful implementation of 'incomes policies' as the way of reconciling full employment with price stability.

This chapter first describes how a new index of wage settlements has been derived, and presents the series itself; it will be argued that this is the appropriate series for empirical testing of either of the main theories of wage determination. The chapter next considers how well the monetarist position stands up to empirical testing and criticises some of the work so far carried out on data for the UK. Finally, a view of the inflationary process is presented in which the outcome of wage bargaining is held to be determined by a number of factors, of which the pressure of demand for labour is only one.

Average earnings and the wage bargain

An aggregate index of wage rates (or earnings) does not represent wage bargaining *behaviour*. This is because such an index is an average of wage rates (or earnings) currently being paid and is therefore a weighted average not only of settlements made in any particular period but also of settlements made in previous periods which have not yet been superseded.

The use of an annual wage rate index would give rise to problems of interpretation even if 25% of workers settled each quarter of the year, but these problems become more acute if the proportion is not constant and still more so if the pattern changes through time.[4]

The statistical measure needed for an analysis of the determination of wages which can be given a meaningful interpretation in behavioural terms is an index of the wages of those who, in the period in question, do obtain new awards.

The settlements by which wage rates agreed nationally take effect are monitored by the Department of Employment and published each year in 'Changes in time rates of wages and hours of work'. These data on wage settlements are crucial to any analysis of inflation, not only because they can be used to construct the appropriate variable for statistical investigation of wage determination, but also because they are the basic information from which the official wage rate index is formed.

Before considering the various theoretical properties of a wage settlement index, we describe how our settlement index has been derived and how the usual index of average wage rates being paid (the wage rate index) may be adequately inferred from the index of wage settlements. In the following section, the principles and algebra of the derivations are set out rigorously; estimated values for the indices are presented in Table 2·1.

A wage settlement index and the wage rate index

We have drawn, from official statistics, data on settlements for 100 individual groups for the period 1958 to 1975. Every settlement made by national negotiation for the groups has been recorded, giving details of over 1500 individual settlements. While the volume of information to be extracted and processed is large, the most important part of the statistical preparation is checking that the settlement information provided is appropriate. For example, settlements for hourly rates have to be checked to see what they imply for weekly rates, since in a number of cases they result solely from changes in normal weekly hours. Furthermore, individual settlements have to be examined to ensure that they are settlements for minimum wage rates, affecting all workers in the bargaining group, rather than minimum earnings, which generally directly affect only a small proportion of the workers covered. From these data on settlements are obtained an index of the money value of settlements made in each year, the

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[1]The main exception is when commodity prices rise as a result of market forces or (as in the case of oil) for other reasons. There remains some disagreement about whether fluctuations in demand cause the prices of industrial products to change relative to costs. Our view is that they do *not*, and some further relevant evidence taken from the recent period of unprecedented recession is presented in Chapter 3.

[2]The natural rate is *defined* as the rate above which inflation decelerates and below which it accelerates indefinitely.

[3]There has not in fact been any significant change in the relationship of employment to output of the kind that presumably would have occurred if labour in aggregate had been pricing itself out of the market.

[4]These problems, which arise because of variations in the frequency of settlements, have been pointed out by J. Johnson and M. Timbrel ('Empirical tests of a bargaining theory of wage rate determination', *Manchester School*, 1972) and by Orly Ashenfelter and John H. Pencavel ('Wage changes and the frequency of wage settlements', *Economica*, May 1975). However, in both cases the adjustments made to the wage rate index are inadequate because they do not (as the authors admit) correct for all the effects of a changing pattern.

Table 2.1 Wage settlements, wage rates and earnings (annual % changes)

	Wage settlement index	Wage rate index		Official series	Earnings	
		Derived series			Official series	Derived series
		A	B			
1960–1	−1·2	2·0	4·3	4·2	6·0	7·9
1961–2	7·5	1·3	3·8	4·3	4·2	6·0
1962–3	0·8	5·4	4·4	4·3	4·1	4·7
1963–4	8·0	2·9	4·5	4·5	6·8	6·9
1964–5	5·8	7·2	4·6	4·7	6·8	7·7
1965–6	−0·7	4·1	5·3	4·5	7·8	7·8
1966–7	7·9	0·4	3·2	3·3	3·3	5·7
1967–8	5·2	8·3	5·0	5·7	6·1	8·0
1968–9	4·2	5·1	4·8	4·7	7·9	8·2
1969–70	14·7	8·9	10·9	10·8	12·4	12·9
1970–1	12·3	13·7	11·2*	14·2	15·4	11·9
1971–2	11·4	12·1	12·8	13·8	13·4	12·1
1972–3	11·5	11·0	11·1	13·2	13·0	14·1
1973–4	12·6	13·8	14·4	21·4†	19·3	21·4
1974–5	35·9	31·8	27·8	30·8	27·9	28·4

*This indicates an unrepresentative coverage in this period.

†Thresholds paid as a result of national agreements are included before consolidation in the official series, but are excluded from the two derived series A and B; unconsolidated threshold payments made on average in 1974 and 1975 were similar so that the change 1974–5 is not affected in the same way as the change 1973–4.

A Derived by the approximation in the text; a comparison with series B shows the degree of success achieved by the approximation.

B Derived according to DE principles, treating each group separately; this series shows the representativeness of our sample of 100 groups.

Notes:
1. The wage settlement index refers to male manual full-time wage rates in the 100 groups monitored covering private industries and services and public corporations; it excludes backdating and cost-of-living payments until consolidation in rates. Over this period, the index should not fall. That it does on two

occasions is an indication of the problems which remain in the method of construction because of changing coverage each year. Indexing individual settlement rates removes most of the difficulty, but not that caused by differential rates of change.

The coverage of the derived wage rate index is the same.
2. The official wage rate index refers to male manual full-time workers, for all industries and services excluding all metals and public administration (see Chapter 3 for the reason for excluding all metals).
3. The official earnings index refers to male manual full-time employees in manufacturing, taken from the October inquiry and put onto an annual basis. Lump sum payments resulting from backdated settlements are included as paid. Cyclical adjustment for variations in hours worked has been made according to Nordhaus and Godley, 'Pricing in the trade cycle', *Economic Journal*, September 1972.
4. The derived earnings index refers to male manual and non-manual full-time employees in all industries and services, excluding the public sector but including public corporations.

average time of year when settlements are made, the average period elapsing since their previous settlement, both for those settling in the year and for those without a settlement in the year, and the proportion of workers covered by settlements made in the year.

An index of settlement wages was first constructed as the weighted average of indices of wage rates for individual groups for each year, including in each year's index only the new rate agreed for those groups with a settlement taking effect in the year. This index was then used, in conjunction with the data on frequency of settlements, to construct an index of average wage rates in payment in each year, which is conceptually equivalent to the official wage rate index. There is a logical relationship between the wage settlement index and the current wage rate index, which expresses the wage rate index as a weighted average of the current and previous values of the settlement index. The logical process, set out below, is applied to the averages for the 100 groups monitored as if there were only two groups, one with a settlement in the current year and the other without a settlement.[5]

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[5]Note that in practice the membership of these two groups will change from year to year, so that the resemblance of the derived index to the official wage rate index broadly measures the success of the endeavour.

The algebraic expressions describing the relationship between the wage settlement and the wage rate indices employ the notation given below.

Let λ_t = time since the last settlement for those settling in period t.

δ_t = time since the last settlement for those not settling in period t, measured to the midpoint of period t.

γ_t = average date of settlement in period t, measured as time to end period.

WS'_t = average value of settlement (value or index) in period t, as at the average date of settlement for an average group settling in the year.

WS'_{t-i} = average value of settlement i periods ago, that is when, the average group had its last settlement.

RWS_t = proportion of people receiving a settlement in period t, including multiple settlements, if any.

During period t, the average wage being paid for any group is a weighted average of the wage at the last settlement made before the beginning of period t and the wage rate resulting from the settlement made during period t, if any. The weights are the proportions of the period for which each wage rate was
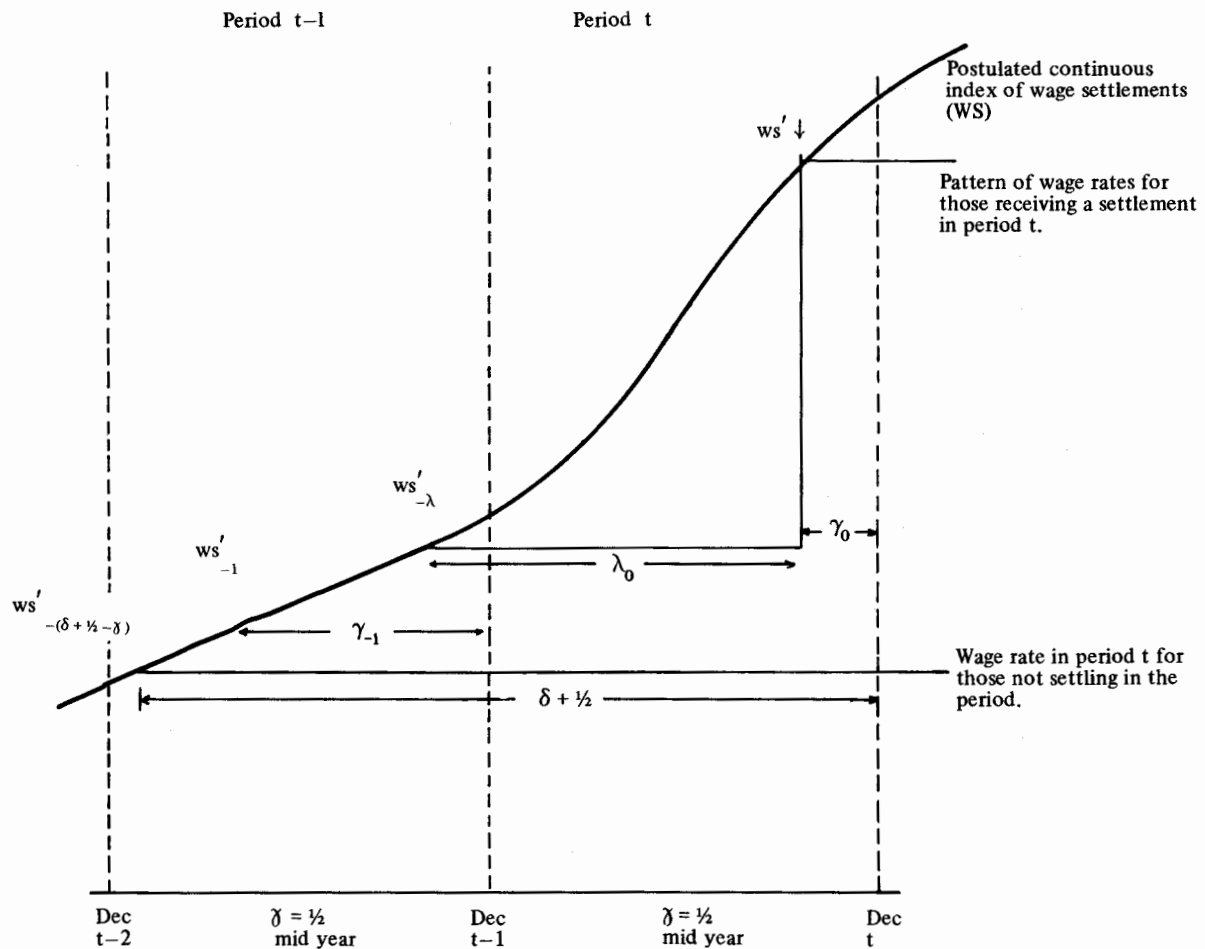
Fig. 2.1 Settlements and a derived wage rate

paid. For those with a settlement during the period, the average wage received is

$$\gamma WS' + (1 - \gamma) WS'_{-\lambda}$$

and, for those who did not have a settlement during the period, it is

$$WS'_{-(\delta + \frac{1}{2} - \lambda)}$$

In this representation, for the groups who settle at some time during the period, their previous settlement was on average λ periods ago for an agreed wage rate of $WS'_{-\lambda}$; for those who do not settle during the period, their last settlement (that is, the one which fixed the wage rate ruling throughout period t) was $(\delta + \frac{1}{2} - \gamma)$ periods ago.

Fig. 2·1 illustrates this and the other factors to be considered. The curve shown is a postulated continuous wage settlement index (WS), on which we have discrete observations at date γ_t each period.

The actual observations which we have on the wage settlement index are WS' at date γ in period t and WS'_{-1} at date γ_{-1} in period $t - 1$. Estimates of the lagged values of the wage settlement index, $WS'_{-\lambda}$ and $WS'_{-(\delta + \frac{1}{2} - \gamma)}$, can be written in terms of the two actual observations by making a linear approximation; for example[6]

$$WS'_{-\lambda} = [(1 - \triangle\gamma - \lambda) WS' + \lambda WS'_{-1}] / (1 - \triangle\gamma)$$

Using this approximation, we can write the average wage received during period t by those settling during period t as

$$\gamma WS' + \left(\frac{1 - \gamma}{1 - \triangle\gamma}\right) [(1 - \triangle\gamma - \lambda) WS' + \lambda WS'_{-1}]$$

and, by those not settling in period t,

$$[(\tfrac{1}{2} - \delta + \gamma - \triangle\gamma) WS' + (\delta + \tfrac{1}{2} - \gamma) WS'_{-1}] / (1 - \triangle\gamma).$$

A proportion (RWS_t) of all workers who have a settlement in the period receive on average the first wage rate and the remainder, a proportion $(1 - RWS_t)$, receive on average the second rate.

The official wage rate index can be approximated by the weighted average of these two wage rates; thus, a wage rate index can be written as

$$WR = (1 - \alpha) WS' + \alpha WS'_{-1}$$

where $\alpha = [\delta + \tfrac{1}{2} - \gamma + RWS (\lambda (1 - \gamma) - \delta - \tfrac{1}{2} + \gamma)] / (1 - \triangle\gamma)$

For practical purposes, it is convenient to refer to a wage settlement index which does not depend on the time of year when settlements are, on average, made; instead of using the actual observations for the wage settlement index, the estimate of the wage rate index can be written in terms of values of the wage settlement
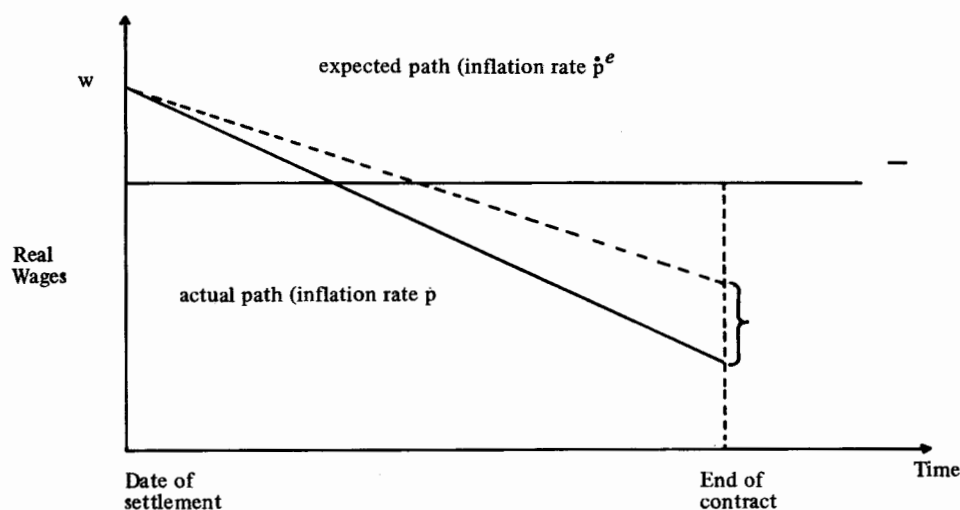
Fig. 2.2. The time path of real wages: an 'expectational' model.

index adjusted to refer to the mid-year ($\gamma = \frac{1}{2}$).[7] The expression for a wage rate index in terms of a wage settlement index is a weighted average of current and past settlements; the weights depend on the frequency of settlements, as described by the time between settlements (λ, δ), the proportion who obtain a settlement in the year (RWS) and the bunching effect changing the average date in the year when settlements are made (γ). The nature of these weights demonstrates that the relationship between the wage rate index and the wage settlement index is a complex one.

This approach ignores a number of practical problems of detail, such as the treatment of cost-of-living increases, interim agreements and backdating of settlements, which would lead to differences between a wage rate index constructed by the above method and the official index published by the Department of Employment. But the main difference is that the above index is constructed using period averages over groups and derives a unit wage rate index by applying the logical construction for two sets of groups to these averages, whereas the official index treats each group individually.

By making a number of further adjustments, mainly to take account of cost-of-living payments, wage drift,[8] and the earnings of non-manual employees, an expression can be derived for average earnings, adjusted for normal cyclical variations. Table 2·1 shows the main derived series for wage settlements, wage rates and average earnings, expressed as annual percentage changes, and also contains for comparison the official series for wage rates and earnings.

The wage bargain; expectation versus compensation

Any hypothesis about wage determination must, if

it is to carry conviction, be capable of plausible interpretation as wage bargaining behaviour.

The monetarist view is that money wages are determined as the outcome of a bargain denominated in *expected real wages*. This view implies that the expected rate of inflation enters one-for-one into the outcome of the bargain, in the sense that, the pressure of demand and other things being equal, money wages will rise x% more if there is an expectation that prices will rise x% than if there is an expectation that they will not rise at all. The hypothesis can in principle be tested (according to Friedman and others)[9] by exploring the relationship between the rate of change in money wages, on the one hand, and, on the other, unemployment and price expectations.

$$\overline{w} = f(u, \dot{p}^e)$$

The monetarist hypothesis implies that the coefficient on unemployment will be negative[10] and that on price expectations will be close to unity.

The bargaining process for an individual group of employees implicit (as we understand it) in the monetarist view is represented in Fig. 2·2.

At each settlement, a group makes a contract for its wages over the period to the next settlement. The contract is made by agreeing a level of money wages which will, given their expectations about the course of inflation over the period, give the group an average real wage of $\overline{w}$.[11] To give precise meaning to this view, it is necessary that the period over which the inflation is expected to occur is known, that is, that there is an expected date for the end of the contract; note that this does not imply that contracts expire at fixed and unchanging intervals. For an expected rate of inflation over the period of $\dot{p}^e$, and a contracted average real wage of $\overline{w}$, the actual wage agreed at settlement is w

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[7]This alternative expression, replacing WS[1] by WS, the mid-year estimate, is

$$WR = (1-b)WS + WS_{-1}$$

where $b = \gamma - \frac{1}{2} + a(-\triangle\gamma)$.

[8]For incorporation into the model of the economy, wage drift has been assumed to increase at a constant rate, estimated to be 2% per year. It is our intention to develop a more appropriate treatment of wage drift within the context of this model of wages at a later stage in our research.

[9]For a lucid account of the monetarist position see in particular M. Friedman, *Unemployment vs. inflation?*, Institute of Economic Affairs, Occasional Paper No. 44, 1975.

[10]In more recent specifications, as later in this section, the inverse of the unemployment rate is used in the analysis, so that the expected sign is positive.

[11]This is more typical of bargaining behaviour in the USA where fixed term contracts are usual; in the UK the agreements are more usually open-ended.
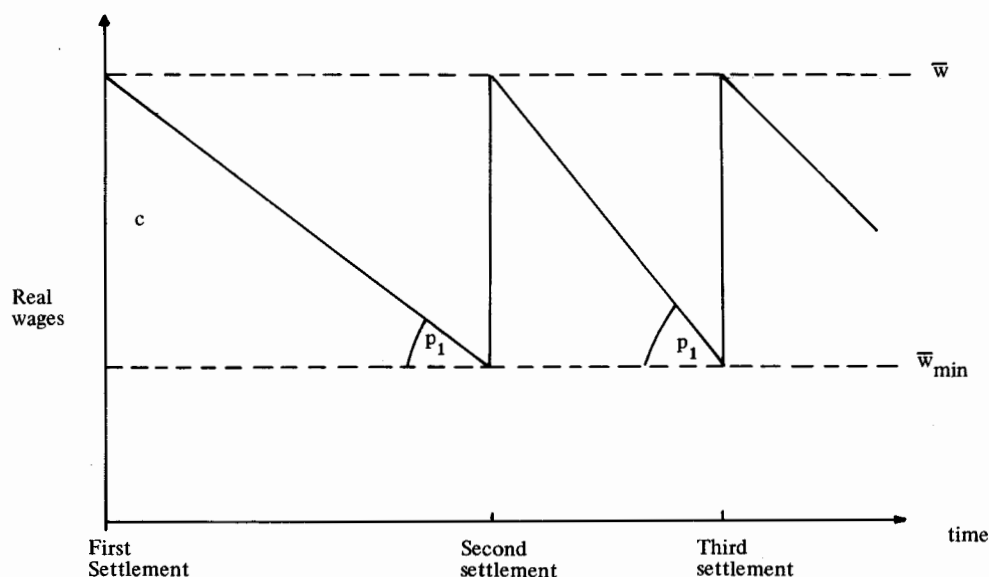
Fig. 2.3. The time path of real wages: a 'compensational' model.

and the *expected* path of real wages is shown as the dotted line.

But the actual path of real wages, shown as the unbroken line, is governed by the *actual* rate of inflation over the period, $\dot{p}$. Unless expectations are fulfilled, so that the actual and expected rates of inflation are equal ($\dot{p}^e = \dot{p}$), there will, at the end of the contract, be a difference between the actual level of real wages and the level expected when the settlement was made. In the example shown in Fig. 2·2, the actual rate of inflation is higher than expected, so that actual real wages at the end of the contract are lower than expected. In Friedman's exposition of the monetarist view, there is no statement about whether or not this difference would affect the next contract which is made, so that the group would not necessarily compensate exactly for past inflation.

While Fig. 2·2 represents an 'expectational model' of the bargaining process, Fig. 2·3 represents a 'compensational' model.

Here $\overline{w}$ represents the real wage obtained by the bargaining group immediately after settlement. This real wage is then eroded by inflation. If we assume that $\overline{w}_{min}$ is the lowest level of real wages the group is prepared to tolerate, the length of time between settlements varies according to the extent to which erosion is tolerated and is governed by the distance c and the rates of inflation $\dot{p}_1$, $\dot{p}_2$. As soon as real wages fall to $\overline{w}_{min}$, under this model, they are restored via a money wage bargain to what may be termed the 'target' or 'settlement' real wage.

These two models imply that different factors enter the minds of those engaged in wage bargaining and determine the outcome; expectations about inflation constitute the key to the first model but do not enter *at all* into the second. But there is a difficulty in interpreting the monetarist view in terms of Fig. 2·2. While the role of pressure of demand might operate in each model, something which we shall discuss in the next section, the treatment of compensation for inflation is different and is in fact ambiguous in the monetarist

version. Recent work in the UK, by Michael Parkin *et al.*,[12] has focused attention on the relationship between wages, price expectations and the pressure of demand for labour. But the price expectations variable is obtained by a survey of expectations in the period of settlement, so that compensation is purely for expected inflation; in this specification, differences between actual and expected inflation *are not compensated for*, implying, implausibly, that the amount of the shortfall (shown in Fig. 2·2) is not included in the settlement. An alternative relationship, which is generally referred to as 'adaptive expectations', does not employ a direct measure of price expectations, but includes as explanatory factors lagged values of prices, which themselves are supposed to condition and therefore reflect expectations about future changes in prices. This adaptive expectations model can quite easily absorb the treatment of differences between actual and expected inflation. But the meaning of a term in lagged price changes is notoriously ambiguous; it is just because such terms cannot be certainly identified as expectations that Michael Parkin has used a measure of expectations derived directly from survey data.

Some tests of the expectational models

Using the various estimates of wage settlements, wage rates and earnings, we have tested empirically the expectational model

$$\overline{w} = f(u, \dot{p}^e)$$

Data for price expectations have been generously supplied to us by the Manchester inflation workshop.[13] Table 2·2 shows the results of regressions for wages and earnings on price expectations and the inverse of the unemployment rate, indicating the pressure of demand

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[12]J. M. Parkin, M. T. Sumner and R. Ward; in K. Brunner and A. H. Meltzer (eds) *The effects of excess demand, generalised expectations and wage-price controls on wage inflation in the UK* (forthcoming).

[13]These data were ingeniously constructed by Carlson & Parkin. See J. A. Carlson and J. M. Parkin, 'Inflation expectations' *Economica*, 1975, pp. 123-38.

Table 2.2   Regression results for expectations models

Dependent variable (annual % changes in)		Constant	Price expectations ($\hat{p}^e$)	Rate of inflation, lagged			Inverse of unemployment rate (1/u)	$\bar{R}^2$
				1 period	2 periods	3 periods		
Basic hourly wage rates (excluding all metals)	(a)	—2·15 (0·34)	2·09 (3·87)				—2·09 (0·27)	0·66
	(b)	0·25 (0·07)		1·19 (1·93)	0·64 (0·73)	0·46 (0·57)	—0·59 (0·30)	0·78
Annual average earnings (adjusted for overtime)		4·58 (0·60)	1·34 (2·06)				—6·39 (0·69)	0·39
CEPG derived average earnings (adjusted for overtime)		4·87 (0·65)	1·21 (1·89)				—4·39 (0·48)	0·31
Wage settlements (including cost of living and threshold payments)	(a)	9·24 (1·05)	0·77 (1·04)				—11·76 (1·11)	0·22
	(b)	0·86 (0·16)		1·63 (1·67)	1·38 (0·98)	—0·81 (0·64)	—1·44 (0·46)	0·60

Notes:
t-ratios are shown in brackets.
Official series relate to all manufacturing industries; the basic wage rate excludes series for all metals, which are not comparable (see Chapter 3).

Derived series relate to the private sector but also include public corporations.
(a) is a test of the pure 'expectational' model while
(b) is a test of the 'adaptive expectations' hypothesis.

for labour; the square of the inverse, $(1/u)^2$, was also tried but was generally found to make a smaller contribution to the explanation.

The best result was obtained for the official index of basic hourly wage rates, with 66% of the variation explained by these two variables. Price expectations make a significant contribution but the coefficient of 2 is implausibly large; the coefficient on the labour market variable has the wrong sign, though it is not statistically significant.

More recently, monetarists have turned their attention to average earnings; for an index of earnings corrected for variations due to changes in · hours worked, the statistical explanation is less good than for wage rates and the price expectations variable less important, although with a more satisfactory coefficient; the estimated effect of the pressure of demand remains perverse. Replacement of the official earnings index by our constructed (comparable) series gives a somewhat worse, but otherwise similar, explanation.

But, as we and others have argued, neither the wage rate nor an index of average earnings is conceptually the correct variable for a statistical investigation. When the correct variable, an index of wage settlements, is used, the results are very much worse; not only is the pressure of demand still not a significant factor, but it is also found·that the price expectations term does not have a significant effect on the outcome of wage bargaining. Even the adaptive expectations model, which allows more flexibility in the treatment of expectations of inflation, shows no significant effect of either variable.

The role of price expectations in the statistical explanation is now evident. Rather than being a behavioural variable in individual bargains, it is acting in large part as an explanation of the relationship between the wage settlement index and the wage rate index. Our preliminary investigations of data on the frequency of settlements confirm this; both the proportion of workers having a settlement in the year and the average time between settlements are significantly related to changes in the *actual* rate of inflation.

In these tests of expectational models, the pressure of demand for labour, as measured by the unemployment rate, has always been insignificant; indeed, the coefficient has the wrong sign. This simply confirms what can be observed by an inspection of the data; changes in the unemployment rate appear not to relate to changes in wages since the mid-1960s. The relationship, called the 'Phillips curve' and first given an empirical foundation by Phillips in 1958,[14] appeared to have broken down when the rate of inflation accelerated and unemployment increased, and various attempts have been made to retrieve it. The most important step was to introduce explicitly the treatment of compensation for expected inflation, but by itself this has had no significant success. A number of other factors, such as variables to reflect the ending of incomes policies and the rise in unemployment benefits, have also been included but, taken as a whole, the various results are inconclusive. Under this hypothesis, the empirical evidence is *against* unemployment being, in the end, the only cause of wage inflation and is only consistent with its being one of many factors.

[14] A. W. Phillips, 'The relationship between unemployment and the rate of change of money wage rates in the UK, 1861–1957', *Economica*, 1958, pp. 283–99.
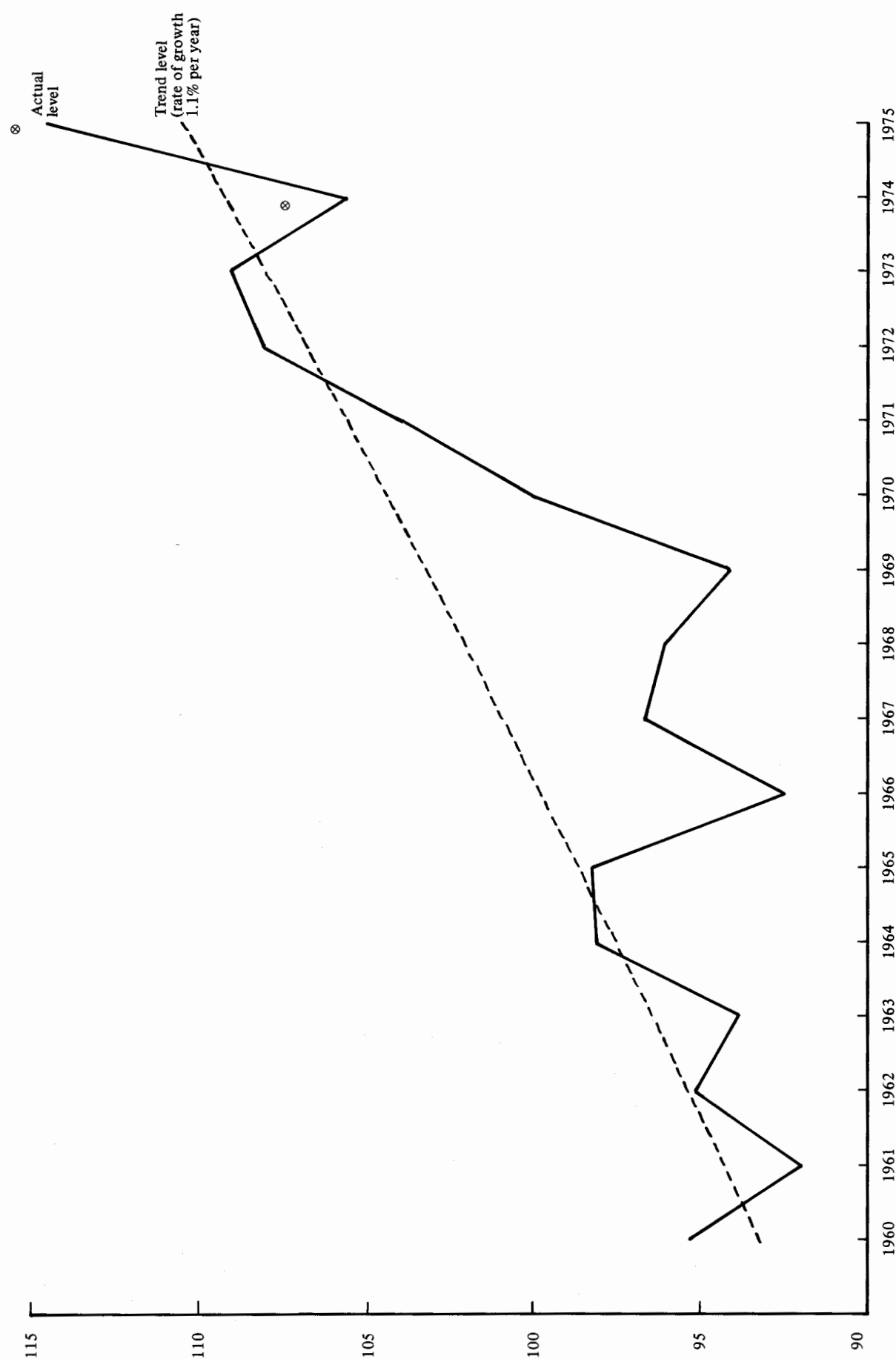
Fig. 2.4 Real post-tax wages at settlement (index 1970=100)

Explaining the wage settlement index
The behavioural assumption about the response of

bargaining groups to inflation which we prefer to adopt is that the groups attempt to reach a settlement

which compensates them for the erosion of the wage agreed at their previous settlement; expectations do not enter the model at all, because changes in the actual rate of inflation lead to changes in the time between settlements.

The relationship between the rate of increase of the wage settlement index, the current rate of inflation and the pressure of demand for labour is summarised by the following regression:

$$\dot{W}S = -0.66 + 1.38\dot{p} + 0.38 \quad ^1/u \qquad \bar{R}^2 = 0.75$$
$$\quad\quad (0.16) \quad (5.37) \quad (0.18)$$

Annual rates of change in the wage settlement index then correlate quite closely with the rate of inflation between settlements, with a coefficient not significantly different from unity, giving empirical support to our behavioural assumptions. The pressure of demand for labour is still not a significant factor but, at last, has the 'correct' sign. Note that since there is a lagged relationship between wage settlements and average wage rates in payment (a wage rate index), the econometric difficulties of simultaneous determination of wage rates and prices are not acute.

Accordingly, we have derived the real value of wages at settlement, that is, the value of wages after allowing for that part of the award which compensates for inflation, by dividing by a price index for consumers' expenditure.[15] There has been some debate in the literature as to whether a part of the award at settlement is compensation for tax rate changes,[16] and we have made the assumption that groups do seek to compensate for changes in the average effective tax rate for the purposes of including the wage model in the model of the economy, although the compensation element is likely to be more complicated than the simple form which we have assumed. Multiplication of the real value of wages at settlement by the average 'retention ratio', that is one minus the average effective tax rate, results in a real post-tax value of wages at settlement which excludes that part of the new award attributed to compensation for inflation and changes in tax rates since the previous settlement.[17] This series is shown in Fig. 2·4.

We now concentrate our discussion on the determinants of this series. After allowing for the elements of compensation in new awards, the factors influencing the outcome reduce to the pressure of demand in the labour market, trade union organisation and the implementation of incomes policies. The relationship between the unemployment rate and the real post-tax value of settlement wages is no stronger than that already detected with the money wage settlement, so that we take the view that wage inflation is at most only weakly related to the pressure of demand for labour. Monetarists postulate a relation between real wages and the pressure of demand in the labour market and that inflationary pressure is zero at the natural rate of unemployment. The view put forward here is that since political and social factors, though these are influenced by economic events, are so important, a good statistical explanation of real wages in terms of economic variables is unlikely to be found. The counterpart of this view is that the relationship of employment, and therefore unemployment, with the level of effective demand should be relatively undisturbed by accelerated inflation. Although the events of 1966 (particularly the introduction of SET) apparently affected the relationship in that year, this was a once-and-for-all shift and careful econometric studies have not shown any further significant breakdown during the period of rapid inflation. The fall in output over the last two years is quite large enough by itself to account for the rise in unemployment and there is no evidence at all that labour in aggregate has been pricing itself out of the market.

The view that incomes policies can be at least temporarily effective receives quite strong support; the real post-tax wage at settlement was held down in 1961 (a wage pause), 1966 (a wage freeze), 1967-9 (severe restraint) and 1972-3 (stage 1, £1 plus 4%), in relation to an underlying trend rate-of growth of 1% per year.[18] Periods of accelerating inflation are shown by this series to be only a catching-up process, returning real wages to their historical trend. The only strong counter-movement, when real wages forged ahead of trend, occurred in 1975 after threshold payments had been implemented; in the diagram, the level of real wages inclusive of all threshold payments (whether or not consolidated) in 1974 and 1975 is shown by the circled points.[19] This demonstrates the extent to which threshold payments in 1974 offset the 7% limit of stage 3 and the effects of consolidation of these payments in 1975. The high level of real wages in 1975, relative to trend, can, to a large extent, explain the widespread acceptability of the pay limit of £6 per week for new awards, which is much less than would be necessary for full compensation since the previous settlement.

For an incomes policy to have any major effect in reducing inflation, two conditions must be fulfilled: (a) there must be a low norm, which allows new awards below amounts necessary to give full compensation, and (b) the policy must be acceptable, although, if it is only temporarily acceptable, inflation will rebound when the policy breaks down. Whether or not both of these conditions can be fulfilled on a permanent basis is very much open to question.

If in practice it is not possible to use incomes policies to depress wage settlements permanently below the level which would result from unrestricted bargaining (that is, with full compensation at the desired intervals), it follows that the only feasible strategy for slowing down inflation (other than resort to mass unemployment) is to secure sufficient growth of real national income to provide a level of real earnings capable of validating wage settlements.

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[15]The index is the implicit deflator for consumers' expenditure, shown in Table A3 of Appendix A.

[16]The issue was first raised by one of the present authors in *Do trade unions cause inflation?*, by D. A. S. Jackson, H. A Turner and S. F. Wilkinson (Cambridge University Press, 1972).

[17]In order to allow for the time elapsing between the end of bargaining, that is the date of settlement, and the date of implementation, the price index and the tax rate were constructed to relate to a date three months before the implementation date, which is the date to be found in the official statistics on settlements.

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[18]Normal wage drift adds a further 2% per year to this growth.

[19]Threshold payments have been included as flat-rate payments in addition to wage rates, giving a proportionate increase in wage rates approximately twice that in earnings.