



BANK OF ENGLAND

# Speech

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## **Glasgow Trades House Lecture**

Speech given by

John Vickers

At Strathclyde University

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**PRICE STABILITY IN THE UK**

**John Vickers<sup>1</sup>  
Executive Director and Chief Economist  
Bank of England**

**Price stability revisited**

In *Pride and Prejudice*, Mr Collins concluded his marriage proposal to Elizabeth Bennet as follows:

‘To fortune I am perfectly indifferent, and I shall make no demand of that nature on your father, since I am well aware that it could not be complied with; and that one thousand pounds in the 4 per cents, which will not be yours till after your mother’s decease, is all that you may ever be entitled to. On that head, therefore, I shall be uniformly silent; and you may assure yourself that no ungenerous reproach shall ever pass my lips when we are married.’

Happily, Elizabeth instead married Mr Darcy—a man of many virtues, including a vast amount in the 4 per cents.

Four per cent, or thereabouts, was the long-term interest rate for years and years. In the words of David Landes in *The Wealth and Poverty of Nations*:

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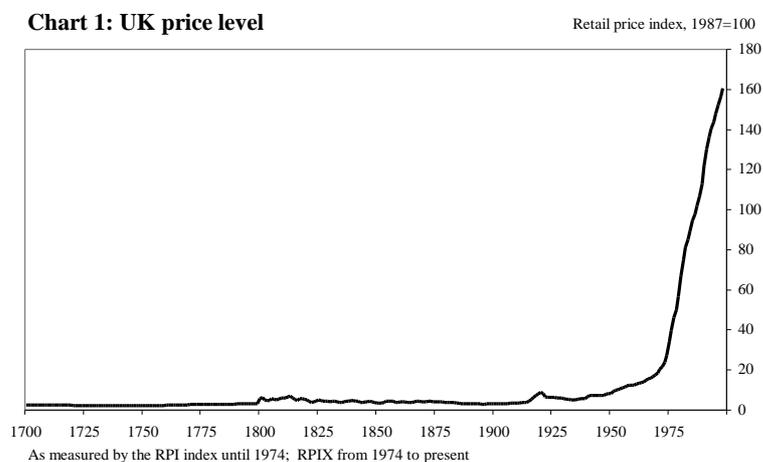
<sup>1</sup> I am grateful to Andrew Bailey, Spencer Dale, Paul Fisher, Nigel Jenkinson, Tony Yates, and especially Jo Paisley for helpful comments on a draft of this paper.

‘investors trusted the word of Britain and bought consols at 4 per cent, and Britain never let them down ... until the twentieth century, when war and deficits undermined the purchasing power of the pound and killed the gold standard. Is inflation a kind of impersonal lie?’

Interesting question. As a result of that inflation, a thousand pounds is now worth about a fortieth of its value in Jane Austen’s day. But, remarkably enough, the yield on long-term British government bonds has recently been back in the region of 4 per cent.<sup>2</sup> The reason is that inflation has become subdued.

### Is inflation dead or sleeping?

Chart 1 shows the path of the price level in Britain over the three hundred years since 1700. Two facts are immediately striking. The first is that, although prices sometimes moved sharply in the short-run, long-run price stability prevailed until the last third of this century. Indeed, the price level, as best we can measure it, increased only seven-fold from 1700 to 1967, an average annual inflation rate of well under 1%.

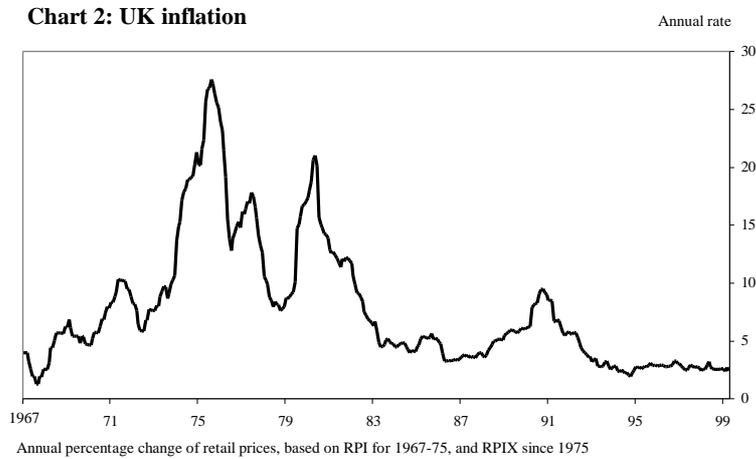


The second striking fact is the steep take-off in the price level over the past generation. In the quarter century between the devaluation of sterling in 1967 and sterling’s exit from the ERM in 1992, the UK price level increased more than eight-fold, an average annual inflation rate of 9%. At this rate of price increase, charts of the price *level* are not very illuminating, and nowadays

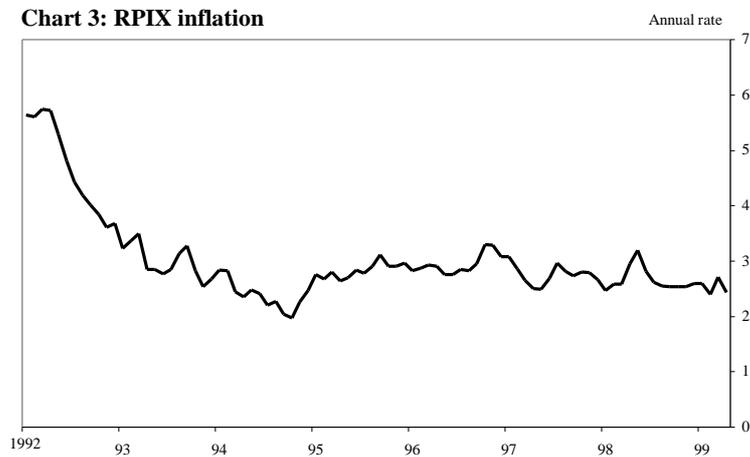
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<sup>2</sup> For example, the redemption yield on the long gilt (6% of 2028) was below 4.25% for a period earlier this year.

they are rarely seen, except in lectures by central bankers on price stability. It makes more sense to plot inflation—the rate of change of the price level—as in Chart 2.



But if we zoom in on the period since 1992, during which monetary policy has been based on inflation targets, we see a rather different picture—see Chart 3. Inflation has been moderate, at about 2.7% on average. No doubt this, like much else, would have shocked the Victorians, but it is more than respectable even by the standards of the 1950s.



Moreover, inflation over the past six years has been remarkably stable, especially in view of the swings that have occurred in the foreign exchange value of sterling. In no month since the start of 1993 has annual inflation (on the RPIX measure) been lower than 2% or higher than 3.5%.

Though the UK's post-war inflation performance has generally been worse than that of other developed countries, similar profiles are observed internationally, with inflation peaking in the 1970s and relatively quiescent in the 1990s. Indeed, the protracted recession in Japan and tumbling commodity prices have made deflation—negative inflation—an important subject of current debate.

So is inflation dead or sleeping? The view that inflation is dead sees the inflation generation (mid-1960s to early 1990s) as the exception to the historical norm of price stability. On this view, the makers of monetary (and fiscal) policy temporarily lost discipline, for example when confronted with policy dilemmas arising from oil price hikes that are unlikely to recur. And they succumbed to the temptation of thinking that they could engineer lower unemployment on a lasting basis by allowing higher inflation. Now we know better.

The view that inflation is sleeping disputes that price stability is the historical norm for the relatively modern era of 'paper money', which is not convertible into gold (or some such). With two interruptions, Britain was on the gold standard from early in the eighteenth century until 1931. The two periods of suspension (1797-1819 and 1914-25) were both related to war, and both saw considerable inflation, followed by deflation after resumption of the gold standard at the original parity. So, while long-run price stability reigned in the gold standard period, the British record for paper money years is rather mixed. And widespread international experience, most recently in Brazil, shows that achieving and maintaining an anchor of price stability certainly cannot be taken for granted.

The question, then, is whether inflation stays sleeping. The answer depends above all on the framework and practice of monetary policy. The state of the public finances is important too, for history teaches that sound money and unsound public finance are at odds. The UK, and of course the euro area, have quite new monetary policy frameworks. But they are based on the long-standing principle that the primary objective of monetary policy should be price stability. I shall discuss the UK framework shortly. But first we must ask why price stability matters.

## Why does price stability matter?

Price stability—by which I mean low and stable inflation rather than high and volatile inflation—matters for a number of reasons that can be grouped under three headings:

- Inflation would be bad even if it were perfectly anticipated
- Uncertainty about inflation, which goes up with inflation, is bad
- Unanchored inflation expectations are bad for macroeconomic performance.

Let me take these points in turn.

### *Costs of expected inflation*

Imagine a hypothetical economy with a steady and predictable 10% inflation rate. Why would this be worse than, or indeed different from, an economy with steady and predictable 2.5% inflation?

The first reason is tax. Inflation, among other things, is a tax on money holdings that bear no interest: inflation erodes the purchasing power of money. So a higher rate of inflation means, in effect, a higher rate of tax on cash balances. Money in the bank earns interest; money in the pocket does not. So when inflation and interest rates are high, rather than getting £100 from the cash machine once a week, it might be better, despite the cost in terms of time and shoe-leather, to get £50 twice a week.

Since paper money costs so little (in relation to value) to create, such efforts to economise on cash balances are inefficient for the economy. Hence Milton Friedman's famous proposition that efficiency requires the nominal interest rate (the effective cost of holding money) to be close to zero. Only then would the inflation tax distortion go away. For the real rate of interest to be positive, a zero nominal interest rate would actually mean a negative inflation rate.

But this is too quick. Governments need tax revenues, and taxes inevitably cause inefficiency. Why should money holdings be altogether exempt from tax? Reasons can be advanced, but let me

not get into that. Suffice it to say that it would be hard to justify in economic terms a high tax rate on money holdings.

There is another, perhaps more important link between inflation and tax. The tax system is not fully indexed to inflation, so higher inflation means higher effective rates of tax. Consider the return to saving. Suppose that the pre-tax nominal rate of interest in the 10% inflation economy is 12.5%—that is, inflation plus a real (i.e. after inflation) interest rate of 2.5%. Tax is based on income at the nominal interest rate of 12.5% rather than the real interest rate of 2.5%. After tax at the 23% basic rate, the saver gets a return below 10%—i.e. negative in real terms. But if the interest rate is correspondingly 5% in the economy with 2.5% inflation, there is a clearly positive post-tax return to saving. The incentive to save and invest for the future is higher—and less distorted—in the lower inflation economy.

Perfectly anticipated inflation has other costs too. Price changes are a hassle for sellers and, if frequent, potentially confusing for buyers, but they must happen more often with higher inflation. And there is the sheer inconvenience. Money is a yardstick. As Mankiw (1997) observes, it would be very inconvenient if a yard got an inch shorter each year—though I personally would benefit by being six feet tall next year. Erosion by inflation of the monetary yardstick is in some ways analogous.

What do these costs add up to? A Bank of England study by Bakhshi et al (1997), which follows Feldstein's analysis of the US economy, estimated that lowering the (perfectly anticipated) inflation rate in the UK by two percentage points could generate benefits worth the equivalent of 0.2% of GDP in perpetuity. These are serious costs of inflation, but there is much more to come.

So why not go the whole hog and aim for zero inflation—or less, as with the Friedman proposal mentioned above? (Of course this is a question for the Chancellor, who sets the inflation target, not for the MPC, whose job is to achieve the target set.) First, measured inflation might slightly exceed true inflation, for example because price index measurement does not fully reflect new products and quality improvement. Aiming for zero true inflation then implies aiming for slightly positive measured inflation.

Second, it may be a fact of life that some prices and wages are inflexible downwards in money terms. (But if so, this may be more a symptom of a high inflation culture than in the nature of things.) Inflation allows such prices to be flexible downwards in real terms, which could help to reduce inefficient resource use and even unemployment.<sup>3</sup>

Third, nominal interest rates cannot practically go below zero (they are virtually at that floor today in Japan). So modest inflation might provide a useful cushion in case of an extreme economic situation that required negative real interest rates.<sup>4</sup>

Finally, the best is the enemy of the good. Even if an economy with zero inflation was better than one with say 2.5%, it is unlikely to be hugely better, and inflation at more or less 2.5% is low and stable inflation, and that is what matters.

### *Costs of uncertain inflation*

While perfectly anticipated inflation is more easily found in economics textbooks than in reality, uncertain inflation, and the costs it has brought over the past generation, are all too familiar.

Someone who bought an annuity upon retirement in 1967, when long-term government bond yields were around 6.5%, would have seen the value of her annuity retirement income in real terms largely eaten up by inflation over the next twenty-five years, which averaged 9%.

And consider the dilemma, which many of us have faced, confronting a new mortgage borrower in an economy with uncertain inflation prospects. Suppose, for example, that it is even odds whether inflation will be high or low over the life of the mortgage, and that the nominal interest rate tends to move in line with inflation. Suppose too that long-term fixed rate mortgages are available at an intermediate rate of interest. What sort of mortgage should the new borrower opt for? Inflation uncertainty creates drawbacks for each kind of mortgage.

The fixed rate mortgage, in this hypothetical example, involves a large gamble on how inflation will turn out. The stake in this gamble is a sizeable proportion of the borrower's lifetime net

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<sup>3</sup> See Akerlof et al (1996).

wealth. High inflation erodes the size in real terms of the borrower's mortgage debt liability (just as high inflation has eroded the value of government debt on occasions in the past.) The borrower is laughing all the way from the bank. But with low inflation, the cost in real terms of servicing fixed rate mortgage debt is very high. Fixed rate debt plus large inflation uncertainty equals large uncertainty about household net wealth, and that is obviously undesirable.

Insofar as nominal interest rates tend to move in line with inflation, floating rate mortgages offer an imperfect way of reducing such uncertainty about household net wealth. But they involve considerable interest rate uncertainty, which inflation uncertainty exacerbates. Interest rate uncertainty means residual income uncertainty—i.e. uncertainty about household income after tax and mortgage payments. That too is clearly undesirable.

If, by contrast, inflation is reasonably stable and predictable, the real wealth uncertainty of the fixed rate mortgage is much reduced. So too is the residual income uncertainty of the floating rate mortgage if interest rates are more stable when inflation is more stable.

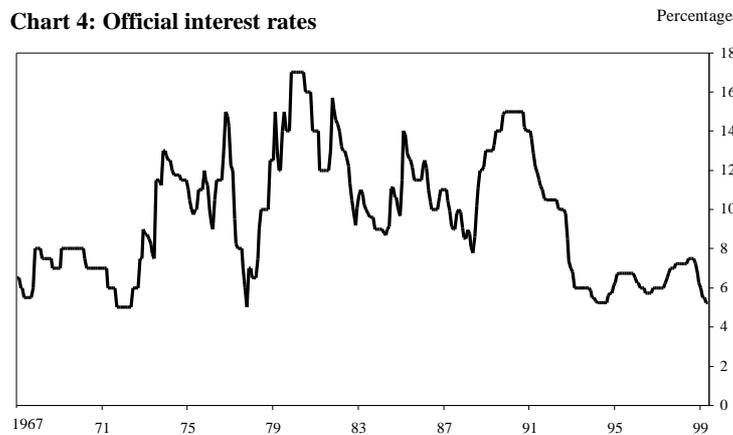


Chart 4 shows the official short-term interest rate over the period since 1967. Comparison with Chart 2 above indicates that interest rates indeed tend to be more stable when inflation is more stable. For example, in the period of stable inflation since the start of 1993, the interest rate has varied only between 7.5% and 5.25%. In the previous six years of more volatile inflation, interest rates ranged from 7% to 15%. The positive correlation between interest rate volatility and inflation volatility over the past fifty years can be seen more systematically in Chart 5.

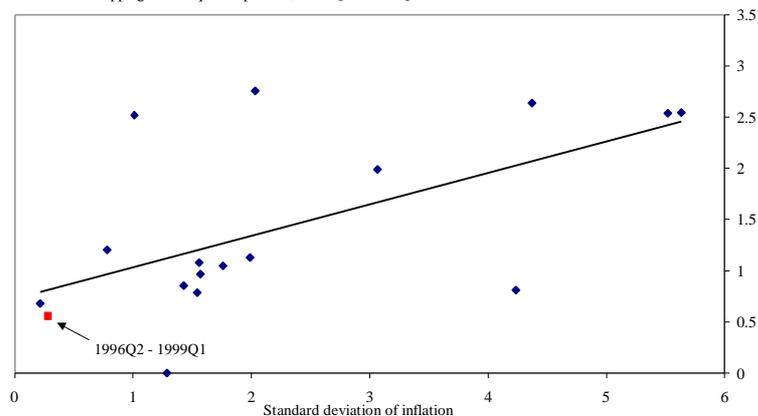
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<sup>4</sup> Krugman (1998) argues that negative real interest rates are needed in Japan.

**Chart 5: Volatility of inflation and interest rates**

Over non-overlapping twelve-quarter periods, 1947 Q1 - 1999 Q1

Standard deviation of interest rates



To sum up, mortgages—large transactions that span many years—exemplify the large financial risks created by inflation uncertainty. The point is a general one, which could be illustrated by many other cases, including pensions and corporate finance. Price stability cannot banish financial risks, but it can substantially reduce them, and that is well worth doing.

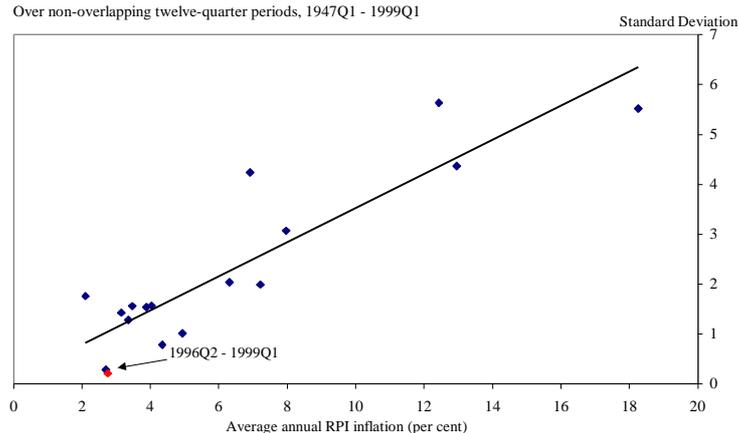
### *High inflation is uncertain inflation*

At this point you might be thinking that the costs of uncertain inflation seem much more serious and compelling than the costs of perfectly anticipated inflation discussed earlier, and that stable inflation of say 10% would not be much worse than stable inflation of 2.5%.

It might well be that the inflation uncertainty is especially damaging, but the conclusion that 10% inflation would be okay does not follow. First, the quantitative estimates reported earlier imply that 10% inflation, even if perfectly anticipated, would be substantially worse than 2.5% inflation. Second, stable inflation at 10% is simply not a practical option. All experience shows that high inflation is volatile inflation, and volatile inflation is uncertain inflation—see Chart 6 and the analysis by Joyce (1997).

**Chart 6: Standard deviation and average level of RPIX inflation**

Over non-overlapping twelve-quarter periods, 1947Q1 - 1999Q1



Why does high inflation mean uncertain inflation? There are many possible reasons. One is that in episodes of high inflation, *expectations* about inflation lack an anchor and start to drift.

#### *The importance of anchored inflation expectations*

A regime of price stability has not only low and stable inflation out-turns but also low and stable inflation expectations. To see why this is important for macroeconomic performance, consider the following example. Suppose that demand in the economy turns out to be unexpectedly strong. In that case it is likely that output will rise temporarily above its potential level, and that inflation will turn out higher than expected.

If the economy lacks a credible commitment to price stability, inflation expectations are likely to rise as a result. Then there is a familiar policy dilemma. If policy expands to accommodate the new inflation expectations, the economy is left with higher inflation. If, on the other hand, policy is tightened to bring inflation back down, the likely consequence is a period of output below potential, until inflation expectations adjust. Disinflation is costly—the more so that inflation expectations resist decline.

Suppose, by contrast, that there is a credible commitment to price stability, so that inflation expectations are reasonably well anchored. Then the unexpected strength of demand and the temporary rise in inflation will be seen as just that, and expectations of future inflation will not rise correspondingly. Output will inevitably return to its potential level, but need not fall below it in

order to bring inflation expectations back down. They are down already, thanks to the credible commitment to price stability. Disinflation will then be relatively costless.

It follows that price stability—in particular stable inflation expectations—is good for output stability. The international and domestic shocks hitting any economy mean that significant variation in inflation out-turns, and significant volatility of output relative to potential, are inevitable. But with well-anchored inflation expectations, such volatility is likely to be substantially lower than if inflation expectations are adrift.

In sum, low and stable inflation *expectations* are a key part of a regime of price stability. They contribute to greater stability of inflation out-turns, and to greater stability of output relative to its potential level. It is moreover possible that the prospect of greater stability of output and inflation might enhance the level of potential output over time—for example by reducing elements of investment uncertainty. In any event, greater macroeconomic stability is a major goal in its own right.

### **The UK framework for price stability**

Soon after the 1997 general election, a new constitution for UK monetary policy was established when responsibility for making interest rate decisions was transferred from the Chancellor of the Exchequer to the Monetary Policy Committee of the Bank of England. The goals of monetary policy are now laid down by statute. The primary objective that the MPC must pursue is price stability, and, subject to that, the other objectives of government policy, including growth and employment.

The operational meaning of the price stability objective is set by the Chancellor's remit to the MPC. Price stability is defined by the 2.5% target for inflation on the RPIX measure—that is, inflation of the Retail Prices Index excluding mortgage interest payments. That is the target at all times, but the remit recognises that, confronted with shocks to the economy, striving to be at the target in all circumstances might cause undesirable volatility of output. The target is symmetric: the MPC responds just as vigorously to prospective undershoots of the target as to prospective overshoots. If the target is missed by more than one percentage point on either side, the

Governor of the Bank, as Chairman of the MPC, must write an open letter to the Chancellor explaining why, and what is being done to rectify the situation.

Transparency and accountability are central to the system. Minutes of the monthly MPC policy meetings are now published within two weeks of each meeting. They give a full and frank account of the policy discussion, and record the individual votes of the nine Committee members. The Bank's quarterly *Inflation Report* gives a comprehensive analysis of the UK economy and explains the factors underlying policy decisions. Last month, the MPC also published a paper setting out its view of the channels through which official interest rate decisions affect inflation and output, and the Bank published a book describing the economic modelling tools that help the MPC in its work. Committee members regularly give evidence before parliamentary committees in Westminster, and we look forward to building constructive dialogues with the Scottish Parliament and the Welsh Assembly in due course. In gatherings of various kinds throughout the UK, we speak and listen and do our best to answer questions.

So as well as producing a single number each month—the interest rate decision—the MPC produces a large number of words—words that seek to explain in clear terms how the MPC is pursuing the clear primary objective of 2.5% inflation.

### **Price stability: recent evidence**

As we saw earlier, the UK record of price stability over the past six-and-a-half years of inflation targeting has been unusually good by post-war standards. And in each of the last ten months, inflation has been within just 0.2% of the 2.5% target level.

Inflation will not generally be so close to target in future. The shocks and disturbances affecting any economy mean that bigger deviations are bound to happen sooner or later. But the symmetrical nature of the inflation target means that they are equally likely to be upwards as downwards. If the MPC sets policy right given the existing target, inflation will be about 2.5% on average.

Is this what people in fact expect? Inflation expectations are extremely important—for example in pay bargaining—but they are hard to measure. There are two main methods of measurement. One is simply to ask people. Table 7 shows the results from the Barclays Basix Survey of inflation expectations. Two points stand out. First, apart from the general public, the reported inflation expectations of all groups—trade unions, finance directors, business economists, investment analysts and academic economists—are currently quite close to 2.5%. Second, for all the groups, expected inflation has fallen substantially over the past year.

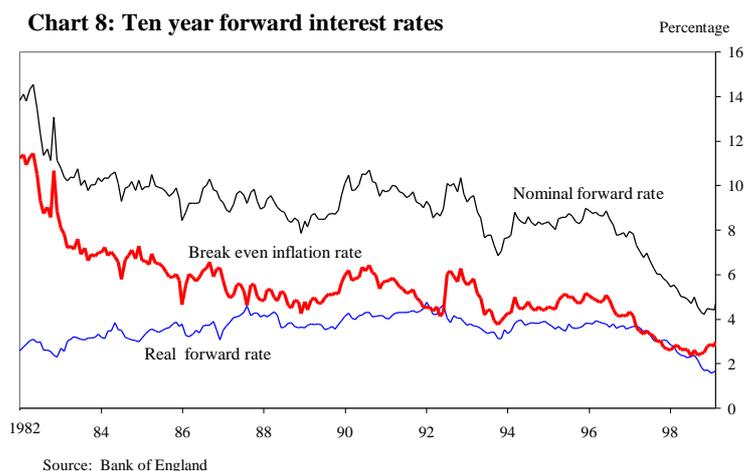
**Table 7: Survey-based inflation expectations<sup>(a)</sup>**

	1998				1999
	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>Q1</u>
General public	5.1	5.1	5.1	4.7	4.6
Trade unions	3.9	3.8	3.6	3.2	2.8
Finance directors	3.3	3.2	2.9	2.9	2.5
Business economists	2.9	2.9	2.4	2.3	2.5
Investment analysts	3.3	3.3	3.1	3.0	2.7
Academic economists	3.1	3.1	3.0	2.7	2.6

(a) Expectations of inflation rate 12 to 24 months ahead. RPI inflation, except for General public, for which the measure of inflation is not specified.

Source: Barclays Basix Survey.

Measures of inflation expectations can also be inferred from the bond market. Chart 8 shows the ten-year real and nominal forward interest rates derived from index-linked and conventional government bonds, respectively. Also plotted is the difference between them—the ‘break-even’ inflation rate, which measures expected inflation (plus any inflation ‘risk premium’). As recently as the mid-1990s, the nominal rate was 8%, the real rate was 3.5%, and the break-even inflation rate 5%. The nominal rate is now around 4.5%, the real rate has fallen below 2%, and the break-even inflation rate is somewhat above 2.5%. Expected inflation, and perhaps also the inflation risk premium, has fallen very substantially. So too has the cost of borrowing for government, firms and households.



Of course this is not all due to the new framework for monetary policy. There is low inflation in industrialised countries generally, in part because of the crises that have affected a number of emerging market economies over the past two years, and the weakness of the Japanese economy. The appreciation of sterling that began in 1996 has further subdued UK inflation. Still, the new regime has surely played some part in bringing down inflation expectations, and, if the MPC does its job, it promises to lock in the substantial declines that have recently occurred.

### **Born lucky?**

So has the UK's new monetary regime been fortunate and caught a fair wind of benign global inflation and a strong pound? Yes and No. Those forces have had the benefit of allowing more time for domestic inflationary pressures—for example in the labour market—to ease back towards a level consistent with the inflation target. The moderation of inflation expectations has been an important part of this process. And while output growth has clearly slowed—otherwise there would have been overheating—a contraction of aggregate UK output has probably been avoided—if only just—despite considerable turbulence in the global economy.

In other respects, however, those international forces have been far from benign, as many UK manufacturers and agricultural producers know all too well. For them, and for those competing in the internationally traded goods sectors generally, it has been an ill wind. The contrast over the past year or so between decline in manufacturing and quite steady growth in the more domestically oriented services sectors, has been sharp.

The MPC is acutely aware of that contrast, and the consequences for prospective inflation of exchange rate movements are central to interest rate decision-making. It would however be misleading to manufacturing industries to say that a monetary policy that had (unlawfully) aimed to overshoot the inflation target would have removed the difficulties that they face. It is possible that sterling would then have been weaker, though, as we have seen clearly in recent months, lower interest rates do not always mean a lower exchange rate. But the sure consequence of such a policy would have been greater cost pressure on firms across the whole economy, including in manufacturing. The UK has been down that road before.

Moreover, the exchange rate is just one of many factors that affect prospective inflation. The MPC's job involves watching all of them. While sterling and external forces can have substantial impacts on inflation in the short term, it is a home truth that inflationary pressures in domestic labour and product markets are what matter for monetary policy in the longer run.

## **Conclusion**

Monetary policy requires determined flexibility—the determined pursuit of price stability by setting interest rates flexibly in response to economic developments. The MPC has just had its second birthday. I hope that the Committee has demonstrated that, compared with other two-year olds, it is equally determined but rather more flexible. The basis for the determination is that price stability, which it is for monetary policy to secure, is a key condition for economic success. The UK is not just revisiting price stability—we mean to stay.

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