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Good inflation figures may allow drop in base rates

But slower money supply growth will be needed over the medium term

Change in twelve-month inflation rate depends on inflation in latest month cf. same month a year ago

As good inflation figures are being reported in the UK, there is a reasonable chance of a token base rate cut before the end of the year. The twelve-month change in the RPIX (i.e., the retail price index excluding mortgage costs, often known as "underlying inflation") is being helped by some special influences at present. It is important to remember that the month-by-month change in "underlying inflation" is equal to the difference between the increase in RPIX in the month in question compared with the same month a year previously. So - if the change in "underlying inflation" in August and September 1998 is to be analysed - they must be compared not with earlier months in 1998, but with August and September 1997.

August and September this year ought to be better than in 1997,

RPIX went up by 0.45% in both August and September 1997, i.e., by 0.9% in the two months together. September 1997 benefited from the reduction in VAT on household fuel from 8% to 5%, but otherwise the two months a year ago were disappointing. In view of the price-cutting pressures at factory gates (as demonstrated in CBI surveys), the discounts now being offered in some parts of retailing and the recent weakness in oil prices, the increase in RPIX in August and September 1998 together could be under 0.5%. If it were 0.5%, the increase in RPIX in the year to September (due to be announced on 13th October) would be 2.2% or 2.3%, less than the Government's target of 2.5%. The Bank of England might still resist pressure for lower interest rates, but it would have to be particularly confident that retail inflation would deteriorate in early 1999. (The Monetary Policy Committee is due to meet on 7th and 8th October.)

but a large drop in interest rates would not be justified, as this would seriously undermine the pound

Quirks in the month-by-month changes in indirect taxes, seasonal food prices and such like explain much of the apparent improvement in retail inflation. The encouraging RPIX numbers are tactical victories in the long-run campaign against inflation; they should certainly not be confused with the campaign itself and do not necessarily imply that the strategy is on the right lines. In some respects the current decline in inflation is puzzling. It has followed three years of high money supply growth, and is occurring despite an increase in wage inflation (compared with 1996 and 1997), ample survey evidence of a tight labour market, and the persistence of rather high asset price levels after some years of significant stock market and house price gains. Moreover, the current account of the balance of payments is moving into deficit. The key to the apparently good performance is, of course, the over-valued pound. If the Bank of England now started celebrating sub-2 1/2% RPIX inflation by large cuts in interest rates to, say, 6% or less by spring of next year, the pound would fall heavily and RPIX inflation would move back above target.

Summary of paper on

"Is the UK inflation-prone? If so, why?"

Purpose of the paper

The annual increase in RPIX (i.e., the retail price index excluding mortgage interest costs) went up from 2.5% in January to 3.2% in May, putting consumer price inflation somewhat higher in the UK than in the rest of Europe. The paper considers whether the UK is more inflation-prone than other industrial countries.

Main points

- * The UK's inflation record has been unsatisfactory compared with its peer group (i.e., the other leading industrial nations) for over a generation. (See Chart 1 on p. 4.)
- * Two main types of explanation of different nations' inflation performance have been proposed - those that focus on *excess money growth* (i.e., the excess of money growth over the rate of increase in output) and those that emphasize *the nations' structural characteristics*.
- * The monetary approach is consistent with the data and validated by standard econometric methods (see pp. 6 - 7), even though many details of the inflationary process are controversial. The theory that changes in inflation depend on "the output gap" is complementary to the monetary approach. (See pp. 8 - 10.)
- * Three structural approaches are analysed,
 - the *first* highlights the structure of the UK labour market and the power of the trade unions (pp.10-11),
 - the *second* says that the structure of the UK housing market stimulated credit growth and excessive consumer spending (p.12), and
 - the *third* argues that the UK has been particularly liable to exchange rate depreciation, because of the structure of its international financial policy-making (p.13) and/or its broader economic structure (i.e., uncompetitive manufacturing).
- * The structural analyses are found to be either conceptually inadequate or to fail when confronted with the data. As the monetary approach is correct, it makes no sense to see UK inflation as in some sense an inherent "national characteristic".

This paper was written by Professor Tim Congdon. It is to appear in a volume *Is the UK inflation-prone?* (ed. Graham Mather), to be published by the European Policy Forum later this year.

Is the UK inflation-prone? If so, why?

Inflation is due to excess money growth, not to "national characteristics"

Recent disappointment on inflation, After the longest period of retail price inflation under 4% a year since the Second World War, a mild upturn in its inflation rate in late 1997 and early 1998 raised the question whether the UK is an intrinsically inflation-prone society. However, worries about the UK's vulnerability to inflation pressures are not new. An adverse differential between inflation in the UK and other leading industrial nations has persisted for a generation.

but the UK's record has been poor for a generation Chart 1 on p.4 presents five-year moving averages of the annual change in consumer prices in the UK and in the world's five other largest economies. (Five-year moving averages are used to iron out uninteresting short-term fluctuations caused by such factors as changes in indirect taxation; the figure for the other five nations is an unweighted average of the national data.) On this basis, the UK's inflation record started to become worse than that of its peer group in the late 1960s and early 1970s. It was very much worse in the 1970s, but improved in the early 1980s. For a few years in the mid-1980s it was in line with the experience of other large industrial nations. Another period of above-average inflation followed in the late 1980s and early 1990s, and a marginal difference is still to be found at the time of writing (August 1998). Chart 2 on p.5 shows the path of UK gilt yields compared with the yields on US Treasury bonds and German government bunds, and reflects the differences in underlying inflation expectations. It has a similar pattern to Chart 1.

Monetary explanations What are the causes of the UK's unsatisfactory record? Two main types of explanation could be offered. The first is founded in economic theory and identifies excessive money supply growth as the culprit for high inflation. More specifically, it appeals to the principle that the value of money is determined largely by its quantity. This principle was clearly enunciated in the first edition of Mill's *Principles of Political Economy*, which was published as long ago as 1848, and has been emphasized in recent decades by the so-called "monetarist school" led by Professor Milton Friedman.(1) This view of inflation determination has overwhelming support from the leaders of economic thought, but is still resisted in the UK by newspaper commentators, politicians and even some economists.(2) The monetary approach is consistent with the notion that excess demand in labour and product markets is the cause of price increases at the microeconomic level.

vs. structural explanations The second approach emphasizes instead that the UK economy has certain distinctive structural features which make inflation more deeply entrenched than elsewhere. The structural approach has less well-established theoretical underpinnings than the monetary analysis and, perhaps not surprisingly, it takes more miscellaneous forms. A number of variants have been proposed, but three will be analysed here. The first argues that the UK's labour market and trade union movement is the key reason for high inflation; the second focuses on the

housing market and sometimes refers to tax arrangements related to it; and the third sees the UK's failure to maintain a stable exchange rate with low-inflation countries as the central failure.

The monetary approach is correct; the UK's relatively poor inflation is not due to its "structural characteristics"

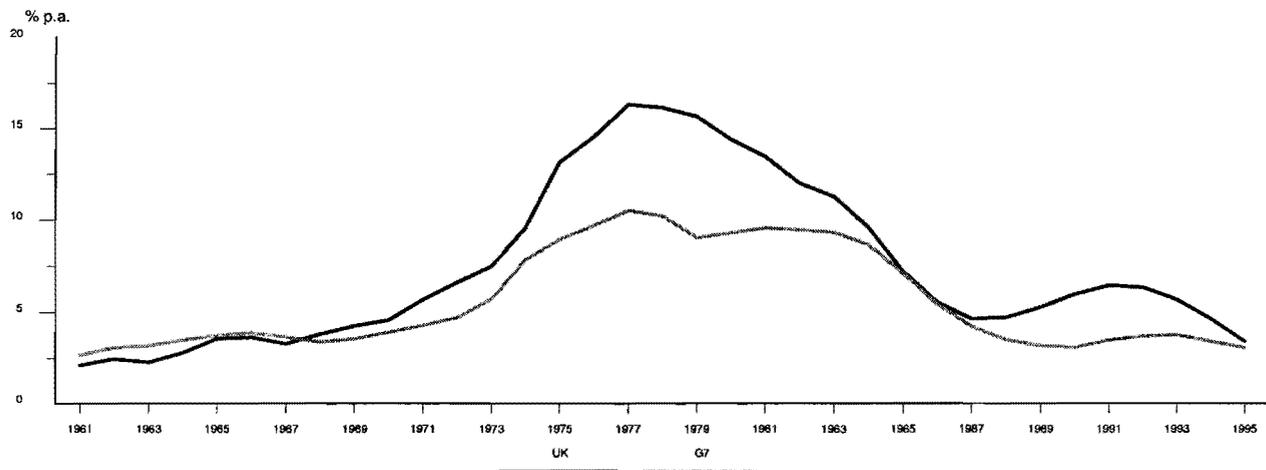
This paper will review the evidence for the monetary and structural approaches. It will show that the monetary approach is correct and that a seemingly independent theory, which emphasizes excess demand, is in fact complementary. Further, the monetary approach is valid in all countries at all times, not just in the UK in the last 25 years. The UK's relatively poor inflation performance is therefore not due to unusual structural features of its economy or society. The UK's poor inflation numbers are sometimes discussed as if they were an established national characteristic, like its shopkeeper mentality or the stiff upper lip of its army officers. But this is mysticism and nonsense. Indeed, to talk of countries' relative inflation rates by resort to their structural attributes or "national characteristics" is drastically to misunderstand the nature of the inflationary process.

Need for analysis of demand to hold money

The standard analysis of the relationship between money and the price level begins with a discussion of why economic agents hold money. The central idea is that they need money in order to conduct their transactions, understood as a sequence of purchases and sales of goods, services and assets. So there has to be a relationship between the quantity of money economic agents want to hold and their current level of transactions. If their current transactions are related to their incomes, the economy-wide demand to hold money ought to be related to national income. (Note that the term "transactions" includes transactions in assets, as distinct from transactions in goods and services. The condition that "transactions" be related to agents' incomes takes quite a lot on trust, particularly in short periods of a few quarters.)

Chart 1: The UK's unsatisfactory record

Chart shows the five-year moving average of the annual change in consumer prices in the UK and the other members of the G7.



Source: IMF *International Financial Statistics*

Demand to hold money, a function of income and "price",

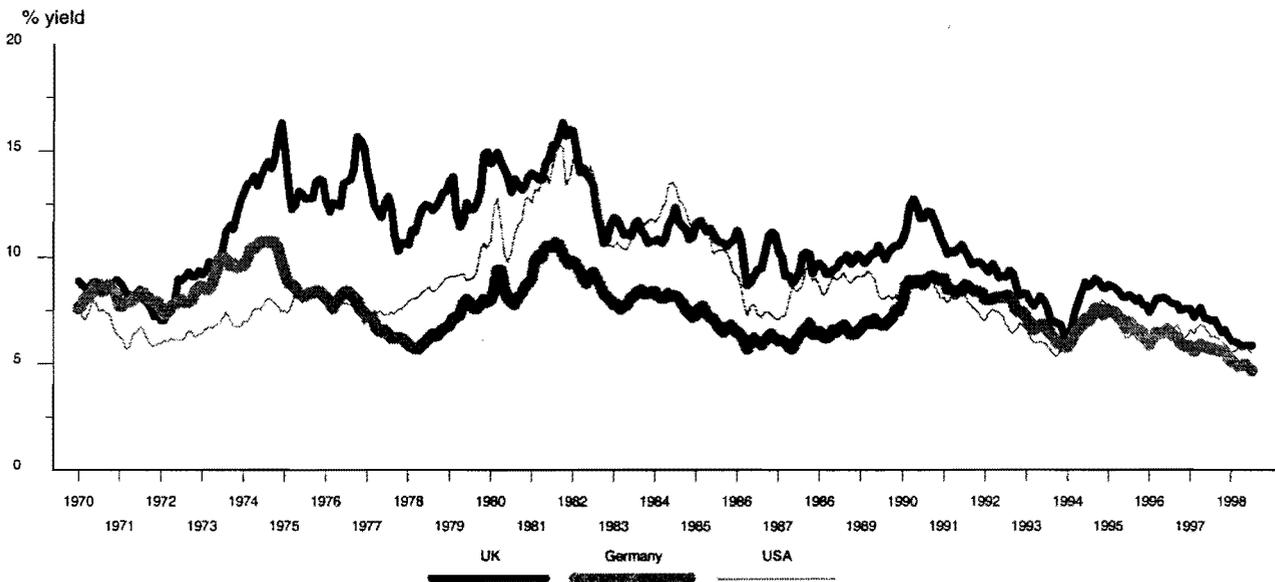
The conventional theory then proposes that the demand to hold money - like the demand for any other product - is predominantly a function of income and "price". In this context the "price" - or opportunity cost - is the return on money relative to the return on the nearest alternative asset. Although the return on money relative to other assets does change over time in most countries, a reasonable generalization is that the convenience provided by money in transactions ought to rise in line with the value of those transactions. The demand to hold money balances ought therefore to increase at a broadly similar rate to nominal national income. The change in nominal national income is the product of two influences, the change in real product and the change in the price level. It follows that the change in the price level can be analysed as the result of the difference between the increase in the quantities of money and real product. Inflation stems from the quantity of money increasing at a faster rate than the quantity of goods and services in real terms (i.e., "real GDP").

but many issues are unresolved

This is a succinct and simplified account of a large and complicated subject. It does not say anything about how the quantity of money is itself determined; it begs the question of how expenditure adjusts in response to excess or deficient money balances (i.e. when the demand to hold money differs from the actual quantity in existence); it does not specify which particular monetary aggregate is relevant in causing expenditures to change; and it is silent on the mechanics of price-setting behaviour at the level of individual businesses and organizations.(3) These subjects remain unresolved and contentious, and the uncertainties and debates undoubtedly give comfort to the proponents of structural theories of inflation.

Chart 2: Bond yields reflect inflation

Chart shows monthly averages of yields on UK medium-dated gilts, 10-year US Treasury bonds and German public bonds (7 to 15 years to maturity.)



Sources: Datasteam, *International Financial Statistics* and *Financial Times*

Econometric exercise to compare excess money growth with inflation in six large countries,

Nevertheless, the monetary account - even in the highly truncated version set out here - has the important merit that it suggests an initial hypothesis for testing. This is that the difference between the UK's inflation rate over the last 25 years and that in the other leading industrial countries should be viewed as the consequence of a higher rate of excess money growth in the UK. "Excess money growth" is the excess of money supply growth over the rate of growth of real GDP. Although the hypothesis is naive almost to the point of being primitive, it is readily tested against the data by familiar econometric methods and the results can be discussed in a rigorous manner. By contrast, the various structural approaches either fail to generate hypotheses that are testable in the same way or, if they do generate such hypotheses, they crumble before the data.

over a medium-term time-horizon

Statistics on money growth, consumer price inflation and GDP growth were assembled for the six largest industrial economies - the USA, Japan, Germany, France, the UK and Italy - over the 30 years to 1995. The chosen concept of money was a broad measure, not a narrow one. This selection was made in the belief that narrow money measures adjust to people's expenditure decisions rather than the other way round and so cannot be relevant to the determination of inflation.⁽⁴⁾ The relationship between broad money and nominal GDP on a one-year time-frame is imprecise and unreliable. Five-year moving averages were estimated of both money growth and the excess of money growth over GDP growth, in the belief that over the medium term the relationship should be more well-defined.

Excess money growth a significant influence on inflation in all six countries

The main results are reported in Appendix 1. (This is not published here. It is available on request from the author. Contact via fax no. 0171 337 2999.) Five-year moving averages of the annual change in consumer prices were regressed on five-year moving averages of the annual increase in a broad measure of money over real GDP. In every one of the six large industrial nations the regression coefficient on the "excess money growth" term was statistically significant. Admittedly, the equations differed markedly between the countries. For every country apart from the UK the regression coefficient had a value of less than one. (In other words, the best-fitting statistical relationship found that, for a 1 per cent increase in "excess money", the most-likely increase in consumer prices was less than 1 per cent.) By contrast, the UK had a regression coefficient of 1.43.

UK relationship different from that elsewhere, but excess money just as important

However, the difference in the value of the regression coefficients between the UK and the other industrial nations does not invalidate the efficiency of excess money growth as a "predictor" of inflation. The square of the correlation coefficient in the UK equation was 0.508, almost exactly in line with the average value of the square of the correlation coefficient in the equations for the five other countries (0.515); the t-statistic (a measure of the significance of the regression coefficient) was 4.869 for the UK and 4.998 for the average of the five other countries. The reliability of excess money growth as a predictor of inflation was therefore much the same in the UK as in the other nations, even though the change in inflation associated with a given change in the excess money growth was higher in the UK.

A very good relationship if unweighted average taken of all six countries

A striking result emerged from taking an unweighted average of the data for the six countries. It turned out that the relationship between the five-year moving averages of inflation and excess money growth for all six countries taken together was extremely good. The constant in the equation was insignificantly different from zero, while the coefficient on excess money growth was 0.85. This is not far from the most straightforward hypothesis about the relationship between money, inflation and output, that the annual inflation rate ought to increase by roughly 1 per cent for every 1 per cent a year that money growth exceeds the increase in output. The square of the correlation coefficient was 0.713, while the t-statistic was 7.56.

But what about causality?

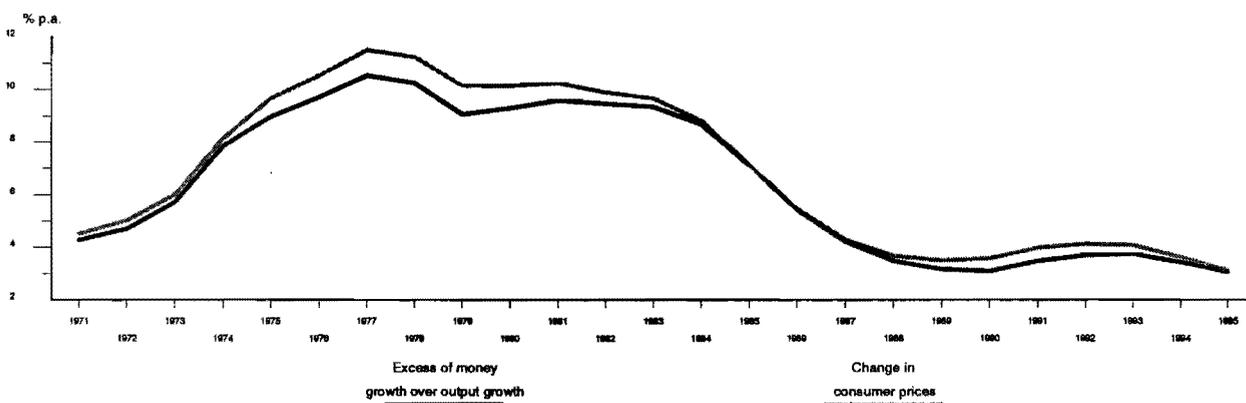
Much more needs to be said about the determination of inflation both in general theoretical terms and at the level of the particular countries. The identification of excess money growth as a good predictor of inflation does not necessarily imply a causal connection between the variables. Critics of the monetary approach might object that the direction of causation runs from inflation to excess money rather than the other way round. Although demanding statistical tests of causality could be conducted, a more persuasive way of defending the monetary approach may be to appeal to the characteristic sequence of events before increases and decreases in inflation.

Links between inflation and the output gap

Increases in inflation usually occurred when the level of output was above its trend (i.e., when the so-called "output gap" was positive) and decreases when it was beneath trend.⁽⁵⁾ This prompts the question of how the fluctuations in output around its trend are determined, which is itself a large and controversial subject. However, a standard pattern in all the countries under consideration was that above-normal asset prices - as symptomized, for example, in stock markets and markets in commercial real estate - tended to stimulate

Chart 3: Money, output growth and inflation in the six leading industrial nations

The chart relates to the USA, Japan, Germany, France, the UK and Italy; it shows the unweighted averages of the five-year moving averages of the six nations' annual rates of excess money growth and inflation; "excess money growth" is the excess of broad money growth over GDP growth and inflation is the change in the consumer price index.



Source: IMF *International Financial Statistics*

higher-than-trend growth in expenditure. Assuming no offsetting change in net exports, higher-than-trend growth in expenditure leads to a reduction in a negative output gap or an increase in a positive output gap. So either inflation falls more slowly than it would otherwise have done or it increases more rapidly.

raises question of determinants of cyclical output fluctuations

An implication is that asset markets and the markets for goods and services are linked. The determination of the prices of capital goods (and of claims to capital goods such as financial securities) in asset markets plays a central role in the cyclical determination of output and, at a further remove, of prices at factory gates and in the shops (i.e., of the producer and consumer price indices in which most analyses of inflation are framed). But that identifies a prior question, namely the causes of cyclical fluctuations in asset prices. Such fluctuations seem disproportionate and unjustified when compared with changes in long-run asset returns. For example, large cyclical movements in stock market indices contrast strangely with the well-attested long-run stability in the ratios of company profits and earnings to GDP.

Asset price movements - affected by financial sector money - may be crucial,

However, they are not disproportionate and unjustified when compared with changes in the money holdings of financial institutions and companies. In the course of the business cycle the amplitude of the changes in these sectors' money holdings is far greater than the amplitude of the changes in the personal sector's money holdings.(6) A plausible conjecture is that the oscillations in asset prices reflect agents' attempts to achieve portfolio equilibrium, including - vitally - the right balance between their money holdings and the value of their assets. These attempts are particularly the task of the financial sector, although every wealth-holder is involved to a degree (7); they would be simple enough if the growth of money were stable over time, but they are complicated by the dramatic scale of the fluctuations in financial sector money.

with money therefore having key causal role in the cycle

In summary, a typical business cycle sees excess or deficient money concentrated in the financial and corporate sectors. These fluctuations are associated with large swings in asset prices, as agents try to maintain equilibrium between their money holdings and their wealth. The asset price swings are powerful stimulants or retardants of economic activity, and motivate the departures in the growth of demand from its trend rate and in output from its trend level. So, largely via its effects in asset markets, money plays a causal role in the business cycle and in the determination of inflation.

Notion that money is caused by cycle becomes incoherent

The sequence of events outlined in the last few paragraphs is basic to defending the monetary approach to inflation. Crucially, an analysis which inverts the sequence of events is incoherent to the point of being nonsensical. It is difficult to see the underlying economic logic of a story in which the high inflation characteristic of the over-heating phase of the cycle is responsible for the previous asset price inflation which has caused the earlier acceleration in the growth of financial sector money. That is not the way that people, companies and financial institutions behave. More generally, the claim that changes in the money supply are caused by changes in expenditure (and so do not have independent causal relevance to inflation) needs to be precise about the

microeconomic decisions of the agents involved. When it tries to be precise, it falls apart and has to be rejected.

when the temporal sequence of events and sectoral behaviour patterns are discussed

The discussion of the temporal sequence and sectoral behaviours which form a typical business cycle cast validates an emphasis on money as the cause of inflation. However, the discussion has also suggested an apparently alternative hypothesis, which pivots on the proposition that the change in inflation is a function of the output gap. It is indeed true that, when annual data are used, the output gap is a better predictor of the change in inflation than the excess of money growth over GDP growth.⁽⁸⁾ As the future rate of inflation is the current rate plus the change in inflation, another theory of inflation appears to be at work. Ostensibly it is different from and perhaps superior to the monetary version.

But what about the "inflation gap theory"?

Key issues here are the length of the time-horizon over which different causal processes unfold and the degree to which a particular "cause" is the ultimate one in the analysis of inflation. In this context certain well-known features of inflation need to be mentioned. In any one country the average rate of inflation in successive business cycles varies between them, while in international comparisons some countries have inflation rates which are continuously higher than in others over long periods. These long periods - in which countries become categorized as well-behaved or delinquent in their inflation records - may run into several decades and span a number of cycles.

The output gap useful in understanding intra-cyclical inflation change,

But - as a matter of logic - the concept of the output gap is unlikely to be of much help in interpreting these features of inflation. In comparisons of inflation across business cycles in one country the average output gap in any one cycle must - almost by definition - be quite small. Indeed, over several cycles it must be close to nil. A different analytical technique is evidently required. A reassuring feature of the monetary approach is that the excess of money over output growth varies, sometimes by large amounts, between cycles.

but in cross-cyclical comparisons excess money is needed as explanation

Meanwhile in international comparisons over long periods an appeal to the output gap may again be logically untenable. To use the output gap - or some other measure of the pressure of demand - as the variable which explains inflation differences between nations over many decades implies that there can be permanent (or, at any rate, quasi-permanent) differences in the cyclical intensity of demand. But the notion of permanent differences in cycles is a contradiction in terms. This point has particular pertinence for the present paper, as its purpose is to find the reasons for the UK's inflation-proneness over a period of 25 years. In fact, this 25-year period was marked not only by greater volatility in demand and output in the UK than in the six other large industrial countries under consideration, but also by rather high unemployment compared with them. No tricks of data manipulation can allow the inference that, on average, the UK had higher demand pressure than elsewhere.

This is not to deny that the output gap is a useful variable in the cyclical analysis of inflation; it can play a role in a short-run theory of inflation determination.

Output gap adds insight in short-run analysis, but over medium and long runs "money matters"

But - as the time-horizon extends to the medium and long runs, and as it incorporates several cycles - the focus should instead be on the excess of money supply growth over output growth. In any case monetary and excess demand theories of inflation are not in competition. They are both "causal" theories, but the monetary theory is the more fundamental and more general. It is more fundamental in that money lies further back in the chain of causation; it is more general in that it can be applied not just to the short run and the current cycle, but to the medium and long runs, and to the comparison of inflation over many cycles in a large number of countries.

Three structural theories under review

What, then, about the structural theories of the UK's relatively high inflation? In the 1970s a large academic literature appeared on the connection between, on the one hand, trade union power and indicators of union "pushfulness" (such as the number of days lost through strikes or the proportion of the workforce belonging to trade unions), and, on the other, wage increases and inflation.(9) The main policy conclusion was that direct control of wage increases, through a statutory incomes policy, was the right way to curb inflation. In the 1980s the Thatcher Government rejected incomes policies and instead reduced trade union power by legislative reform; it also concentrated on monetary control as the efficient means of combating inflation. Despite many problems in the implementation of monetary control, inflation did fall in the early and mid-1980s. The academic literature on trade unions and inflation dried up, while advocates of incomes policy became silent. However, some commentators still identify the structure of the labour market as a source of inflationary pressure. For example, Mr. Roger Bootle has claimed in his book on *The Death of Inflation* that the reduction in trade union power is one reason for the low inflation of the 1990s.(10)

1. Structure of labour market to blame, especially because of over-mighty trade unions

But no relationship between numbers of days lost in strikes and inflation

But such claims are necessarily impressionistic and inconclusive. At the level of careful statistical analysis, hypotheses involving the structure of collective bargaining are of little value in understanding year-by-year fluctuations in inflation or, indeed, the behaviour of inflation over longer periods of time. The series for the number of working days lost in strikes since the 1960s has three peaks, in 1972, 1979 and 1984. The 1972 and 1984 peaks were both due to strikes in the coal-mining industry. (The 1972 miners' strike accounted for 45% of the 24m. days lost in that year and the 1984 miners' strike for over 80% of the 27m. days lost.) There is no clear relationship with inflation, since 1972 was a year of moderate inflation well before the next cyclical peak in 1975, and 1984 was in the middle of a long period of falling inflation extending from 1980 to 1986.

or between union membership and change in inflation

The proportion of the workforce in trade union membership rose in the 1960s and early 1970s, usually by less than 1% per cent a year. It peaked at over 50% in the late 1970s. It then declined year after year in the 1980s and 1990s, again often by less than 1% per cent a year. So it has only one peak in the latest 25-year period, while its change both upwards and downwards has been gradual. By contrast, inflation has three well-defined peaks, and its fluctuations have been large and sometimes abrupt. Whereas a chart of trade union membership is

smooth, a chart of inflation is rather jagged. (See Chart 4.) It is particularly striking that the upturn in inflation between 1989 and 1990 occurred after the bulk of the Thatcher Government's trade union legislation was on the statute book.

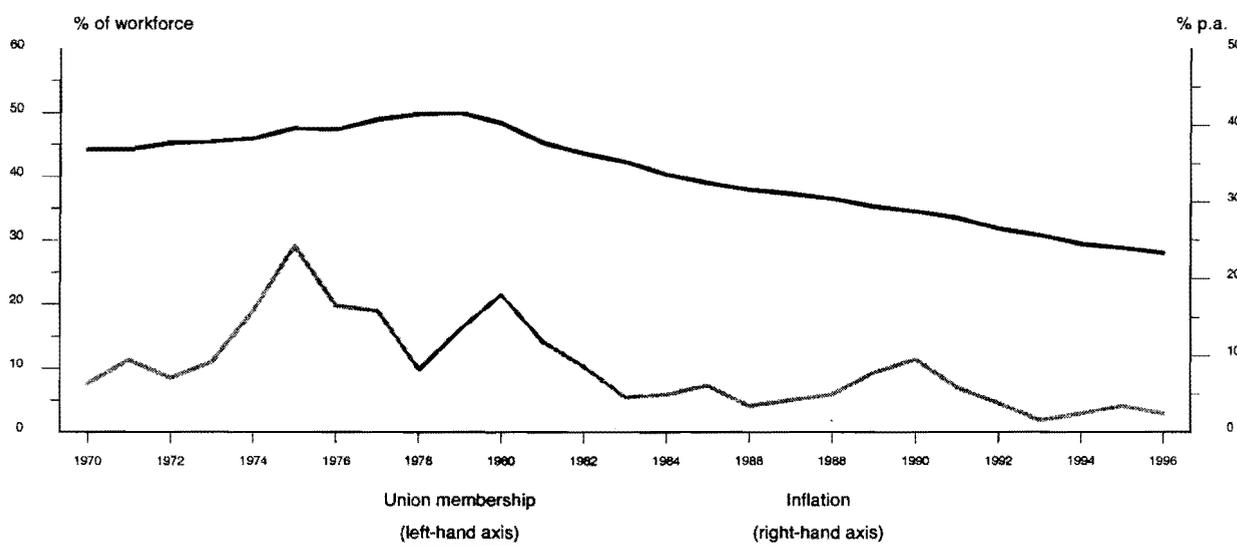
When "union pushfulness" variables are used in econometric analysis, the results are unsatisfactory. (See Appendix 2. Also not published here, but available from the author.) Critics of the monetary approach sometimes resort to complex and abstruse econometric methods to debunk it. But - when a favoured alternative argument is scrutinized with a fraction of the same rigour - it does not reach the starting line.

UK strike record and union power not worse than the international average

Moreover, the UK's strike record and the proportion of its workforce in trade union membership have never been particularly different from international norms, and so cannot have been to blame for its high inflation in international comparisons. In the 1980s and 1990s the UK has had rather "good" labour relations compared with, for example, the rest of the European Union and the average for the OECD area. According to an article in the April 1998 issue of *Labour Market Trends*, "The UK strike rate has been below the EU average since 1986, but rose above the OECD average in 1996 for the first time since 1989."(11) Evidently, if the UK is intrinsically more inflationary than other industrial societies, it is not because its trade unions are particularly powerful, strike-prone or greedy.

As the role of the trade unions in the UK's political economy declined in the 1980s, a quite different non-monetary interpretation of the inflationary process was expressed by some commentators. Its initial premiss was that the UK had

Chart 4: Union membership and inflation



Union membership as a % of working population has one peak; the change in consumer prices has three peaks.

2. Structure of housing market, with supposedly greater owner-occupation than elsewhere

a different housing market from other industrial countries, with a higher ratio of owner-occupation, a greater reliability on mortgage finance and a tax system which gave artificial stimulus to borrowing.(12) With the distinctiveness of the housing market taken for granted, the link between housing and inflation could be pressed in a variety of ways. One argument was that house price inflation generated a positive "wealth effect" on consumption and led to excess demand in the economy; another theme was the boom in housing relied on mortgage credit, which enabled people to spend above their incomes and so added to demand. These points looked plausible in 1988 and 1989, at the peak of a business cycle marked by a national craze of house-buying and mortgage-borrowing. The implied policy recommendation was to end tax relief on mortgage interest, which was widely condemned as a "distortion".

But, in fact, the UK housing market is similar to that in other countries

The trouble with this view is that its starting-point is wrong: it is not true that the UK's housing market is markedly different in structure from those in other industrial countries. In 1990 - even after the excesses of the boom in the late 1980s - the ratio of owner-occupation to all forms of home tenure was 67% in Great Britain, which was less than 82% in Ireland, 80% in Spain, 77% in Luxembourg, 72% in Belgium and Greece, and 68% in Italy.(13) While the ratio of personal mortgage debt to GDP is rather high in the UK by international standards, the ratio of all types of mortgage debt to GDP is not exceptional. (In other countries a larger part of the mortgage debt is owed by corporations who are landlords or who provide company housing.)(14) Finally, tax relief on mortgage interest is common throughout the industrial world, although arrangements vary substantially between countries and from time to time within each individual country.

No worthwhile econometric hypothesis generated by this approach

Even if it were the case that the UK's housing market were unlike that in other industrial nations, a rigorous econometric attempt to relate international differences in inflation to different housing tenure patterns, different ratios of mortgage debt to GDP or to different features of mortgage tax relief fails totally. This is not to deny that the behaviour of mortgage credit is an important element in the inflation process. As with any other new credit extended by the banking system, the result of more mortgage lending is the creation of new bank deposits. The new deposits are part of the money supply and, as such, are relevant to the determination of inflation. But, plainly, the dynamics of the housing market and mortgage credit are then subsumed within the monetary approach to inflation.(15)

3. Structure of international financial relations, leading to frequent devaluations

What, finally, about the view that the UK's disappointing inflation performance has been due to its inability to maintain a fixed exchange rate with a low-inflation currency, such as the deutschemark or the dollar? The difficulty with this line of argument is that it is conceptually incomplete and, hence, unconvincing. It is obviously useless as a theory of inflation at the global level, because the world as a whole does not have an exchange rate with Mars; it also begs the question of why such countries as the USA or Germany have low inflation. If they have low inflation because they control the growth of the

money supply relative to the growth of national output, the monetary approach to inflation continues to rule the roost.

But this view has no conceptual independence if exchange rate are determined by relative money supply growth rates

Indeed, an extension of the domestic theory of money and inflation is that exchange rates should be seen as the relative prices of different currencies. If so, like any other price, they are determined by supply and demand. But what are the relevant concepts of demand and supply? Arguably, they are "the demand to hold the currency in question by domestic and international residents" and "the outstanding stock of money balances denominated in a particular currency, wherever they exist" (i.e., the money supply, on a very broad definition including balances outside the country of issue). In that case, the exchange rate is largely determined by relative money supply growth rates in different countries. It therefore has no independent role in the determination of inflation. It can do some special work in those parts of the economy most vulnerable to international forces (i.e., the so-called "tradables sectors", particularly manufacturing), but only within a general model where inflation is caused by excessive money supply growth.

Monetary approach to inflation is correct

The monetary approach to inflation is correct. The reason that the UK has had relatively high inflation over the last generation is that its money supply growth rate has, on average, been further above the trend growth rate of its output than in other industrial countries. In the public debate a miscellany of other ideas have been heard from time to time, with a welter of references to trade unions, excessive pay demands, mortgage interest relief, credit booms, the exchange rate, a lack of national competitiveness and such like. The only common element in these references is an underlying belief that the structure of the UK's economy is, in one way or another, different from that of other economies. If these structural analyses were right, it might not be sensible either for economists to focus on excessive money supply growth as the cause of inflation or for governments and central banks to regard monetary control as the best means of combatting inflation. But the structural analyses are unreliable. At best, they illuminate aspects of the relationship between money and inflation. Although the essence of the link between money and the price level is simple, its details are often complex and obscure. Discussions of the labour market, the housing market and international pressures may make it less murky.

UK's economic structure is no more "inflation-prone" than other countries

In terms of its structural characteristics, the UK is no more or less inflation-prone than any other country. Indeed, a tendency to have higher-than-average inflation should not be regarded as a "national characteristic", even if that tendency appears to be repetitive and long-standing. Despite a history of currency mismanagement and depreciation, a nation can overcome inflation by applying the appropriate degree of monetary control. Moreover, it can do so whatever the structural characteristics of its labour and housing markets, and it does not have to fix its exchange rate to guarantee the success of the project.

Admittedly, this is not a final answer. The UK's unsatisfactory record of money control in the generation from 1970 may be fact, but the next question is "why

**unless the attitudes
and beliefs of
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"national
characteristic"**

were policy-makers less willing (or less able) to control the money supply in the UK than in the other six countries?". One view is that the policy-making establishment - guided by the UK's economics profession, particularly by economists in leading British universities - did not agree with the monetary approach to inflation.⁽¹⁶⁾ Alternatively and more mildly, key policy-makers may have agreed that inflation had monetary roots, but wanted to pay their respects to the many British academic critics of this proposition. As a result, the official endorsement of the monetary approach was hedged around with so many reservations, hesitations and misunderstandings that in practice policy-makers failed to keep the growth of the money supply under sufficient control. If so, the blame for the so-called "inflation-proneness" of the British economy over a period of 25 years rests on the attitudes and beliefs of a generation of British economists. (Whether these attitudes and beliefs are open to reason and debate, or whether they are an unalterable "national characteristic", are broader questions.)

Notes

(1) The third book of John Stuart Mill's *The Principles of Political Economy* (London: Routledge & Kegan Paul, 1965, originally published in 1848) includes the famous chapter eight entitled 'Of the value of money, as dependent on demand and supply'. The second section of the chapter elaborates the principle, "The value of money depends, *caeteris paribus*, on its quantity."

(2) See, for example, an article by Andrew Scott on 'Does money talk and is it persuasive?', pp. 18 - 21, in the February 1997 issue of *CentrePiece* (London: Centre for Economic Performance). The article claims (p. 20), "There is no evidence that in the period since 1969 M4 has had any predictive role for GDP."

(3) The views taken in other Lombard Street Research's UK publications on these four subjects are as follows:

1. The quantity of money is determined by the amount of credit extended by the banking system, which is strongly influenced by banks' capital adequacy. In modern conditions the level of banks' cash reserves is of little interest, since the central bank supplies cash freely to meet (or "accommodates") the banking system's requirements.

2. Excess or deficient money balances are removed mostly by changes in expenditure (and so the price level of goods, services and assets); they are not removed - except to a limited extent - by changes in the level of the money supply itself. The adjustments of expenditure to excess or deficient money balances are the "real balance effect" in practice. The workings of the real balance effect were explained most rigorously by Patinkin in his classic *Money, Interest and Prices* and are the core of monetary economics. (The real balance effect is not taught in most standard macroeconomics courses in British universities.)

3. Only broad money measures are relevant to the unfolding of the real balance effect, and so to the determination of the prices of goods, services and assets, and also national income; narrow money measures adjust to expenditures and so play no significant causal role in the economy.

4. In the short run changes in inflation are better analysed as a response to excess demand or supply in labour and product markets, than as a response to changes in money supply growth. Excess demand/supply in the labour market can be measured as the difference between the actual and natural rates of unemployment; excess demand/supply in product markets can be measured as the difference between the actual and trend level of output (i.e., the "output gap").

(4) See Tim Congdon 'Broad money vs. narrow money', pp. 13 - 27, in vol. 1, no. 5 *The Review of Policy Issues* (Sheffield: Sheffield Hallam University), 1995. See also 'An open letter to Professor Patrick Minford', pp. 2 - 12, *Lombard Street Research Monthly Economic Review* (London: Lombard Street Research), July 1996.

(5) The implications of this pattern for the cyclical pattern of inflation were considered in 'Inflation is not dead', pp. 2 - 12, *Lombard Street Research Monthly Economic Review* (London: Lombard Street Research), November 1997. The article was reprinted as pp. 44 - 50 in the March 1998 issue of *Economic Affairs* (London: Institute of Economic Affairs).

(6) This point was emphasized in 'Another classic dilemma in British monetary policy', pp. 2 - 12, *Lombard Street Research Monthly Economic Review* (London: Lombard Street Research), August 1997. See, particularly, pp. 5 - 6. The Bank of England has also carried out substantial research in this area. See, for example, R. Thomas 'The demand for M4: a sectoral analysis', parts 1 and 2, *Bank of England Working Paper Series*, nos. 61 and 62, June 1997.

(7) The underlying similarities in all agents' money-holding behaviour were urged in Hicks' celebrated 1935 paper on 'Simplifying the theory of money', particularly in the passage, "my

suggestion can be expressed by saying that we ought to regard every individual in the community as being, on a small scale, a bank. Monetary theory becomes a sort of generalization of banking theory." (Sir John Hicks *Critical Essays in Monetary Theory* [Oxford: Oxford University Press, 1967], p. 74)

(8) Again, contact the author for further details, on fax no. 0171 337 2999.

(9) See, for example, A. G. Hines 'Trade unions and wage inflation in the UK, 1893 - 1961', *Review of Economic Studies*, 1964, and a number of subsequent papers by Professor Hines.

(10) Roger Bootle *The Death of Inflation* (London: Nicholas Brealey, 1996), pp. 36 - 40.

(11) 'International comparisons of labour disputes in 1998', pp. 189 - 93, *Labour Market Trends* (London: Office for National Statistics), April 1998. The quotation is from p. 190.

(12) For example, a pamphlet *An End to Illusions* (London: Demos, 1993) by Alan Duncan, the Conservative M.P., claimed that owner- occupation in the UK "is far higher than in any other European country".

(13) Adrian Coles 'Housing finance - some international comparisons', pp. 15 - 19, in *Housing Finance* (London: Council of Mortgage Lenders), November 1993. See in particular p. 15.

(14) Raymond W. Goldsmith *Comparative National Balance Sheets: a study of twenty countries, 1688 - 1978* (Chicago and London: University of Chicago Press, 1985), p. 126 and p. 180.

(15) The relevance of mortgage credit to broad money growth was noted in 'The coming boom in housing credit', L. Messel & Co. research paper by Tim Congdon and Paul Turnbull, June 1982, which was republished as 'Introducing the concept of "equity withdrawal"', pp. 274 - 87, in Tim Congdon's *Reflections on Monetarism* (Aldershot: Edward Elgar for the Institute of Economic Affairs, 1992).

(16) Martin Ricketts and Edward Shoesmith *British Economic Opinion: a survey of a thousand economists* (London: Institute of Economics Affairs, 1990), *passim*.