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Interest rate "pause" to continue

But UK economy will not grow at beneath-trend rate in 1998

Financial market turmoil and apparent "slowdown" in retail sales to keep interest rates on hold

UK interest rates will not be raised at the next meeting of the Monetary Policy Committee on 5th and 6th November, and it seems fairly certain that they will not increase at the following meeting on 3rd and 4th December. Two new influences will dissuade the MPC from further immediate tightening of monetary policy. The first is the turmoil in financial markets. A fall in share prices is almost never a good reason by itself for changing monetary policy. This is particularly so if a fall occurs after an extended period of stock market gains which have made equities over- priced by long-run standards. However, sudden movements in share prices are relevant to the central bank, if they wipe out the capital of banks and other financial institutions. As the current traumas in East Asia testify, when the banking system's capital has been badly hit by loan losses, credit dries up and money supply growth comes to an end (or may even be replaced by a falling money supply). A vicious spiral may start, with tumbling asset values aggravating the banks' bad debts and intensifying the monetary contraction, which then knocks asset values again.

Secondly, and of more immediate relevance to the British economy, the growth of consumer spending will almost certainly be slower in the final months of 1997 than in the summer. Although the impact of the de-mutualisation windfalls has been much debated, it is clear that they gave a boost to retail sales in the second and third quarters. As this boost fades, retail sales will grow more slowly or perhaps even dip slightly. That does not mean that the underlying growth rate of consumer spending (i.e., the growth rate that would have been observed in the absence of the windfalls) has slowed down, but no one will know for certain until well into 1998. In the interim the MPC has a good pretext for doing nothing.

But cuts in interest rates - as after the stock market crash in October 1987 - might be inflationary and foolish

The more difficult question is whether the interest rate pause will be followed by a rise or fall in interest rates in 1998. After the stock market crash in October 1987, interest rates were reduced "to prevent recession" and gilt yields fell sharply. In retrospect, the move to lower interest rates was a blunder, because it stimulated spending and was one reason that domestic demand increased by 8% (!) in 1988. (Long gilt yields dipped to almost 9% in early 1988, but then climbed to over 11 1/2% in April 1990 as bad inflation news came through.) It is possible that, as in 1987 and 1988, central banks - including the Bank of England - respond to the uncertainties by cutting interest rates, and then regret it as above-trend growth in demand and output continues. The behaviour of the money supply ought to be crucial in their decisions. (To say that "it ought to be crucial" is not to say that "it will be crucial".) So far there is no evidence of a slowdown in money supply growth, implying that interest rates cuts in early 1998 would lead to the same kind of problems as in 1988 and 1989.

Professor Tim Congdon

31st October, 1997

Summary of paper on

"Inflation is not dead"

Purpose of the paper

This paper considers whether the current low inflation rates in the UK are due to "the death of inflation" (because of structural changes to the economy, as claimed by Mr. Bootle of HSBC in a recent book) or should instead be interpreted as part of a business cycle which is largely monetary in origin.

Main points

* **A four-phase theory of the relationship between inflation and the business cycle is proposed. The phases are differentiated by two characteristics, the level of output relative to trend (i.e., the output gap) and the rate of growth relative to trend.**

* **The statistical evidence is that the output gap, not the rate of growth relative to trend, is the dominant influence on the direction of inflation. (For details, contained in a separate appendix, contact Mr. Stewart Robertson on 0171 - 337 2979.)**

* **In two phases of the business cycle the rate of growth relative to trend and the direction of inflation have opposite signs (i.e., above-trend growth is associated with falling inflation and beneath-trend growth with rising inflation).**

* **These apparently anomalous phases may encourage commentators to become over-optimistic at a cyclical "sweet spot" and unduly pessimistic at a subsequent "sour spot". They may misinterpret standard cyclical news as long-run structural changes.**

* **The business cycle is best understood as due to agents' responses to cyclical deviations in real money growth from the long-run path that would maintain monetary equilibrum (i.e., the equivalence of the demand for and supply of real money balances).**

* **The upturn in UK money growth since early 1995 will lead to rising inflation over the next two years, with the increase in the underlying retail price index likely to exceed 4% in 1999.**

This paper was written by Professor Tim Congdon. It will be published in the Institute of Economic Affair's annual publication on *The State of the Economy*.

Inflation is not dead

Sweet and sour spots in the business cycle

Good macroeconomic outcomes lead to talk of "new era", with "death of inflation"

Favourable macroeconomic outcomes in the last few years have surprised many observers. 1997 seems to have been particularly impressive. In the USA growth has been higher than expected at the start of the year, while inflation has been lower. The simultaneous declines in unemployment and inflation have led to conjectures that the economy has entered a "new era" and can now enjoy a "new paradigm" of inflation-free growth. In the UK comment has been more restrained. Even so, inflation in the mid- 1990s was less than widely forecast. It has remained satisfactory in 1997, while unemployment has fallen to the lowest level since 1980. Mr. Bootle of the HSBC Group has written a book on *The Death of Inflation*, claiming that inflation has been permanently weakened, perhaps even brought to an end, by structural changes such as the reduction in trade union power, de-regulation and the intensification of foreign competition.

Paper to argue that good outcomes can be explained by past relationships, with no need to appeal to major structural change

The central argument of this paper is that hopes of a "new era" of price stability are misplaced. On the contrary, the behaviour of output, employment and inflation in recent years can be readily explained - in the context of a simple theory of inflation and the business cycle - by past relationships between the main macroeconomic variables. There is no evidence of a significant break from previous patterns. Further, structural theories of inflation are misconceived and hopes of long-lasting price stability based on them will be disappointed. Instead a monetary theory of inflation is correct. More precisely, inflation is the result of the quantity of money increasing at a faster rate than the trend rate of increase in the quantity of good and services. As money supply growth has been higher in the last two-and-a-half years than in the early 1990s, inflation will be higher in the late 1990s than in the mid-1990s.

Sweet and sour spots to be introduced

The paper starts by proposing a theory of the course of inflation over the business cycle. This account - which is necessarily very stylized - identifies four phases of the business cycle and two exceptional moments. The first such moment is a "sweet spot" of excellent macroeconomic outcomes, which provokes unjustified optimism about the economy's trend performance; the second is a "sour spot" of poor macroeconomic outcomes, which provokes equally unjustified pessimism.

Money has to be integrated in a theory of the relationship between the cycle and inflation

An implicit microeconomic assumption in the first part of the paper is that inflation is determined in goods markets, which appears to suppress the role of money. But money is readily integrated into the economy's cyclical behaviour by recalling a well-known principle of macroeconomics, that the demand to hold real money balances depends in the long run only on real variables. Of these real variables, income is the most important. Phases of buoyant asset prices and above-trend growth in demand may be interpreted as a by-product of excess real money balances, and phases of asset price weakness and beneath-trend growth in demand as a consequence of deficient real money balances. Over periods of several cycles real money balances fluctuate around their "equilibrium" level, which can be estimated by the best- fitting long-run demand-for-money equation.

A theory of the business cycle

Crucial notion of "natural rate of unemployment"

In his presidential address to the American Economic Association in 1967 Professor Milton Friedman proposed that there is only one rate of unemployment ("the natural rate") consistent with stable inflation. He denied the existence of a long-run trade-off between unemployment and inflation. He claimed instead that, when unemployment is beneath the natural rate, inflation rises year after year without limit. A corollary is that inflation keeps on falling indefinitely if unemployment is above the natural rate. In other words, the change in inflation is nil only at the natural rate and is positive (negative) when unemployment is beneath (above) the natural rate. Friedman's proposition was open to debate and has been much criticised. Nevertheless, the statistical evidence is undoubtedly that it comes closer to the truth than economists' earlier consensus, expressed in the famous "Phillips curve", that there is a stable relationship between the levels of unemployment and inflation.

When unemployment is at natural rate, output is at trend level and inflation is stable,

which leads to idea of the "output gap"

The concept of a natural rate of unemployment can be readily assimilated with that of trend output, and harnessed in a theory of the cyclical relationship between output and inflation. The natural rate of unemployment is that at which supply and demand in the labour market are balanced, so that inflation is stable. The trend level of output is to be understood as that where unemployment is at its natural rate. The related concept of an "output gap" can then be proposed. If actual output is above its trend level, the economy has a positive output gap; if actual output is beneath its trend level, it has a negative output gap. The trend rate of output growth is that which can be sustained indefinitely into the future, without changing the value of the output gap. If output starts at its trend level, the trend rate of output growth is that which can continue without causing either strain on productive capacity (and therefore rising inflation) or an increasing margin of spare resources (and therefore falling inflation). Of course, the trend rate of output growth depends on, among other things, the increase in labour productivity and labour force growth.

Four-phase cycle can be described

A stylized account of a "typical" business cycle now follows quickly. The behaviour of the labour market and, in particular, the idea of a natural rate of unemployment are very important in the background, but superficially the two kindred notions of a trend level of output and a trend rate of output growth do all the work. As already explained, inflation is stable when, and only when, output is at its trend level (i.e., the output gap is nil) and output growth runs at its trend rate. More normally, the level of output differs from its trend and inflation is changing, while output growth is faster or slower than its trend rate.

Phase 1: Negative output gap, falling inflation and above-trend growth

For the purpose of the discussion, the starting-point can be a cyclical trough in which output is beneath its trend level. Inflation has therefore to be falling. Neither the government nor the central bank want inflation to fall for ever. In the standard textbook manner, interest rates are reduced, taxes are cut and the politicians boost public expenditure. Output grows at an above-trend rate. Despite the absorption of spare capacity and declines in unemployment, inflation keeps on falling for some time, until the level of output has returned to trend. So phase one of the cycle is characterised by a beneath-trend level of output (i.e., a negative output gap), an above-trend rate of output growth and a declining inflation rate.

Phase 2: Positive output gap, rising inflation and above-trend growth

Unless policy is changed here or something else rather unusual happens to the economy, output growth continues to run at an above-trend rate. The level of output goes above its trend level, perhaps by quite a wide margin, and inflation accelerates. When output is only fractionally above its trend level, the upturn in inflation may be imperceptible. But the higher that output goes above its trend level, the more pronounced is the acceleration in inflation. Phase two of the cycle therefore sees an above-trend level of output (i.e., a positive output gap), an above-trend rate of output growth and a rising inflation rate.

Phase 3: Positive output gap, rising inflation and beneath-trend growth (or falling output)

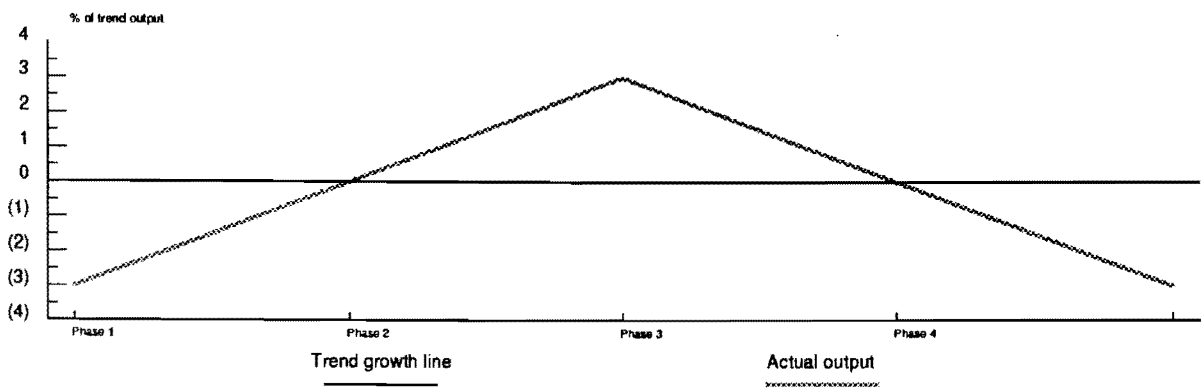
Sooner or later the acceleration in inflation becomes unacceptable. Interest rates are raised, taxes are increased and the politicians curb public expenditure. The rate of output growth falls beneath its trend level, unemployment starts to rise and capacity utilization weakens. However, because the level of output remains above its trend level, inflation continues to accelerate. At best it remains stable at the high rate established in the closing stages of the boom. Phase three of the cycle is marked by an above-trend level of output (i.e., a positive output gap), a beneath-trend rate of output growth and a high, probably rising inflation rate.

Phase 4: Negative output gap, falling inflation and beneath-trend growth (or falling output)

Of course, policy-makers must persevere with beneath-trend growth. Eventually the level of output again falls beneath its trend level and inflation begins to moderate. When output has only just dipped beneath its trend level, this moderation in inflation may be difficult to identify and unconvincing. Output growth may remain beneath its trend rate for some quarters or even years, until the decline in inflation is clearly established. Phase four has a beneath-trend level of output (i.e., a negative output gap), a beneath-trend rate of growth and a falling inflation rate. Eventually inflation drops to a politically

Chart 1: The "typical" business cycle

Chart shows stylised four-phase business cycle. Note that inflation falls when output beneath trend and vice versa.



1. Above-trend growth, falling inflation; 2. Above-trend growth, rising inflation; 3. Beneath-trend growth, rising inflation; 4. Beneath-trend growth, falling inflation.

acceptable rate, monetary policy is eased, interest rates fall and the upswing first phase of the cycle resumes.

The stylized four-phase business cycle can be portrayed in a diagram, with trend output (i.e., a zero output gap) represented by a straight line through the origin. (See chart 1 on p.5.) In the real world the trend level of output is rising over time, at a rate which varies only slightly from one cycle to the next. Chart 2 (see below) - which relates to the UK - shows the fluctuations of output around its trend level, identifies periods when output was above and beneath its trend (i.e., when the output gap was positive and negative). Chart 3 (see opposite) shows the direction of inflation and interest rates during these periods. The correspondence with the theory is not exact, but it is highly suggestive.

Some features of the business cycle: counter-intuitive phases and the sweet spot

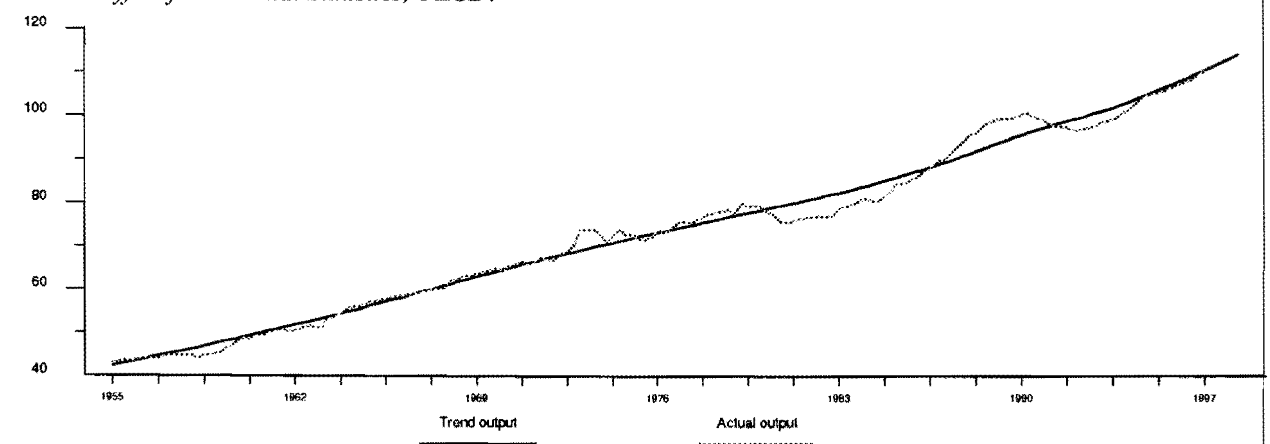
The theory of inflation and the business cycle outlined here builds on simple ingredients. The key empirical relationship is that between the change in inflation and the level of the output gap. A number of statistical tests have been carried out at Lombard Street Research and are reported in an appendix (not published here). The results are broadly as expected, conforming with the earlier empirical validation of Friedman's hypothesis on inflation and the natural rate of unemployment. Crucially, the change in inflation is much better explained by *the level of the output gap* than by *the change in the output gap*.

Crucial that *change* in inflation depends on *level* of output gap, which creates two counter-intuitive cyclical phases

But - despite the simplicity of the theory - it has consequences which at first glance are rather odd. The first is that years of above-trend growth are not necessarily years of rising inflation and years of beneath-trend growth are not necessarily years of falling inflation. In fact, in phases one and three the economy's behaviour is counter-intuitive, because unemployment and inflation are changing in the same direction. The apparently counter- intuitive behaviour is however altogether logical. It is based on the dependence of the change in inflation on the level of, not the change in, the output gap. To repeat, this idea

Chart 2 Actual and trend output in the UK 1955-97

Chart shows the index of actual non-oil GDP (1990 = 100) and Lombard Street Research's estimate of trend GDP. Sources: *Office for National Statistics, OECD.*



- the central motivating idea behind the theory - enjoys clear support from historical data.

The discussion suggests that moment in the cycle when the economic news is at its best. Plainly, at the start of phase two the economic data relate to phase one, when above-trend growth (probably with profits growing faster than output) and falling unemployment were combined with low and perhaps declining inflation. If output is only marginally above trend, the underlying deterioration in inflation may be modest and perhaps concealed by special factors, such as help from lower indirect taxes, falling commodity prices and so on. This is the "sweet spot".

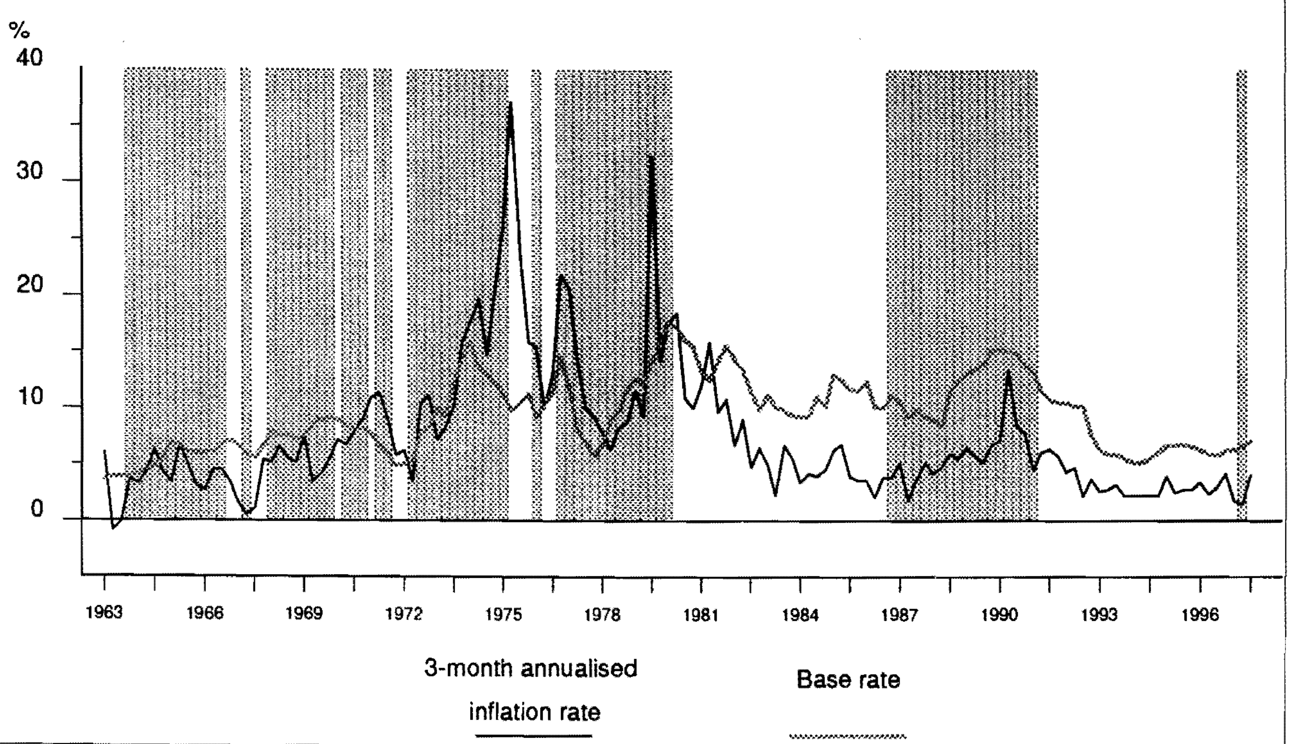
Sweet spot at start of Phase 2,

and may be very sweet if Phase 1 of falling inflation is prolonged

A further aspect needs to be emphasized. It should not be expected that, in the real world, the phases of the cycle are all of the same length. There is at least a possibility that periods when output is beneath trend are longer than periods when output is above trend, and vice versa. Phase one - when output is beneath trend and output growth is at an above-trend trend - may extend over several years, with low and falling inflation coinciding with good news on the "real side" of the economy (i.e., in terms of output growth and employment). Looking backwards from the start of a phase two which follows an extended phase one of this kind, the economy's macroeconomic performance may seem magnificent. This would be the sweetest of "sweet spots". It might be the occasion for politicians - such as Mr. Nigel (later Lord) Lawson in 1987 - to

Chart 3 Inflation and interest rates in the UK, 1963-97

Shaded areas are periods with a positive output gap



trumpet about their "miracles". It might also stimulate economic commentators to make claims about "new eras", "new paradigms" and such like.

The sour spot

The correct way to test claims of "new eras" is to examine the data on the relationship between the change in inflation and the output gap, and to see whether recent values of the change in inflation are lower than those estimated by the equation which best fits the data over the previous 10, 20 or 30 years. If they are lower, there may have been an improvement relative to those previous periods. When this exercise is carried out on recent UK numbers, no improvement is found. The good macroeconomic outcomes of the last few years are in line with the normal cyclical pattern; they do not imply any radical structural changes in the trend rate of growth or in the relationship between the output gap and inflation. (Incidentally, much the same comment is also true in the USA.)

Examination of data shows no change in past relationship and so no evidence of "new era"

Sour spot comes at start of Phase 4

Unhappily, if the business cycle has sweet spots, it also has sour spots. If the sweet spot is at the start of phase two when the output gap has been negative for two successive phases (i.e., with inflation being damped, possibly for some years, by excess supply in goods markets), the timing of the sour spot is obvious. It comes at the start of phase four, as the level of output has just dipped beneath its trend level. Inflation has been rising for some time, because the output gap has been positive for two successive phases, while phase three has been characterised by beneath-trend growth, rising unemployment and disappointing company profits. Indeed, after periods of extremely incompetent and inflationary demand management, which may have driven peak output 3% or 4% above its trend level, phase three may have suffered from rising inflation *and falling output*. If that seems so perverse as to be impossible, remember the UK's sorry plight between mid-1974 and mid-1975, in 1981, and between mid-1990 and mid-1991. These dreadful years experienced the worst imaginable combination, rising inflation, rising unemployment and falling output. They were the sourest of sour spots. Even so it would be wrong to think that the sour spots of the last 25 years reflected a major deviation from normal relationships. Both the sweet and sour spots seen in the UK economy in this period fit the standard cyclical pattern. Further, the good macroeconomic outcomes since 1993 and, in particular, the current sweet spot do not signal the death of inflation.

and can be so sour *that falling output accompanies rising inflation*

Trap of optimism at the sweet spot and pessimism at the sour spot

A trap for economic commentators is to base their macroeconomic projections on either extrapolations of the numbers in the last few years or on averages of these numbers with a little tweaking to reflect the commentator's hunches. Such practices may seem crude, but - dressed up with computer print-outs and jargon - they are rather common. The result of such extrapolating, averaging and tweaking is obvious: at sweets spots the commentators will be very optimistic and at sour spot they will be very pessimistic. If the description of the stylized business cycle given here is correct, commentary on these lines is worthless. In the real world optimism at sweet spots and pessimism at sour spots is likely to be misguided, even disastrous. At sweet spots commentators should warn of storms ahead and at sour spots they should say that the clouds are dispersing.

Correct approach is to estimate output gap and to make correct assessment of future growth

From an analytical standpoint, the correct approach is to assess where output is relative to its trend level (i.e., to estimate the output gap) and to forecast whether output growth in coming quarters will be at an above- or beneath-trend rate. On this basis the UK economy is now at an interesting juncture. Output may be marginally above its trend level, perhaps by 1/2% or at most 1% of trend output. (Shortages of skilled labour are starting to hamper manufacturing output, while the amount of spare capacity and empty commercial property is dwindling.) Over the last year output growth has undoubtedly been above its trend rate. If above-trend growth continues, the positive output gap may reach over 1% of GDP and could move up to the 2%- or-more figures seen at some previous cyclical peaks. If so, quite a nasty sour spot might follow, say in 1999 or 2000, with inflation returning to over 4% and possibly to 5%. A period of beneath-trend growth would be necessary to bring inflation back down to the 2 1/2% official target.

Introducing money

One way to obtain insight into the future path of demand and output, and to appraise the medium-term inflation prospect, is to look at money supply data. Interpretation of money supply data is complex, but virtually all macroeconomists accept that in the long run the demand to hold real money depends only on real variables. (In other words, a nation cannot make itself rich by printing more bank notes.) If excess real balances are created by an acceleration in nominal money supply growth, the inflation rate must increase sooner or later. The increase in inflation erodes the real value of the increase in nominal money. Ultimately, both the stock and the growth rate of real money balances have to be the same as they would have been if the acceleration in nominal money supply growth had not occurred.

Printing more money does not alter demand for real money balances

No immediate inflation results, but instead excess money is concentrated in corporate and financial sectors

Researchers have found that the personal sector's demand to hold money balances is more stable than that of the rest of the economy, with the level of personal incomes being the most powerful independent variable in the demand-for-money function. Initially an acceleration in money growth has negligible direct effect on personal incomes. So the upturn in money growth is unlikely much to change the rate of increase in personal sector money holdings. Instead the extra money balances have to be concentrated elsewhere, in the hands of companies and financial institutions. In fact, over the last 25 years a repetitive accompaniment of large fluctuations in aggregate money growth is even larger fluctuations in the money holdings of companies and financial institutions. The amplitude of the fluctuations has been greatest for financial sector money.

The macroeconomic significance of these fluctuations has been much discussed in policy-making circles recently, notably by the Monetary Policy Committee of the Bank of England. The reason for official concern is that a step-change

Some people believe that current high money growth of no macroeconomic importance

in the rate of UK money growth occurred in early 1995. The annual growth rate of M4 increased from about 5% in the three years to the end of 1994 to about 10% subsequently. In line with the previous cyclical patterns, the acceleration in the growth of financial sector money holdings has been far more pronounced for that of aggregate money holdings. If financial sector liquidity is a plaything of securities houses and investment banks, and if its recent rapid expansion is due to artificial additions to both sides of financial institutions' balance sheets, this phenomenon is of no importance to the macroeconomic outlook and the upturn in M4 growth does not imply a future increase in inflation.

Others believe that "too much money is chasing too few assets", which will cause asset price inflation and above-trend growth,

On the other hand, if the higher growth of financial sector money has given the financial institutions excess money holdings, the economy today suffers from a condition of "too much money chasing too few assets". The higher rate of aggregate money growth since early 1995 can therefore be described as the main causal influence on the stock market gains of the last two years, the sharp increases in London house prices (as people sell shares to buy London houses), the return to moderate house price inflation across the country (as people sell their London houses to buy houses elsewhere in the UK), higher prices for unquoted businesses such as restaurants and pubs (as people switch from housing equity into unquoted corporate equity) and so on. As asset prices move up throughout the economy, there are favourable "wealth effects" on consumption, investment and aggregate demand.

and a "sour spot" with rising inflation in 1999 and 2000

Since the middle of 1996 demand has indeed been growing at an above-trend rate, and unemployment and spare capacity have been falling. Happily, the level of national output in early 1996 was probably a shade beneath trend, and so it was possible in late 1996 and early 1997 to combine above-trend growth with low, even falling, inflation. But phase one has come to an end. If output is now above its trend level, the economy has entered phase two of the cycle and continued above-trend growth will lead to inflationary trouble. The sweet spot of mid-1997 will be followed by disappointing macroeconomic outcomes, particularly in 1999 and 2000. There will be a sour spot two or three years from now. (Of course, any precision about the timing of the sour spot and its exact characteristics would be spurious.)

The debate will be resolved by events

The debate on the macroeconomic significance of the acceleration in M4 growth, and the associated explosion in financial sector liquidity, will go on for months. It will be largely resolved by events. The current cycle may continue to follow previous patterns, with excess institutional liquidity spurring higher asset prices, and higher asset prices stimulating above-trend growth of demand and output, and eventually being succeeded by goods price inflation. Or it may follow another path, with excess institutional liquidity somehow being confined to the economy's financial sideshow.

Even if inflation does increase, another recurrent feature of the British business cycle might come into play. It would be for the economists who deny the macroeconomic importance of the money supply in general terms to question

(They will always find other culprits, like wages, oil prices, tax rises, trade unions and so on.) But on this occasion they might at least have the courtesy - unlike their predecessors after the Heath-Barber boom, the Healey boomlet and the Lawson boom - to accept that they got it wrong.

Are structural influences on inflation irrelevant?

The emphasis on the monetary determinants of inflation in this paper may appear too exclusive. A more balanced approach might be advocated, to allow some room for the structural considerations discussed by Mr. Bootle in *The Death of Inflation*. But how, if at all, can these considerations be integrated into the analysis? Are the economy's structural characteristics still relevant in some way?

Improvement in supply of goods would reduce inflation

In the analytical framework developed here, inflation is due to the quantity of money rising at a faster rate rather than the quantity of real output. This familiar statement is often appended to the well-known Friedmanite remark that inflation is a "monetary phenomenon". But it is in fact even-handed between two influences on inflation; it refers to the quantity of real output as well as to the quantity of money. For any given quantity of money, the price level will be lower (higher), the higher (lower) is the quantity of real output. Where more output is available as a consequence of supply-side reforms, then these reforms can be described as favourable structural influences on the inflation rate.

Two kinds of favourable structural changes, i. faster trend rate of growth,

But an important distinction can be drawn. With the concepts of the natural rate of unemployment, the output gap and the trend rate of output growth, two types of supply-side improvement can be differentiated. First, and most simply, the trend rate of output growth may be higher than before. If output starts at its trend level (i.e., the output gap is zero), and if the trend rate of money supply growth is unchanged, the higher trend rate of output growth implies a lower inflation rate. The acceleration in the trend rate of output growth may be due to a faster rate of improvement in the efficiency of labour and capital usage, with the natural rate of unemployment unchanged.

and ii. fall in natural rate of unemployment, which may occur suddenly

But, secondly, the supply-side improvement might consist in a decline in the natural rate of unemployment. This decline might occur suddenly, because of an abrupt change in trade union legislation or the benefit system (such as the introduction of the Jobseekers Allowance in the autumn of 1996), or it might occur over several years because of a sequence of reforms. If the decline were sudden, it would be best represented - in analytical terms - as a once-for-all positive change in the output gap. Even with the trend rate of output growth unchanged, inflation would be better than would otherwise have been the case. For any given money supply growth rate, inflation would continue to be better than before until above-trend growth took the level of output back to trend. Thereafter, the trend inflation rate implied by the trend growth rates of money and output would be restored. (Note also that - in interpreting the data over a series of years - it would be difficult to identify the separate effects of the two kinds of supply-side change.)

So there are two ways - an acceleration in the trend rate of output growth and a cut in the natural rate of unemployment (and an associated positive effect on the output gap) - that benign structural changes to the supply-side of the economy could lower inflation. However, the possibility of such changes in theory does not imply that they explain current low inflation in practice. The evidence is instead that the world-wide decline in inflation since the mid-1970s is overwhelmingly to be explained by the world-wide decline in money supply growth. In the industrial world as a whole the trend rate of output growth is lower now in the 1970s, while the natural rate of unemployment is undoubtedly higher, mainly because of adverse institutional changes in continental Europe. Inflation in the industrial world will increase if money supply growth accelerates once more. Money supply growth has in fact accelerated since early 1995.

Such structural changes seem of little relevance to decline in world inflation since the 1970s,

although the natural rate of unemployment may have fallen in the USA and the UK

Clearly, the analysis in this paper argues strongly against the claim that inflation is dead. However, it may be possible to rescue part of Mr. Bootle's thesis. In the last 15 years there may have been favourable policy moves towards greater labour market flexibility, and a consequent fall in the natural rate of unemployment, in the USA and the UK. In this respect Mr. Bootle would be right that structural reforms have reduced inflation. But the anti-inflationary effect of a lower natural rate can be interpreted conceptually as a once-for-all change, which cuts the inflation rate in a discrete time-interval. It does entail a permanent fall in the inflation rate. In any event, the gain would be trifling compared with the fluctuations in money supply growth seen in a typical business cycle.

Conclusion: inflation is not dead

The good inflation performance of the last few years must not be misinterpreted. It can be seen as the result of an extended period in which national output was beneath its trend level (i.e., the output gap was negative), following the severe recession of mid-1990 to late 1992. Further, the failure of output to return rapidly to its trend level after the recession was largely due to the longest period since the 1950s in which the annual rate of money supply growth was under 5% a year. With real money growth between mid-1990 and late 1994 at nil or low single-digit rates, asset prices - particularly in the over-supplied commercial and residential property markets - were weak, and investment struggled to return to its levels in the late 1980s. However, since early 1995 money supply growth has accelerated to a double- digit annual rate, company balance sheets have improved strongly, asset price inflation has revived, and since mid-1996 demand and output have been growing at well above trend rates. The level of output has now gone above its trend level (i.e., the output gap is positive). Continued money supply growth at a double-digit rate will therefore lead to accelerating inflation. The years 1999 and 2000 will see another cyclical "sour spot". Economists (or, at any rate, some economists) will wake up to the recognition that, once again, a monetary explanation of inflation has been successful. They will also look back on all the talk about "the death of inflation", motivated by favourable structural changes to the supply side of the British economy, as a pleasant but foolish day-dream.