Trends in profit margins

Inflation, as measured by the twelve-month change in the retail price index (RPI) rose by over 3 percentage points between the first and fourth quarters of 1988—from 3.4% to 6.5%. Over the same period the rate of increase in manufacturers' output prices rose from 3.8% to 4.9%; and the GDP deflator from 4.9% to 6.9%. This increase in inflation has been attributed to a number of factors, but one widely-held view is that a significant element may be ascribed to the growth in company profitability, and in particular profit margins.

This article[1] sets out the methodology underlying the calculations of the profit margins figures that have been used in regular reporting in the Bulletin, *and presents a variety of measures which suggest that, economy wide, profits have contributed significantly to inflation. However, revisions to the manufacturing margins calculations in the light of new data on employment and productivity imply that the recent growth has been less rapid than previously thought and that, as a consequence, manufacturers' margins may still be below earlier peaks. An accompanying note[2] presenting estimates of margins in a number of major overseas economies indicates that the growth of profit margins in the United Kingdom has not been an isolated development.*

A final section suggests that competitiveness and capacity utilisation are important causes of developments in margins, but highlights the difficulties associated with explaining recent behaviour.

Recent trends in prices

The rise in the RPI in the past year reflects a number of special factors. It is clear, for example, that much of the increase has come from the effects of higher mortgage interest payments: when these are stripped from the index the twelve-month growth rate rises by 2 percentage points between January 1988 and January 1989, compared with the $4\frac{1}{4}$ percentage points increase in the all-items index. If the effects of rapid increases in local authority rates and other housing costs are also removed, the rate of growth of prices rises from 3.2% in January 1988 to 5.1% in January of this year—still an unwelcome trend, but a little less adverse than the all-items index would suggest.

The upward trend evident in the RPI excluding housing is also apparent in a range of other indices. For example, the rise in the GDP deflator, which is generally regarded as the most complete measure of domestically generated inflation, appears to have increased sharply in the first three quarters of last year, before easing slightly in the final quarter. Excluding oil, the upward drift in the deflator is more immediately apparent, with the four-quarter increase rising from around $3\frac{1}{2}$% in mid-1987 to over $6\frac{1}{4}$% by the final quarter of 1988.

One further indicator of the extent of current inflationary pressures is the rise in the rate of growth of manufacturing prices (on both export and domestic sales). At the beginning of 1988 the rate of increase of manufacturers'

output prices (on home sales) stood at just over $3\frac{3}{4}$%. By the end of the summer this had increased to around 5%, where it remained until the beginning of 1989, when it rose to around $5\frac{1}{4}$%. This pattern reflects the prices of the food, drink and tobacco industry, and in particular a number of special factors associated with food materials prices. Excluding food, drink and tobacco, the upward trend since the beginning of last year is less marked (from $4\frac{3}{4}$% in January 1988 to around $5\frac{1}{2}$% now), though the current rate of increase is rather higher.

The cost structure in manufacturing

Given the persistence of the inflationary trend in manufacturing prices in recent years, there is clearly considerable interest in establishing the primary sources of such pressures. An analysis of the fundamental causes of inflation is beyond the scope of this article: the literature on price determination embraces a wide variety of models, and, in practical terms, disentangling competing influences is a hazardous business. However, through an analysis of the costs facing domestic producers it may at least be possible to discern the extent to which inflationary developments are guided primarily by cost or demand factors.

The first step in this process is to obtain a more detailed breakdown of firms' costs; this is done by recourse to input-output (I/O) tables. These are produced by the Central Statistical Office every five years, with the most

recent volume, published in 1988, covering 1984. Hence the material is a little out of date—although the tardiness of the data need not be a problem: in manufacturing, for example, firms' cost structure appears to have remained remarkably stable over a fairly long period of time (certainly as far back as 1974).

The I/O tables present a series of matrices outlining the pattern of inputs—domestic and imported—into firms in the United Kingdom, disaggregated into around 100 sectors. The output of each sector is classified according to whether it is destined for intermediate consumption (and, if so, the sector for which it is intended), or for final consumption (split by expenditure category).

Taking the manufacturing sector (excluding the food, drink and tobacco industries), it is possible to establish the total inputs into the manufacturing process (including energy, raw materials, capital equipment and a range of other services) together with the value added. Useful though such detailed disaggregation may be on a five-yearly basis, in order to monitor shorter-term developments in costs it is necessary to bundle the disaggregated inputs together to establish the relative importance of a small number of significant inputs for which higher frequency price data are available. In this article, manufacturing costs have been separated into four key elements, which are shown, together with their changing significance over a number of years, in Table A. Note that even when drawn from the I/O tables the cost structure is still something of an approximation. There will tend to be year-to-year variations in the purchases of

Table A
The cost structure in manufacturing
Percentages of total costs

	1974	1979	1984
Energy	8.0	7.4	7.0
Materials (including capital goods)	22.5	23.6	25.9
Labour costs	46.8	43.4	44.4
Other (bought-in services)	22.7	25.6	22.7
	100.0	100.0	100.0

inputs (particularly those which are only purchased irregularly—eg capital equipment) which could shift the calculated weights. Nevertheless, the chosen cost categories are sufficiently wide for this not to lead to any significant degree of inaccuracy.

One further point that should be stressed regarding this breakdown is that it explicitly excludes inputs to domestic manufacturing from other domestic manufacturers. According to the I/O tables, such semi-finished domestically produced inputs accounted for around 22% of all manufacturing costs in 1984 (although the exact figure tends to vary according to the degree of disaggregation within the manufacturing sector: the greater the detail, the higher the share). This exclusion is necessary to avoid double counting, and the approach is consistent with the manufacturing price data calculated by the Business Statistics Office which are also assembled on a consolidated basis.

The data used as indicators of the relevant manufacturing costs are drawn from published sources: the prices of energy and materials are those presented by the Business Statistics Office in their index of input prices to manufacturers, while the data for manufacturing unit labour costs are based on Department of Employment estimates. The measure of 'other' costs, however, proved more problematic, as this element embraces all non-manufacturing, non-energy costs (thus incorporating services as diverse as distribution, construction, banking, telecommunications and transport).

As no single price of such services is available, unit labour costs in the service sector are used instead. While it is not clear that the available data (especially for productivity, which is a difficult concept to measure in this area) are sufficiently robust to be utilised in this fashion (and even if the data are more or less correct there may well be significant movements in profit margins in services in the short run which could make any price based solely on labour costs rather unrepresentative), the assumption may be defended on the grounds that, in the long run, changes in the price of services will be unlikely to deviate from the changes in the cost of service provision. The growth rate of this particular measure has remained stubbornly high—largely, it would seem, because nominal earnings in the sector appear to grow broadly in line with those in manufacturing, while productivity growth remains rather poorer (particularly in times of cyclical upswing).

One other aspect of costs may merit a brief mention, namely the role of indirect taxes. The I/O tables show that a certain proportion of manufacturers' costs comprise indirect taxes; and data are available to indicate the form that the taxes might take (eg local authority rates; VAT; protective duties; hydrocarbon duties; the gas levy; and other residual taxes and subsidies). Given any increase in such taxes, there would probably be some impact on prices; thus to derive an appropriate margins measure, indirect taxes should be taken into account. However, the calculation of an (average) indirect tax rate relevant to manufacturers is subject to even more uncertainty than the other elements of the margins calculation. Furthermore, it is likely to be the change in indirect taxes that matters most from the point of view of inflation; but the assumption is made that manufacturers (outside the food, drink and tobacco industries) are less affected by those (important) taxes which change irregularly (eg VAT, excise duties), while the other elements are likely to move in line with inflation more generally (or at any rate, not to deviate from general inflation by an excessive amount).

Profit margins

Table B presents the contributions of the cost components described above, where the contribution of each element is calculated as its rate of change, weighted by its importance in total costs. It is clear that, uninterruptedly since 1982, the total of these contributions has fallen well short of the change in manufacturing prices. The residual,

Table B
Contributions to output prices in manufacturing[(a)]
from changes in cost components
Percentage points

|	Labour productivity (increase −)	Labour costs	Unit labour costs	Input prices	Bought-in services	Margins (residual)	Output prices
	1	2	3=1+2	4	5	7−3+4+5	7
1980	1.8	8.0	9.9	3.7	5.2	−3.4	15.4
1981	−2.0	6.3	4.2	2.9	2.7	−2.4	7.4
1982	−3.0	4.4	1.3	2.3	1.1	2.2	6.9
1983	−3.8	3.7	−0.1	2.6	0.9	2.0	5.4
1984	−2.7	3.4	0.6	3.0	1.0	0.5	5.1
1985	−1.4	3.5	2.1	1.0	1.2	1.4	5.7
1986	−1.5	3.1	1.6	−3.4	1.0	4.9	4.1
1987	−3.1	3.4	0.2	1.7	0.9	1.6	4.4
1988	−2.5	3.5	1.0	1.6	1.4	0.8	4.8

(a) Excluding food, drink and tobacco.

as shown in the table, is ascribed to developments in domestic profit margins. On this basis, growth in profit margins may have accounted for over 13 percentage points of the 36% increase in manufacturing output prices since 1982.

It is clear that, on this measure at least, margins have made a less significant contribution in the past year, following their very large contribution in 1986 (and, to a lesser extent, 1987), when the growth of output prices slowed significantly less than expected, at a time of sharply falling oil prices. The total margins contribution in 1987–88 has been revised down by around 1 percentage point in the light of revisions to the labour force data.

The rapid growth in margins in 1986 has been explained in terms of manufacturers' expectations of future reversals of the fall in input prices, with the implication that manufacturers probably price on the basis of some long-run normal (or trend) input price. Such rationalisation has since received only partial support, however, with margins widening less as costs have recovered, but with no significant narrowing yet apparent.

Chart 1 presents an alternative means of examining developments in margins. The measure used is calculated as the ratio of price to cost indices, and its reliability as an indicator of margins may be gauged by comparing the

Chart 1
Ratio of price to cost indices in manufacturing [(a)]
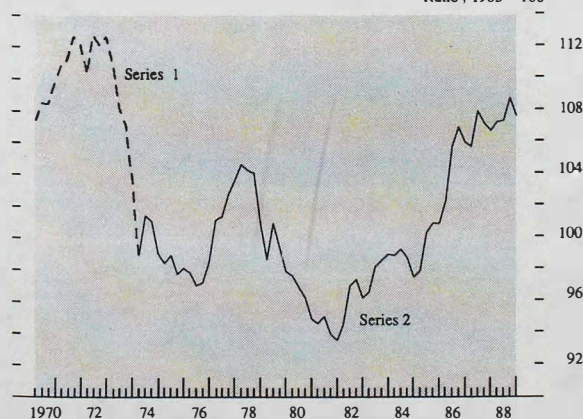
(a) Figures prior to 1974 are based on an alternative measure of input prices.

figures with an equivalent measure of margins, based on actual profits and costs, which can be obtained from I/O tables at the reference date: as the benchmark ratio fell by 1½% between 1979 and 1984, while the ratio of price to cost indices fell by around 1%, it would appear that the latter is an acceptable alternative.

The ratio clearly illustrates the strong and sustained increase in manufacturers' margins since the early 1980s—although once the latest revisions are included, it appears that the rise has not yet been sufficient to push margins above the the levels recorded during the cyclical upswing in the early 1970s. However, the comparison is subject to statistical difficulties, since the input price data used in the construction of margins begin only in 1974, and in the preceding four years an estimate (based on trade prices, and described below) is used instead. Given that the utilisation of employed factors is currently thought to be around the levels recorded in the early 1970s, and given that competitiveness, too, is broadly similar, it is arguable that the level of margins should currently be at, or close to, its previous peak.

Economy-wide margins

The increase in manufacturers' margins in recent years has been part of a general trend towards enhanced company profitability. The rise in industrial and commercial companies' (ICCs) rate of return on capital

Chart 2
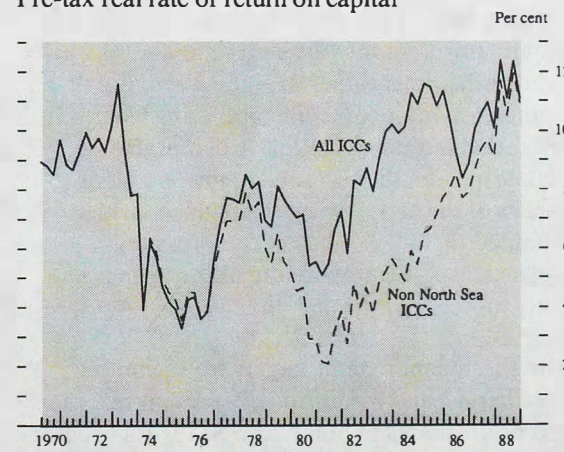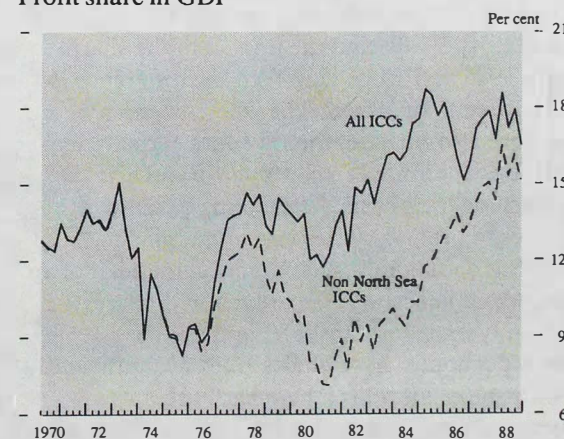Pre-tax real rate of return on capital

Chart 3
Profit share in GDP

employed (Chart 2) and the increasing share of corporate profits in GDP (Chart 3) has been reported regularly in the *Bulletin*. In an accounting sense the rise may be traced to simultaneous increases in output and profit margins. It is noteworthy that in both cases the increase in profitability has been sufficient to return the relevant measures to the levels last achieved in the early 1970s.

Chart 4
Domestic margins
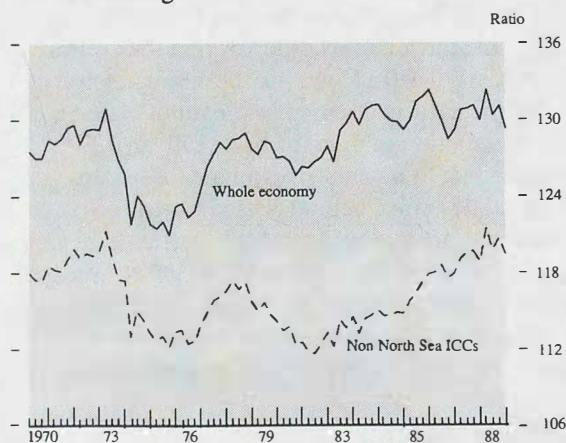
The behaviour of margins in the *whole economy* is illustrated in Chart 4. The measure is probably the closest approximation to a genuine margins concept that it is possible to obtain from national accounts data. The numerator is supplied by the CSO's corporate profits data (together with half of total self-employed income, which is taken to represent the profits element in such activity); and the denominator is simply the sum of total employment income, total imports, and the remaining 50% of self-employment income. In comparing Charts 1 and 4 it is clear that, although the levels of margins in both manufacturing and the whole economy are at, or near, their peaks of the early 1970s, the paths by which they have attained these levels has been noticeably different. In particular, the growth rate of the former has been distinctly more rapid through the 1980s.

This apparent discrepancy stems largely from changes in the oil price. Charts 2 and 3 additionally present real rates of return and profit shares of non North Sea ICCs, where the pattern of growth is almost exactly analogous to the developments in manufacturing. The charts illustrate particularly clearly the impact of the rising oil price in the late 1970s and early 1980s, and the impact of the sharp fall in price in 1985 and 1986. However, the difference is not exclusively due to oil prices. The whole-economy margins measure also includes the revenues earned by public authorities and financial companies, and also attempts to include their costs. Attempting to remove these influences to produce a measure of margins relevant to non North Sea companies is inevitably something of an approximation and hence these figures should be treated with considerably more circumspection than the whole-economy margins; nevertheless they are sufficiently robust to confirm the view that there has been an economy-wide increase in margins.

Retailing—a possible exception

Although there has been an undoubted expansion of margins across the economy, there have been exceptions in individual sectors. In particular, work at the Bank suggests that retailers' margins actually fell fairly steadily before 1985, since when the rate of decline appears to have slowed.

It was noted above that the non-housing RPI has tended to grow more slowly than the all-items RPI of late. By excluding the prices of a variety of other goods and services, it is possible to obtain an index of the price of goods actually sold by retailers ('retailed' prices), which appears to have been even more subdued. Indeed this has been a feature of recent years, probably owing to the rather faster rate of unit labour cost growth in the service sector as a whole than in retailing or in manufacturing. As in the manufacturing case, an index of retailers' costs was calculated by means of weights derived from I/O tables and a variety of published price and cost series. In this case, retailers' costs are taken to include the wholesale purchase prices of retailed goods, together with the additional costs borne in the process of retailing (eg labour costs etc).

Table C
Contributions of costs to 'retailed prices'
Percentage points; changes on same period a year earlier

	Retailers' unit labour costs	Energy etc	Food, drink and tobacco products	Imported manu-factures	Domestic manu-factures	Other domestic costs	In-direct taxes	Margins (residual)	'Retailed' prices
1985	1.2	0.1	1.2	1.2	0.9	0.9	0.9	−1.7	4.7
1986	0.7	−0.5	1.2	0.5	0.6	0.7	0.8	−0.3	3.7
1987	0.4	—	0.8	0.8	0.7	0.6	0.3	−0.8	2.8
1988 Q1	0.5	−0.1	0.6	−0.2	0.7	0.9	—	0.5	2.9
Q2	0.5	—	0.9	0.3	0.7	1.0	0.4	−0.3	3.5
Q3	0.4	0.1	1.3	0.5	0.8	1.0	0.3	−0.3	4.1

The recent contributions of costs to retailed prices are shown in Table C while retailers' margins are shown in Chart 5. Taking the 1980s as a whole, cost increases have been widely spread, with no single element tending to dominate. From 1985, it is clear that a variety of factors contributed to a slowdown in the rate of growth of costs:

Chart 5
Ratio of price to cost indices in retailing
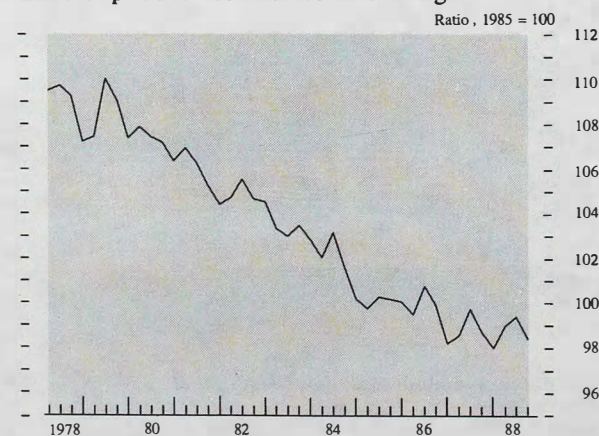
a generally strong exchange rate, together with weak commodity prices, restrained the growth in import prices; the weakness in oil prices significantly reduced the contribution of energy costs; while rapid growth in productivity (in retailing, manufacturing and the rest of the economy) restricted the impact of rising nominal wages on domestic costs. During 1988, however, some of these favourable influences appear to have diminished, or even reversed.

The explanation of the weakness of retailers' margins is probably to be found in the rapid growth in retailing capacity over the past few years. Although demand has been buoyant, the growth in new retail developments led to keen competition in the early 1980s. While the expansion of retail supply has continued in the past two years, the exceptional growth in retail sales appears to have been sufficient to restrain the fall in margins—although given the continued planned expansion of retail floorspace and the prospect of a steady slowdown in sales growth, the presumption must be that margins could weaken still further.

The above measure of retailing margins is by far the *least robust* of the margins measures presented, and should thus be treated with some caution. The uncertainties surrounding the calculations are highlighted by examining data on margins drawn from other sources. Table D presents data on sectoral margins drawn from company accounts by Datastream Ltd. Note that, unlike the data used above, the figures in Table D are not presented on a *consolidated* basis, but are the ratios of simple aggregates across all reporting firms in specific sectors.

The figures for all companies confirm the general trend towards widening margins (with the obvious exceptions of oil and gas—as noted above—and electronics) but also emphasise the disparity in the relative rates of growth. However, the worrying feature of the Datastream figures is the fact that, on the basis of published accounts by large companies (in the stores and food retailing sectors), retailers' margins are shown to have *widened* almost continually since 1980. The difference could be explained on the grounds that the data in Table D cover only large companies, and these may be in the position to exert monopoly power over their suppliers, and thus lower their costs relative to the average. However, given that the Datastream figures are drawn directly from companies' accounts, and thus utilise genuine profits and sales figures, there remains the suspicion that the proxy may not be completely reliable.

The determinants of margins

What is clear, from both the measures calculated in this article and those derived from Datastream, is that margins have risen significantly in the 1980s.

Some recent econometric research at the Bank has been directed towards estimating an equation that explains developments in the price of domestic manufacturing output (excluding food, drink and tobacco). The research has been based on a cost mark-up approach with costs defined as *actual* (rather than normalised, or trend) costs—although given that the equation is a dynamic one, and that changes in costs take some time to feed through completely to prices, it may be interpreted as consistent

Table D
Historic cost pretax profit margins: by sector
Per cent

	1980	1981	1982	1983	1984	1985	1986	1987
Agencies	3.90	3.18	2.82	4.07	7.21	7.34	7.36	6.84
Brewers and distillers	7.71	7.57	7.63	8.21	8.38	7.49	8.85	9.91
Building	6.28	6.05	6.09	7.19	7.50	7.06	9.29	10.88
Chemicals	3.92	4.46	3.75	6.67	8.70	7.80	8.60	10.11
Conglomerates	4.95	5.05	4.88	5.70	6.85	8.15	9.05	9.87
Contracting	3.62	3.85	4.15	3.71	4.03	4.04	5.17	6.71
Electricals	3.79	5.14	4.89	5.19	5.52	4.89	4.98	5.20
Electronics	9.53	9.83	11.45	11.63	10.92	9.29	9.08	9.86
Food manufacturing	3.70	4.09	3.85	4.08	4.29	3.98	4.72	6.10
Food retailing	2.75	2.84	2.90	3.39	3.66	3.90	4.45	5.03
Health and household products	8.11	9.97	10.81	11.47	11.78	12.65	16.22	19.62
Leisure	5.73	5.76	5.46	6.23	6.20	6.16	7.57	10.10
Mechanical engineering	3.98	3.66	3.00	4.22	4.83	5.14	5.99	6.55
Metals and metal forming	2.37	1.93	2.57	3.50	4.43	4.61	5.97	7.00
Miscellaneous	4.37	4.35	4.23	4.77	4.79	5.20	6.26	8.34
Motors and distributors	− 1.41	− 0.77	− 0.04	1.66	1.86	2.67	1.12	4.29
Oil and gas	12.94	9.29	7.75	7.79	8.64	8.39	6.34	7.81
Other industrial materials	5.86	5.69	4.62	6.87	7.68	7.77	9.74	10.54
Packaging and paper	3.95	4.41	3.87	4.66	5.05	6.22	7.55	8.13
Printing and publishing	4.17	5.22	4.13	6.85	7.89	8.23	10.45	13.27
Shipping and transport	3.32	2.24	1.08	2.06	2.88	4.91	5.47	7.92
Stores	6.01	5.59	5.17	6.65	6.95	7.61	8.28	8.38
Telephone networks	..	26.28	30.85	26.54	19.86	22.18	22.97	23.04
Textiles	2.29	3.93	4.31	5.96	6.30	6.43	8.37	8.84
Capital goods	3.53	3.84	4.19	5.24	5.71	5.76	6.36	7.74
Consumer goods	4.77	5.05	4.92	5.61	5.87	5.90	7.02	8.24
Other groups	4.14	4.09	3.69	4.79	5.46	5.87	6.77	8.79
Total — excluding oils	4.19	4.46	4.43	5.36	6.15	6.42	7.38	8.75
Total — including oils	**5.71**	**5.37**	**5.09**	**5.91**	**6.72**	**6.87**	**7.19**	**8.59**

.. not available.

with the view that firms tend to price off longer-run measures of costs.

The mark-up is dependent on both the level of international competitiveness and capacity utilisation (a specification that has echoes in most of the other major macroeconomic models of the United Kingdom). The importance of competitiveness is clear: as competitive pressures increase, firms would be expected to restrain their prices to maintain market share (as, for example, exporters may hold foreign currency prices stable even at times of domestic appreciation—although this tends to occur mainly when the appreciation is expected to be reversed at some future date). The capacity utilisation term is designed to capture firms' willingness to supply, which is expected to diminish as factor utilisation rises (ie output increases for given factors of production)—especially where the rise in output is expected to be reversed.

The estimation of the equation followed the Granger-Engle two-step co-integration approach. The first stage involved the search for a long-run solution, deviations from which then acted as an error-correction term in the search for a more fully specified dynamic framework.

Estimating from the second quarter of 1973 to the final quarter of 1985 yielded a long-run solution in which prices were a homogeneous function of three cost components[1] with additional influences from levels of competitiveness,[2] and capacity utilisation.[3] Note that the discrepancy between the estimated weights on the cost components and those calculated from I/O tables mainly reflects the fact that the former represent marginal effects, while the latter represent average contributions.

Incorporating the long-run solution into a dynamic framework and, in particular, including additional short-run labour cost, utilisation and input price influences produced an equation which both fitted the data extremely well within the sample period and predicted developments over the subsequent three years (to the end of 1988) relatively well—except in 1986.

The tracking performance is presented in Table E. The contributions to the growth in output prices in this table should not be confused with those presented in Table B. The former were based entirely on I/O weights and were calculated in a purely static sense, with margins (which may be thought of as current cost margins) derived as the residual. In Table E the contributions are calculated using the estimated price equation which introduces lags into

Table E
Estimated contributions to the growth in output prices

Percentage points of change in output prices

	Unit labour costs	Input price proxy	Bought-in services	Competi-tiveness	Capacity utilisation	Residual	Output prices
1980	9.3	3.0	5.7	−2.3	−1.2	1.0	15.4
1981	8.7	1.3	7.1	−3.1	−3.6	−3.0	7.4
1982	2.7	0.8	5.0	−1.0	0.5	−1.1	6.9
1983	−0.4	0.2	2.1	1.1	1.6	0.8	5.4
1984	−0.6	1.1	1.1	1.4	2.4	−0.2	5.1
1985	1.3	1.0	1.4	1.0	1.7	−0.5	5.7
1986	2.7	−4.7	1.8	—	0.1	4.1	4.1
1987	0.8	−0.4	1.7	0.7	0.1	1.5	4.4
1988	0.6	0.9	1.7	0.3	1.3	—	4.8

the calculation: in this case the resulting margin (which is more in the nature of a historic cost measure) should be explained, at least to some degree, by the competitiveness and capacity utilisation terms. The residual simply reflects the inability of the equation to explain recent developments in terms of the average behaviour of non-FDT manufacturing companies over the past fifteen years.

On closer examination of the contributions it can be seen that the steady increase in output, and thus in capacity utilisation rates, has contributed significantly to inflation since 1982. Competitiveness factors, too, appear to have contributed to inflation after acting as a strongly negative influence in the early 1980s. The cost contributions are not too dissimilar from those in Table B, with the sharp disparity between costs and prices in 1986 clearly not explained satisfactorily. However, accepting that manufacturers took advantage of a sudden fall in input prices at that time to widen margins, the equation explains developments thereafter in a satisfactory fashion—completely accounting for all of the rise in prices in 1988 (to a considerable extent with reference to the strong increase in capacity utilisation, reflecting the rapid expansion of demand). Indeed, the performance of the equation may be seen as confirmation that, given the present phase of the cycle, margins are not out of line with those that would be expected on the basis of past behaviour.

Conclusions

In recent years profit margins have undoubtedly accounted for a significant part of the increase in prices—perhaps as much as a third. But over the last two years the tendency of prices to outstrip costs has diminished somewhat as margins approached levels last seen in the early 1970s. However, tight monetary policy, through its effect on the exchange rate and aggregate demand, and hence on competitiveness and capacity utilisation, may be expected to bring about some narrowing of margins in the future.

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(1) Unit labour costs in manufacturing (50.3%); non-manufacturing unit labour costs (38.4%) and input prices (11.3%), where input prices were defined as a weighted average of four import prices—basic materials (18%), manufactures (finished and semi-finished) (58.5%), oil (21.3%) and food (2.1%)—with the weights derived from the Business Statistics Office's input price index. This input price proxy tends to move broadly in line with the BSO input price series (used in the calculations earlier in the article); however, the two series did diverge somewhat in 1988.

(2) Defined as the ratio of manufacturing unit labour costs to overseas unit labour costs, with an elasticity of −0.157.

(3) With an elasticity of 0.9. The capacity utilisation series is based on responses to question 4 of the CBI quarterly industrial trends survey ('Is your present level of output below capacity?') as transformed in a manner suggested by Driver, C, 'Transformations of the CBI capacity utilisation series: theory and evidence', *Oxford Bulletin of Economics and Statistics*, Vol 48, No 4.

Profit margins in the major overseas economies

Manufacturing producer prices in the six major overseas[1] economies rose by 4.0% in the twelve months to February 1988, an increase of 2.5 percentage points over the figure in February 1989; consumer price inflation also edged upwards, from 2.9% to 3.8%. However, this rise in international inflation has occurred against a backdrop of relatively flat unit labour costs and relatively low commodity prices. Trend unit labour costs, for example, have remained fairly steady since the mid-1980s (although actual unit labour costs have been more erratic, particularly in the continental European economies) and import prices have declined substantially outside the United States since the middle of the decade owing to the cumulative effects of falling oil and commodity prices, together with the effect of a lower dollar. The implication is that, as in the United Kingdom, recent upward movements in inflation may have been boosted by widening profit margins in the corporate sector.

Profit margins are here modelled by price-cost ratios and are measured using firms' output prices and costs, where costs comprise strictly unit labour costs and import prices (taxes and other costs are excluded). Labour costs and import prices are weighted according to their long-run elasticities as estimated in the GEM[2] with homogeneity imposed on the coefficients. The elasticities were then cross-checked in some cases where input/output (I/O) tables were available. The relevant weighting structure for the major economies is listed in Table 1.
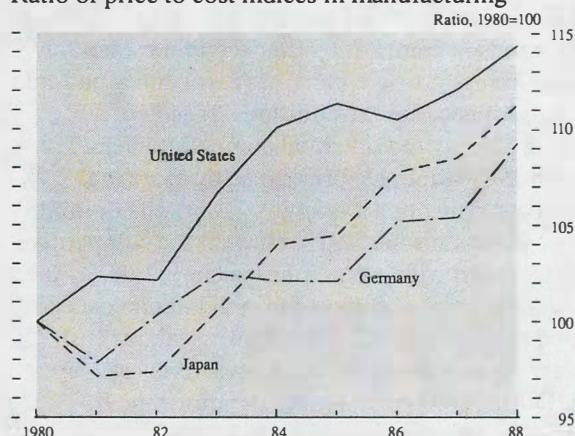
Table 1

United States	Unit labour costs	Weights .76
	Import prices	.24
Japan	Unit labour costs	.70(a)
	Import prices	.30(a)
Germany	Unit labour costs	.60
	Import prices	.40
Italy	Unit labour costs	.41
	Import prices	.59
France	Unit labour costs	.67
	Import prices	.33
Canada	Unit labour costs	.60(a)
	Import prices	.40(a)

(a) Estimated.

The wholesale price index for finished goods was used as a measure of output prices although there are some definitional problems associated with the weight of intermediate goods in the producer price series for different countries. For example, the Japanese wholesale price index includes semi-manufactures whereas the relevant series for the United Kingdom does not.

Ratio of price to cost indices in manufacturing [a]

(a) Major three overseas economies .

The contribution made by individual components of firms' costs to wholesale price inflation is shown in Table 2. The table indicates that although increases in firms' input costs (specifically labour costs) largely accounted for wholesale price increases earlier in the decade, profit margins seem to be the major inflationary source more recently in all countries. The contribution of unit labour

Table 2
Contributions of firms' costs to selling prices

Percentage points

	1981	1982	1983	1984	1985	1986	1987	1988
United States								
Unit labour costs	5.5	4.7	−1.8	−1.5	0.3	0.3	−0.9	0.1
Import prices	1.3	−0.5	−0.9	0.5	−0.5	− 1.0	1.7	0.4
Margins	2.5	−0.2	4.3	3.2	1.1	− 0.8	1.5	2.0
Wholesale prices	9.3	4.0	1.6	2.1	0.9	− 1.4	2.1	2.5
Japan								
Unit labour costs	2.6	−0.6	−1.5	−2.8	0.1	1.4	−1.7	1.1
Import prices	1.1	1.5	−3.0	−0.6	−1.4	−11.9	−3.2	0.2
Margins	−2.9	0.2	3.1	3.3	0.5	2.8	0.7	2.5
Wholesale prices	0.8	1.1	−1.5	—	−1.0	− 7.2	−3.3	−0.3
Germany								
Unit labour costs	2.8	2.0	−0.4	0.7	1.1	1.7	1.6	−0.2
Import prices	5.6	0.3	−0.3	2.4	1.0	− 6.4	−2.4	−0.2
Margins	−2.4	2.6	2.1	−0.4	—	2.9	0.2	3.7
Wholesale prices	6.0	4.8	1.5	2.8	2.1	− 2.4	−0.4	3.3
Canada								
Unit labour costs	5.9	9.5	−0.6	−3.4	1.5	2.5	1.7	0.6
Import prices	4.9	1.4	−0.5	1.8	0.8	− 0.2	−1.3	0.6
Margins	−0.7	−4.7	4.5	5.9	0.4	− 1.4	2.3	5.9
Wholesale prices	10.1	6.1	3.4	4.1	2.7	0.8	2.7	7.1
France								
Unit labour costs	8.4	8.1	4.2	4.6	4.4	1.3	0.5	−2.1
Import prices	6.1	4.0	2.6	3.4	0.7	− 4.8	−0.3	3.7
Margins	−1.0	−3.4	4.3	5.1	−0.9	—	0.8	3.1
Wholesale prices	13.5	8.7	11.1	13.2	4.1	− 3.6	1.0	4.2
Italy								
Unit labour costs	6.6	6.5	4.5	2.0	3.0	1.0	1.1	1.3
Import prices	17.3	7.4	2.8	6.7	4.4	−10.5	−0.9	2.8
Margins	−6.4	0.1	2.6	1.6	—	8.9	2.4	0.5
Wholesale prices	17.4	13.8	9.8	10.4	7.4	− 0.9	2.7	4.3

(1) The United States, Canada, Japan, Germany, France and Italy.
(2) Global Econometric Model, provided by the National Institute of Economic and Social Research.

costs has declined as productivity has strengthened against a background of relatively moderate wage growth in the major economies.

In the *United States*, profit margins have made a positive contribution to wholesale prices in every year since 1981, except 1982 and 1986, both years of relatively weak growth when actual unit labour costs rose. This suggests that US firms may set prices based largely on production costs and stands in contrast to other economies, notably Japan and Germany, where margins (particularly on trade prices) have adjusted for the additional reason of maintaining present and potential competitiveness. For example, in 1987 wholesale prices rose by more than weighted costs; rising profit margins in both the domestic and export sector thus negated somewhat the competitive benefits associated with a declining exchange rate. At the start of 1988, margins contracted as unit labour costs accelerated but subsequently rose again as labour cost growth eased and ended the year in a relatively strong position. During 1988, profit margins contributed approximately 2 percentage points to US wholesale price inflation.

Profit margins in *Japan* and *Germany* have also absorbed to some extent changes in firms' labour costs and have moved pro-cyclically. However, in 1986 the depreciating dollar may have put pressure on domestic manufacturers to cut prices in order to compete with cheaper imports. Nevertheless, the extent of the decline in oil and commodity prices did allow some expansion in margins, particularly in Germany, although they slowed somewhat in 1987. During 1988, import prices and labour costs stabilised and wholesale price inflation appeared to have been almost entirely margin-led. Margins contributed 3.7% and 2.5% to changes in wholesale prices in Germany and Japan respectively. There is also evidence to suggest that German and Japanese manufacturers may be engaging in price discrimination. Exporters' margins have been squeezed particularly in Japan, as the yen has appreciated since 1986, although some turnround has been evident in 1988, especially in Germany.

In *France, Italy* and *Canada*, wholesale price inflation declined consistently throughout the decade until the end of 1986. In 1987, wholesale price inflation picked up, particularly in Canada, and was largely profit-led as labour costs and import prices remained relatively stable. Domestic margins are strong in all three countries although Canadian exporters' margins have declined since 1980, reflecting initially the appreciation of the Canadian dollar but, additionally, its close ties with the US dollar has left less room for Canadian exporters to raise the profitability of exports to the United States to the same extent as its foreign competitors.