
The inflation target five years on

The introduction of an inflation target was announced five years ago. In this speech,⁽¹⁾ Mervyn King outlines the use of inflation targets since then, reviewing the experience of inflation-targeting countries, and discussing the charge that inflation targets ignore output. He explains the role of inflation forecasts and stresses the importance of transparency and accountability. Mervyn King concludes that inflation targets, the Bank's Inflation Report and other aspects of the new monetary policy framework represent significant and successful developments in central bank operations in the 1990s.

Tonight we celebrate two birthdays. The first is the tenth birthday of the Financial Markets Group (FMG) here at the LSE. Its aim, then as now, was to promote research into the link between financial markets and the real economy. That is what central banks are about. When Charles Goodhart and I talked to David Walker in 1986 about setting up such a group, none of us envisaged the breadth and depth of the research that was to emerge over the subsequent decade. Comparing the first *Annual Report*, which I wrote, with the latest *Report*, it is clear that the FMG has never been in such good shape. Like most successful teams, its strength has been its ability to find outstanding young players who have come through their apprenticeship as research students and joined the first team as leading academics, both in the United Kingdom and abroad. This flowering of talent in the FMG is in large part because of the hard work and leadership of David Webb during the past six years. Throughout that time, David has been able to rely on the guiding hand of Charles Goodhart, and a series of outstanding chairmen of the Group's Steering Committee: David Walker, without whom the Group could not have been set up, Rupert Pennant-Rea and now Brian Quinn. The highly successful interaction between the private sector sponsors and the public sector researchers has provided a model which, prompted by the ESRC, has been followed by other groups.

Tonight, though, we celebrate another birthday. Five years ago this month, the then Chancellor, Norman Lamont, in the wake of our departure from the ERM, announced his intention to introduce an inflation target. In the weeks immediately following our departure from the ERM, Britain had a floating exchange rate and no nominal anchor for the price level. Such an anchor was urgently needed. In October 1992, the Chancellor wrote to the Chairman of the Treasury and Civil Service Committee setting out a new framework for monetary policy consisting of two features. The first was an explicit inflation target. Initially this was a range of 1%–4%, with the aim of bringing inflation down to within the lower part of the range by the end of the Parliament. The second was a much greater degree of openness and transparency in the conduct of monetary policy. And it is five years to the day since substance was

given to this idea, when Mr Lamont announced in his Mansion House speech that the Bank would be asked to publish an independent *Inflation Report* in order 'to make the formation of policy more transparent and our decisions more accountable'. So the *Inflation Report* was launched publicly five years ago tonight.

The further radical changes to the Bank of England and the monetary policy framework announced by Gordon Brown in May this year draw a clear distinction between the Chancellor's responsibility for setting the inflation target and the responsibility of the Bank's new Monetary Policy Committee (or MPC for short) for ensuring that interest rates are set so as to hit that target. In the jargon, this distinction is between goal independence and instrument independence. The government sets the goal and the MPC sets the instrument. This division of labour is embodied in the Bank of England Bill, which was laid before Parliament yesterday afternoon.

The inflation target remains firmly at the centre of the monetary framework. In his letter to the Governor on 6 May, the Chancellor wrote that 'the monetary policy objective of the Bank of England will be to deliver price stability (as defined by the Government's inflation target)'. The Chancellor subsequently set the inflation target at 2½%, as measured by the increase in the RPI excluding mortgage interest payments over the previous twelve months—known as RPIX inflation. The inflation target will be reviewed by the Chancellor annually at the time of the Budget, though the presumption is that it will not be changed during the present Parliament.

The painful experience of the transition from the strict rules of the gold standard to the discretionary management of inconvertible paper money—described by Marvin Goodfriend of the Richmond Fed as a '20th century odyssey'—has led to the modern consensus that price stability is the overriding objective of monetary policy. An explicit recognition of this consensus is the move in the 1990s towards formal inflation targets. Such targets were first introduced as an anchor for monetary policy in New Zealand in March 1990, and in Canada in February

(1) Given at the London School of Economics on Wednesday 29 October 1997 to mark the tenth anniversary of the LSE Financial Markets Group.

1991. But it is over the past five years that the idea has not only been adopted more widely, with some eight countries now basing their monetary policy on an explicit inflation target, but has been seen as an alternative intellectual framework for monetary policy. There are conferences on inflation targets. There has been an increase in the number of academic papers on inflation targets. And it has become a popular recommendation by the IMF to countries in need of advice. In fact, inflation targets have been all the rage in the 1990s and they are as fashionable now as the idea of monetary policy credibility was in the 1980s. An analysis of the number of articles published with the phrase ‘monetary policy credibility’ in their title shows an increase from 4 to 48 articles between the first and second half of the 1980s. A similar phenomenon has occurred with inflation targeting. Prior to 1992, only 13 academic articles had been published that included the phrase ‘inflation target(ing)’ in the title. In the subsequent five years, that number increased fivefold to 68.⁽¹⁾

Why has the popularity of inflation targets spread, how do they work, will they survive, or is this just a fad? In this lecture I shall try to answer six questions:

- 1 Is inflation targeting new?
- 2 What has been the experience of countries with inflation targets?
- 3 Does an inflation target mean that monetary policy ignores output?
- 4 What is the role of inflation forecasts?
- 5 Why is openness and transparency important?
- 6 How will the new Bank of England be accountable?

Is inflation targeting new?

Though inflation targets have been the fashion of the 1990s, the idea that policy should explicitly target the price level has a long and respectable pedigree. Both Irving Fisher and John Maynard Keynes advocated targeting a price index, and in the 1930s, following the earlier writings of Wicksell, Sweden adopted a price target, thus avoiding the worst of the depression when the gold standard collapsed.

The benefits of price stability—the avoidance of both inflation and deflation—have long been well understood, if overlooked for much of the post-war period. Inflation targets have the great advantage of focusing attention on the objective that monetary policy can achieve in the long run, namely price stability. The benefit of increasing the transparency of monetary policy is an issue to which I shall return later. But in a deeper sense, an inflation target is no more than a way of restating the fact that any monetary policy faces two tasks. The first, and overriding, objective is to hit the desired level of inflation in the medium to long

run. The second is to avoid damaging fluctuations to output and employment—the ‘boom and bust’ syndrome—by adjusting interest rates in the face of unexpected shocks to the economy.

It is possible to show rigorously, within the context of a simple model of aggregate demand and supply, that any monetary policy can be expressed as a ‘monetary policy reaction function’ that describes policy in terms of two variables.⁽²⁾ The first is an *ex ante* inflation target, defined as the value of the inflation rate that the central bank would like to achieve in the absence of any shock to the economy. The second is the discretionary response by the central bank to the observed shock. In this sense, an inflation target is not a particular way of setting monetary policy; rather, it should be seen as a generic form encompassing different monetary policy regimes as special limiting cases.

To see this, compare an inflation-targeting regime with a regime based on monetary targeting. Both regimes incorporate an inflation target (either implicitly or explicitly) as the ultimate objective of policy. And given the transmission lags in monetary policy, both rely on a forward-looking assessment when responding to shocks. The difference between the two regimes rests on the weights assigned to different information variables when forming that assessment. An inflation-targeting regime exploits the widest set of information variables possible—the policy-maker optimally weights together any variable that helps to predict inflation in the future. In contrast, the policy-maker in a (pure) monetary-targeting regime considers only money and ignores the potential information contained in non-monetary variables. In this sense, monetary targeting is simply a limiting case of inflation targeting in which the policy-maker assigns a weight of unity to money and of zero to all other variables.

Put another way, in a world where the velocity of money was entirely predictable and there was a one-to-one mapping between the growth of money and inflation, the inflation-target regime would collapse to that of monetary targeting. Unfortunately, we do not live in such a world, we never have, and nor are we ever likely to. Inflation targeting allows the discretionary use of information other than money when velocity is unpredictable. For this reason, I think that inflation targeting is here to stay.

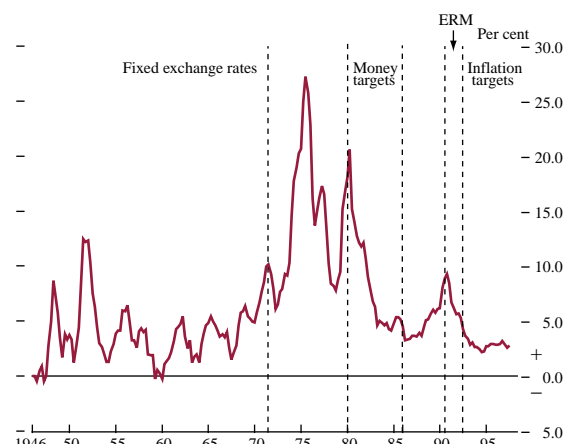
What has been the experience of countries with inflation targets?

Chart 1 plots the path of UK inflation since the Second World War, and shows the different monetary policy regimes in place during this period. It is a sad reflection of the transparency of monetary policy during much of this period that the dating of policy regimes is somewhat imprecise. Indeed, there are periods, notably in the 1970s and the late 1980s, when the nominal anchor was not at all clear. These problems highlight the importance of a clear and transparent

(1) Based on citations in the *Journal of Economic Literature*.

(2) Such a model is discussed in King, M (1996) ‘How Should Central Banks Reduce Inflation?—Conceptual Issues’ in *Achieving Price Stability*, Federal Reserve Bank of Kansas City.

Chart 1
Annual UK inflation 1946–97^(a)



(a) Inflation is measured as the annual increase in the retail price index from 1946–74, and in the retail price index excluding mortgage interest payments from 1974–97.

framework for monetary policy. The large increases in inflation in the 1970s and, to a lesser extent, in the late 1980s both occurred in periods when the framework for monetary policy was, at best, opaque. Conversely, the introduction of clear and transparent monetary regimes, be it monetary targeting, the ERM or direct inflation targeting, have often coincided with sustained falls in inflation. It is not possible to distinguish between cause and effect here, but the experience suggests the benefits of a clear nominal anchor. Some anchors, however, are more effective than others.

In the five years since the inflation target was introduced, the annual rate of inflation in Britain has averaged 2.8% a year. In the same period, the annual growth rate of GDP averaged 2.9%. To a large extent, that reflects a cyclical recovery. Nevertheless, the last sustained period in which GDP growth exceeded inflation was in the first half of the 1960s. A fifth birthday is clearly far too early to judge the likely long-term success of the new approach. What is clear, however, is that the birth of the inflation target coincided with one of the most successful episodes of the United Kingdom's post-war economic performance.

A similar story can be told from the experience of other inflation-targeting countries. Table A looks at average inflation among a set of inflation-targeting countries in the periods before and after the introduction of the targets in each country.⁽¹⁾ In nearly all cases, inflation has more than halved from the preceding decade. Indeed, the level of inflation in these countries now compares favourably with that in non inflation targeting countries. Again it is important not to confuse correlation with causation—the 1990s have seen a global disinflation. But it is encouraging that, as Table B indicates, this reduction in inflation has not come at the expense of either average output growth or, as some commentators feared, greater variability in output. Indeed, in a period in which average output growth in the rest of the G7 has fallen in every country except Germany,

Table A
Average inflation performance in inflation-targeting and non inflation targeting countries

	Decade preceding inflation target		Period following introduction of inflation target (a)	
	Average rate of inflation	Variance	Average rate of inflation	Variance
Inflation-targeting countries				
Australia	6.2	8.41	2.7	1.71
Canada	5.8	7.90	2.0	2.51
Finland	5.2	3.37	1.1	0.51
Sweden	6.6	6.65	2.3	2.29
New Zealand	11.6	25.70	2.5	2.70
United Kingdom	5.2	2.21	2.8	0.09
Average	6.8	9.0	2.2	1.6
1980s				
Average rate of inflation				
1990s				
Average rate of inflation				
G7 non inflation targeting countries				
France	7.4	18.86	2.3	0.56
Germany	2.9	4.69	3.1	2.01
Italy	11.3	35.85	5.2	0.94
Japan	2.5	5.14	1.4	1.67
United States	5.6	12.52	3.4	1.13
Average	5.9	15.4	3.1	1.3

(a) Inflation targets were introduced in: Canada in February 1991, Finland in March 1993, Sweden in February 1993, New Zealand in March 1990, and the United Kingdom in October 1992. The date of the introduction of the inflation target in Australia is not altogether clear. It is taken here to be April 1993.

Table B
Average GDP growth in inflation-targeting and non inflation targeting countries

	Decade preceding inflation target		Period following introduction of inflation target (a)	
	Average rate of GDP growth	Variance	Average rate of GDP growth	Variance
Inflation-targeting countries				
Australia	3.2	10.18	4.2	0.96
Canada	2.8	9.99	1.9	3.09
Finland	1.4	17.33	3.2	6.49
Sweden	1.6	4.73	1.9	5.09
New Zealand	1.8	6.95	2.4	7.78
United Kingdom	2.4	5.76	3.0	1.04
Average	2.2	9.2	2.8	4.1
1980s				
Average rate of GDP growth				
1990s				
Average rate of GDP growth				
G7 non inflation targeting countries				
France	2.3	1.95	1.4	2.33
Germany	1.8	3.18	2.1	4.67
Italy	2.4	2.52	1.2	2.11
Japan	3.8	1.49	2.2	3.79
United States	2.8	6.91	2.1	2.30
Average	2.6	3.2	1.8	3.0

(a) See Table A for details of when inflation targets were introduced in each country.

the average rate of growth in inflation-targeting countries has increased from a little over 2% to nearly 3%, while the variance of GDP has more than halved. Again, cyclical effects explain part of these changes. But the inflation target countries have experienced a recovery in output without losing control over inflation.

Does an inflation target ignore output?

A common charge against an inflation target is that it ignores output. An inflation target, the critics would argue, is not enough. But, as the saying goes, it all depends on what you mean by an inflation target.

(1) The two inflation-targeting countries omitted from Tables A and B are Israel, where comparisons are dominated by its recovery from hyperinflation, and Spain, which only introduced its inflation target at the end of 1994.

There are two dimensions to this question—long-run and short-run. If one believes that in the long run, there is no trade-off between inflation and output, then there is no point in using monetary policy to target output. Most central banks believe—and there is growing evidence to support this view—that low inflation is, if anything, more conducive to productivity growth than high inflation. But you do not have to accept this proposition, only the view that printing money cannot raise long-run productivity growth, in order to believe that inflation rather than output is the only sensible objective of monetary policy in the long run.⁽¹⁾

The interesting dimension of the question is in the short run. And it is here that the critics do have a point. I argued earlier that any monetary policy can be described in terms of two policy variables—a medium-term inflation target and a response of interest rates to shocks that create fluctuations in inflation and output. The overriding objective of monetary policy is to ensure that on average inflation is equal to the target. But such a target is not sufficient to define policy. There is a subordinate decision on how to respond to shocks as they occur.

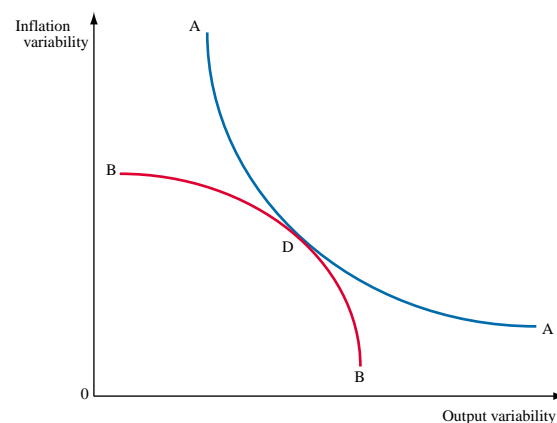
As is well known, the significance of that discretion depends on the nature of the shocks hitting the economy. Where such shocks take the form of unexpected increases or decreases in demand, output and inflation tend to rise or fall together. These shocks pose no dilemma for the MPC. There is, of course, a difficult technical problem of identifying such shocks, but the way in which policy should respond is, in principle, clear. But there are other types of shock—usually captured by the portmanteau description ‘supply shocks’—that tend to shift output and inflation in opposite directions. Sometimes these are the results of government policy at home (changes in indirect taxes for example) or in policy overseas, resulting in movements in the exchange rate. On other occasions, such shocks reflect unexpected developments in the world economy.

Faced with supply shocks, central banks have a choice. They can either try to bring inflation back to the target level as soon as possible, possibly exacerbating the initial impact of the shock on output. Or they can accommodate the inflationary consequences of the supply shock in the short run, bringing inflation back to the target level more slowly and reducing the impact on output. Hence, in the short run, there is a trade-off between inflation and output. And the choice between these two means that there is a permanent trade-off between the volatility of inflation and the volatility of output. A strategy of returning inflation to its target as rapidly as possible leads to lower inflation volatility and higher output volatility than a strategy of bringing inflation back to target at a longer horizon.

The trade-off between output volatility and inflation volatility has been popularised by the work of Taylor.⁽²⁾ Studies typically find evidence that very short or very long

targeting horizons deliver extreme outcomes. This type of trade-off is illustrated by the curve AA—the ‘Taylor curve’—in Chart 2. Moving up the curve is equivalent to lengthening the implicit targeting horizon (reducing the speed of disinflation following a shock), thereby lowering output variability.

Chart 2
The Taylor curve



Confronted with a trade-off between the volatility of inflation and the volatility of output, how should policy-makers respond? How quickly should we try to return inflation to its target? That depends upon the relative costs of inflation volatility, on the one hand, and output volatility, on the other. To determine the optimal targeting horizon, it is necessary to confront the menu of output/inflation variability choices described by the trade-off curve AA with the authorities’ preferences about output/inflation variability. These preferences are embodied in curves such as BB, which show combinations of output and inflation variability that result in the same cost to the central bank. The optimal targeting horizon is given by the point D, where the cost is lowest, that is where the two curves, AA and BB, are tangents.

In theory, once a central bank has decided how to react to a shock, interest rates or money growth are adjusted to respond to the shock while remaining consistent with meeting the inflation target in the medium term. The behaviour of the central bank can be described as a monetary policy reaction function; others talk in terms of ‘feedback rules’, such as the well-known Taylor rule.

Chart 2 highlights two important points concerning the targeting horizon. First, the optimal targeting horizon depends critically on the rate at which the central bank is prepared to accept more variability in inflation to reduce variability of output. Second, the optimal targeting horizon is likely to vary depending on the nature and persistence of shocks. In terms of Chart 2, different types of shock will be associated with different output/inflation variability curves. Simple rules such as the Taylor rule, which set interest rates

(1) The cost-benefit analysis of low inflation is not discussed here—see King, M A (1996), ‘Monetary Stability: Rhyme or Reason’, *Economic and Social Research Council Seventh Annual Lecture*, and Bakshi, H, Haldane, A G and Hatch, N (1997), ‘Quantifying some Benefits of Price Stability’, *Quarterly Bulletin*, August, pages 274–84.

(2) See Taylor, J B (1983), *Macroeconomic Policy in the World Economy: From Econometric Design to Practical Operations*, W W Norton and Company, New York.

according to deviations of output and inflation from their desired levels, do not distinguish between shocks.

Many supply shocks are price level effects. For example, changes in indirect taxes or commodity prices often affect the domestic price level, but do not in themselves change the underlying rate of inflation. An appropriate monetary response is to accommodate the first-round price level effect, while ensuring that changes in the inflation rate do not alter inflation expectations and lead to second-round inflationary or deflationary changes in wages and prices. Price level effects of this kind remain in the official inflation rate for at least a year. This is because the measure of inflation for the target is the increase in prices over the previous twelve months. Since shocks may take several months to have their full effect, a horizon of about two years is a reasonable one at which to try to bring inflation back to its target. But if shocks are sufficiently large—in either direction—then it may be sensible to extend the horizon at which inflation returns to its target level. Indeed, one of the main purposes of the open letters that, under the new arrangements, the Bank will be required to send to the Chancellor if inflation deviates by more than 1 percentage point from its target, is to explain, as the Chancellor wrote to the Governor on 12 June, ‘the reasons why inflation has moved away from the target . . . and the period within which you [the MPC] would expect inflation to return to the target’.

It is striking that central banks have been reluctant to acknowledge openly that monetary policy has two components, an inflation target and a response to shocks. Provided that an inflation-target framework is interpreted to include these two distinct elements of monetary policy, then the charge of the critics that inflation targets mean ignoring output is false. Moreover, by allowing the horizon at which inflation is brought back to its target level to depend upon the nature and size of the shocks hitting the economy, such a policy reaction is superior in principle to either rigid monetary targets, or rigid nominal demand or GDP targets, or Taylor rules. Of course, the advocates of monetary targets, or nominal demand or GDP targets, would not advocate that they be used rigidly. Equally, however, the advantages of these other targets in terms of maintaining stability in the growth of nominal demand can certainly be achieved by inflation targets.

There is one final and very important caveat. Despite my description of an optimal monetary policy reaction function, it is important for any central bank to realise the limitations to its ability to engage in counter-cyclical policy. Inadequacies of data, policy lags between changes in interest rates and their effect on inflation and, most important of all, inadequate knowledge of how the economy behaves, all mean that it is impossible to fine-tune the economy. As Milton Friedman pointed out in 1968, the ‘most important lesson that history teaches about what monetary policy can do—and it is a lesson of the most profound importance—is that monetary policy can prevent money itself from being a

major source of uncertainty’.⁽¹⁾ The Monetary Policy Committee is under no illusion that it can abolish the business cycle. Over a number of years, monetary policy can ensure that inflation averages the target of 2½%. But it cannot fine-tune output, and it would be a mistake to try to do so. If we can avoid the more extreme fluctuations of output that we have seen in the past, then monetary policy will have made a major contribution to stability in Britain.

What is the role of inflation forecasts?

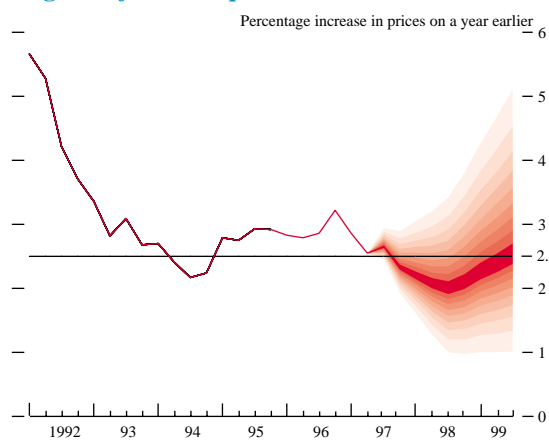
Because of the infamous long and variable lags between changes in monetary policy and their effects on inflation, policy must be forward-looking. That requires the use of a forecast. An inflation target does not mean setting policy according to the current rate of inflation. Rather, the MPC responds to movements in expected inflation. To raise interest rates only after inflation itself had started to rise would usually be too late to prevent a further rise in inflation, and would lead to instability in both inflation and output.

But forecasting, more than any other aspect of the discipline, brings economics into disrepute. The main reason for that is that forecasts are too often presented as a single number—as point forecasts. And prizes are awarded to those whose forecasts turn out to be correct in a single year, rather than close to the outturn over a number of years. Indeed, some newspapers give ‘golden guru’ awards on an annual basis. This is rather like awarding the Fields Medal for mathematics to the winner of the National Lottery for their understanding of number theory.

It is possible to conceal the fact that policy must be based on a forecast, by relying on intermediate target variables that have a relatively stable relationship with inflation, but there would be little point in using such an approach unless the intermediate variable was itself a reasonable forecast of future inflation. So in the Bank, we have come to the view that it is better to be explicit about the forecast that underlies policy decisions than to conceal the forecasting judgment in a form of words that requires careful deconstruction by professional ‘Bank watchers’. And such a forecast cannot be a single number. It must be presented for what it is, namely a probability distribution. Since February 1996, the Bank has published a probability distribution of inflation in the *Inflation Report* in the form of a fan chart. Chart 3 shows the fan chart from the August *Inflation Report*. The chart shows the relative likelihood of possible outcomes. The central band, coloured deep red, includes the most likely outcome and is chosen to be the narrowest band that contains 10% of the distribution: there is a 10% probability that inflation will be within this central band at any date. The next deepest shade, on both sides of the central band, takes the distribution out to 20%; and so on, in steps of 10 percentage points. The more uncertainty there is about the inflation outcome at any particular time horizon, the wider the bands, and the more gradually the colour fades. And if the risks are more on one side than the other, then the

(1) Friedman, M (1968), ‘The Role of Monetary Policy’, *American Economic Review*, Vol LVIII, No 1, pages 1–17.

Chart 3
August Inflation Report forecast



bands will be wider on that side of the central band. It looks, and is, rather like a conventional contour map.

The process by which the forecast is constructed is a lengthy one. It involves all the members of the MPC discussing and agreeing a set of assumptions on the basis of which the forecast is constructed. This involves discussions not only of the exogenous assumptions (about world trade for example), but also about the shocks that have occurred and the monetary transmission mechanism. As a result, the forecast published in the *Inflation Report* is agreed by the MPC. If some members of the MPC were to disagree with the forecast, then the dissenting minority would be entitled to insert an alternative forecast into the *Inflation Report*.

The publication of the inflation fan chart is one of the Bank's contributions to the analysis of monetary policy in recent years. And we are considering publishing fan charts for output as well as inflation in future *Inflation Reports*. A fan chart emphasises that, as in other areas of public policy, decisions should be based on probabilities. In other words, policy should reflect the balance of risks.

What role does the fan chart play in the setting of interest rates? For a given profile of interest rates, it shows the most likely outcome for inflation in the next two years or so and the risks around this central view. Since policy is a question of balancing risks, it summarises the information relevant to the MPC's decision of whether or not to change interest rates. But it does not provide a mechanical guide to policy. There are two difficulties in mapping directly from the fan chart to a decision on interest rates.

First, the appropriate response to a supply shock is to bring inflation back to its target level at a horizon that may, in principle, depend on the size and nature of the shock. For many purposes, a horizon of two years is a reasonable period within which to bring inflation back to target. But there may be circumstances, as I discussed earlier, where such an horizon would be inappropriate—if the shock was sufficiently large for example. If the profile for inflation were rising or falling at the two-year forecasting horizon,

then the optimal level of interest rates would depend on the horizon at which it was felt appropriate to bring inflation back to the target level.

Second, when there is uncertainty about the impact of an interest rate change on the economy, then, as Bill Brainard showed 30 years ago, it may be sensible to move cautiously to the level of interest rates that would be necessary to equate expected inflation at the appropriate horizon with the target level, rather than move rates abruptly and so risk injecting volatility into the economy.⁽¹⁾ We do not know how significant this 'Brainard uncertainty' is, but in practice central banks often move cautiously. Whether this is fully justified by the existence of such uncertainty, or is the product of excessive caution is a subject that merits further research. But it should be clear that, though the forecast provides a basis for decisions, it cannot be used mechanically. In the jargon of economists, the optimal policy reaction function cannot be defined simply over the expected inflation rate irrespective of the shocks hitting the economy.

The forecast provides a basis for making and explaining decisions. But its value lies mainly in raising questions, in a systematic manner, about where policy might go wrong. As Sir Samuel Brittan has pointed out, a debate between rival forecasts 'is likely to be barren. Even more barren would be an attempt to argue about demand components, eg whether investment would rise by 5% or 10%'.⁽²⁾ So the MPC have no ambition to be gurus, golden or otherwise; merely to be competent economists working together to assess the balance of risks to the inflation target.

What is the role of transparency?

An inflation target framework is more than a medium-term target for inflation. As I argued earlier, it must also include a strategy for reacting to economic shocks. In this sense, it does not represent a radical departure from other monetary frameworks. But perhaps the most important distinguishing characteristic of inflation-target regimes is the emphasis that they place on transparency and accountability. Let me start with transparency.

Paper money creates the temptation for governments to spring inflation surprises on an unsuspecting public as a hidden form of taxation. This 'time inconsistency' problem for monetary authorities has led to a search for credible monetary frameworks. The most popular among academics is a monetary rule that would bind the authorities to create money according to a predetermined criterion consistent with long-run price stability. Unfortunately, no such simple—or for that matter complicated—rule exists. Our understanding of the economy is inadequate. Any proposed rule would soon be made redundant by the results of new research. No sooner would the authorities have adopted a rule than improvements to the rule would appear. Knowledge increases over time, and it would be intellectual pig-headedness to stay with a sub-optimal rule. For any rule

(1) Brainard, W (1967), 'Uncertainty and the Effectiveness of Policy', *American Economic Review*, 57, pages 411–25.

(2) Brittan, S, 'Memorandum of accountability of the Bank of England', submitted to the Treasury Select Committee, August 1997.

to be feasible, there would have to be a rule for updating the rule itself. And I suppose that one could go further and argue that we would need a rule to update the rule that was used to update the rule, and so on.

But if simple rules are infeasible, we should not accept that the only alternative is the use of unfettered discretion by central bankers operating in secret. Rule-like behaviour is an advantage in monetary policy. It introduces predictability and helps to ensure that expectations are consistent with the objective of price stability, thus lowering the cost of achieving the inflation target. A more predictable monetary policy—not in the sense of stable interest rates, but rather a predictable reaction of interest rates to developments in the economy—reduces the ‘noise’ injected into the system by policy itself. As Friedman pointed out in the earlier quotation, monetary policy should avoid exacerbating fluctuations of output and employment by introducing unnecessary uncertainty. An explicit inflation target has the aim of reassuring economic agents that the Bank’s MPC will not allow money to increase at a rate that allows inflation to exceed the target on average over a number of years, and also that the MPC cannot pursue its own views about where inflation should be in the long run. An inflation target means that the central bank operates with ‘constrained discretion’, in the words of Bernanke and Mishkin (1997), rather than unfettered discretion.⁽¹⁾

A transparent monetary policy implies that announcements of changes in interest rates by the MPC might come as rather little surprise. The news would not be in the outcome of the meetings of the MPC, but in the economic statistics published during the month. Markets would be able to anticipate the likely reaction of the MPC, and the decisions by the MPC would follow a predictable policy reaction function. In contrast, an opaque monetary policy means that the news is the outcome of the deliberations of the MPC and not developments in the economy. In the extreme case, when monetary policy decisions were random, news about the economy would have rather little impact on short-term market interest rates, and more of the news would come from the monetary meeting itself. It is of course tempting for central banks to make their own meetings the main story. But transparency should lead to policy being predictable. It is all part of the view that a successful central bank should be boring, a referee whose success is judged by how little his decisions intrude into the game itself.

Some recent work by Andrew Haldane and Victoria Read at the Bank of England suggests that there is some evidence that boredom is starting to set in.⁽²⁾ They examined the extent to which forward market interest rates at different points of the yield curve jumped in response to changes in official interest rates. In the limiting case of perfect transparency, where the authorities’ reaction function is known with complete certainty, market rates would not respond to changes in official interest rates. There would be no news in official interest rate announcements.

Over the sample period January 1985 to March 1997, Haldane and Read found that changes in forward interest rates along the entire yield curve were systematically related to changes in official interest rates. But the average response of market rates to changes in official interest rates has fallen significantly since 1992. The introduction of the inflation-targeting framework appears to have made British monetary policy less exciting—and a good thing too.

How will the new Bank be accountable?

Independence and accountability go hand in hand. They are opposite sides of the same coin. An effective system of accountability is essential in order to give legitimacy to an independent central bank with delegated powers to set interest rates. Accountability is the precondition for independence in a democratic society.

At first sight, accountability might seem straightforward. But it raises the questions of to whom the Bank is accountable and for what. The Bank is accountable to the Chancellor of the Exchequer for implementing his inflation target, to Parliament through the Treasury Select Committee (TSC), to the Court of the Bank for the proper conduct of the MPC and, more widely, to the public at large. There are now five ways in which the Bank is accountable:

- (i) The decisions of the MPC itself are announced immediately following the monthly meeting at 12 noon on a Thursday. The minutes of those meetings are published on the Wednesday following the subsequent meeting—approximately five weeks later. These minutes contain not only an account of the discussion of the MPC, and the issues that it thought important for its decisions, but also a record of the voting of each MPC member.
- (ii) The *Inflation Report* will continue, and may well form the basis for accountability to Parliament. The original objective of the *Inflation Report* was, it is fair to say, to act as a disciplining device on Government. The Bank’s *Report* would set out its views of the likely implications for inflation of decisions taken (or not taken) by the Chancellor. Now that the power to set interest rates has been delegated to the MPC, the *Inflation Report* plays a rather different role. It is now an instrument of accountability. It is one of the principal ways in which the explanations of the MPC can be assessed and subjected to scrutiny by outside commentators.
- (iii) Appearances before the TSC by one or more members of the MPC will be more frequent than hitherto. It will be natural for the MPC to be asked to appear before the TSC following each *Inflation Report*, as suggested by the Chancellor. Hitherto, the Bank has typically appeared before the TSC twice a year following the Budget and the Summer Forecast. The rationale for this was not entirely clear. The Bank had

(1) Bernanke, B S and Mishkin, F S (1997), ‘Inflation Targeting: A New Framework for Monetary Policy?’, NBER Working Paper, No 5893, *mimeo*.

(2) Haldane, A G and Read, V (1997), *Central Bank Secrecy and the Yield Curve*, Bank of England, *mimeo*.

no responsibility for either the Budget or the Treasury forecast, and there was a danger of such appearances providing an opportunity for Committee members to focus on alleged differences between the Bank and Treasury. Now it is possible for TSC to hold the Bank to account for its own actions. This should greatly improve both the accountability of the Bank and the focus of TSC hearings. The TSC has been considering how it will fulfil its new role, and their report on this was published this morning. It contains a number of important recommendations, which we shall study carefully.

- (iv) The MPC is required to send an open letter to the Chancellor if inflation is more than 1 percentage point on either side of the target of 2½%. Given past experience of inflation volatility, it is likely, even allowing for the change in policy regime, that the MPC will have many opportunities to restore the lost art of letter-writing to British life. And it is important to stress that avoiding the need to write such a letter is not the objective of monetary policy. The inflation target is not a range of 1½% to 3½%, it is a target of 2½% on average. Indeed, one of the main purposes of the open letters is to explain why, in some circumstances, it would be wrong to try to bring inflation back to target too quickly. In other words, the MPC will be forced to reveal in public its proposed reaction to large shocks.
- (v) Finally, the MPC is accountable to the Bank's Court for the procedures it adopts and the proper conduct of its business. The 16 non-executive members of the Bank's reconstituted Court will be required to report annually to Parliament on the conduct of the Committee, and the Bank's *Annual Report* will be debated in Parliament.

How these forms of accountability will work in practice is at this stage hard to say. Doubtless we shall learn a good deal as we go along. But if any of you were in any doubt as to how monetary policy could possibly be a full-time job, let me assure you that these provisions for accountability will take up any time remaining from our activity of analysing the economy and making decisions on interest rates.

The complexity of the 'to whom' part of accountability surely contrasts with the simplicity of 'for what'. The inflation target is 2½%, and, at first sight, it might seem easy to compare the outturn for inflation with the target. In practice, however, matters are less simple for two, by now familiar, reasons. First, unpredictable shocks affecting both inflation and output mean that inflation will deviate from the Bank's central projection. Second, long lags between changes in interest rates and their effect on inflation mean that it takes time to offset the effects of such shocks. Taken together, those two reasons imply that, looking backwards, over a short period, or even over a few years, it would be impossible for the MPC to hold inflation at exactly 2½%. So the test is whether inflation averages 2½% over a number

of years. But it is unlikely that the public, or at least the TSC, will wish to wait that long. And looking forward, the combination of uncertainty and policy lags means that it is rarely possible to say that a decision was clearly right or wrong.

So there is a need to devise a form of accountability that goes beyond the simple comparison of outturn and target. One possibility is to compare the distribution of inflation outturns with the Bank's *ex ante* probability distribution for inflation. But this changes each quarter. A more promising avenue is to require the MPC to explain its actions and the reasons underlying them clearly and openly to outside scrutiny. In this way, the explanations of why inflation deviated from target can be assessed by outside commentators and a judgment made about the quality of the MPC's decisions. This indeed is the focus of the TSC report.

There is one further advantage of an explicit inflation target. Central bank councils that operate without an explicit target given to them by government are subject to speculation about which members are 'hawks' and which are 'doves' on inflation. For the new MPC, such speculation is beside the point. Each member has been appointed to achieve the inflation target of 2½%. Of course, there are differences of views and emphasis on the monetary transmission mechanism, but we are all striving to achieve the same inflation target.

Conclusions

The guiding principle of monetary policy is to look ahead and act early. If interest rates are left unchanged until inflation itself starts to rise or fall, then it will be too late to prevent swings in both inflation and output that will be damaging to our economic performance. The experience of the 20th century has shown that there are many opportunities and temptations for discretionary monetary policy to create inflation. Simple, or for that matter, complicated, rules for setting interest rates do not exist. They would be undermined by new research on better and improved rules that got rid of the bugs in the first rule, as frequently as software packages are released. Taylor rule 1.0 would quickly become Taylor 1.1, followed by Taylor 2.0 and I think we have probably already reached Taylor 6.0. Inflation targets are a practical response to the fact that knowledge increases over time. They are a form of 'constrained discretion'. Although inflation is assuredly a monetary phenomenon in the medium term, to restrict one's attention only to the money numbers would be to throw away a great deal of important information in other indicators. Equally, it is important to listen to a variety of views. One of the contributions of the new Monetary Policy Committee is to provide a forum in which ideas and information can be pooled. This is the optimal response to decision-making under uncertainty in a world in which no one individual has a monopoly of wisdom nor of information. And the new MPC has led to a sea-change in our discussions on inflation. Now that the buck stops with

the MPC, and it has, in that popular expression, to make 'hard choices', there is a seriousness of discussion that was not always present before.

But if the MPC adds to the quality of decision-making, there is also an additional requirement for transparency and accountability. This is crucial to the democratic legitimacy of an independent central bank. The distinction between goal independence (in which the central bank chooses both the target and the instrument) and instrument independence (in which the central bank sets interest rates and the elected government sets the target) is an important feature of our system, and is embodied in the Bank of England Bill. And

since the inflation target is set by government, there is little point in speculating about the identity of 'hawks' and 'doves' on the MPC. Each member has been appointed to hit the government's inflation target.

The inflation target and the *Inflation Report* represent successful innovations in the way central banks operate in the 1990s. The United Kingdom has been very much at the forefront of these developments. To borrow a phrase from a recent political speech, 'The Bank of England may not be the biggest central bank in the world, nor any longer the mightiest, but it can be the best'. That is certainly a target at which we should aim.