



BANK OF ENGLAND

Speech

Monetary Policy: Theory in Practice

Address given by

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The theme of this speech is the convergence between the theory and practice of monetary policy over the past decade. It discusses the important changes that have taken place over recent years which have transformed the way in which central banking is conducted. Mystery and secrecy have given way to transparency and openness. And the role of economists - both in central banks and in the academic study of monetary policy - has been central to this change. The speech considers three features of the 1990s that have driven this convergence. First, the increasing adoption of inflation targeting throughout the world as a framework for monetary policy. Second, the increased attention paid to promoting the transparency of policy. And third, the new interest in monetary policy in an environment of low inflation. The speech also looks at challenges for the future, for both central bankers and the academic community.

Introduction

My theme today is the convergence between the theory and practice of monetary policy over the past decade. That is why I have titled my talk, "Monetary Policy: Theory in Practice". But it is really a story about people, places and, especially, institutions. For monetary policy, institutional arrangements matter; none more so than the structure of central banks. Central banks have had a very good decade. Their reputation has never been higher, and they find themselves in a position of power and responsibility unrivalled in their history.

At the same time, there has been a transformation in the way in which central banking has been conducted. Monetary policy used to be a dark art, practised by magicians, and wrapped in secrecy. When I joined the Bank of England in 1991, I was fortunate enough to be invited to dine with a group that included Paul Volcker. At the end of the evening I asked Paul if he had a word of advice for a new central banker. He replied - in one word - "mystique". That single word encapsulated much of the tradition and wisdom of central banking at that time.

It is truly remarkable how much has changed over the past decade. The mystery and mystique has given way to transparency and openness. The increasing role of economists - both in central banks and in the academic study of monetary policy - has played a major role in that change.

I shall illustrate my thesis of a convergence between the theory and practice of monetary policy by reference to three features of the 1990s. First, more and more countries have adopted inflation targeting as their framework for monetary policy. Over the past year alone, a leading emerging market, Brazil, and a major industrialised country, Switzerland, have adopted inflation targets.

Second, and linked to the spread of inflation targets, much attention has been paid to promoting the transparency of policy. It is difficult to listen to a speech on domestic or international financial policy these days, without hearing about transparency. And mine will be no exception. The communication of policymakers' intentions with a view to enhancing their credibility has come to play a central role in monetary

policy. The rise to prominence of inflation targets, on the one hand, and transparency, on the other, reflect the central importance of expectations in our models of economic behaviour. Examples range from the rational expectations revolution to the analysis of the present state of Japan as a liquidity trap.

The third feature of the 1990s is the new interest in monetary policy in an environment of low inflation. This will require, as Alan Greenspan described to this luncheon two years ago, a "deeper understanding of the economic characteristics of sustained price stability". For practitioners of central banking, one of the challenges will be how to anchor expectations of the price level in the distant future. I shall suggest that inflation targeting can easily be extended to incorporate the desirable features of long run price level targeting. And for theorists of central banking, I shall argue that to understand how monetary policy works will mean delving deeper into how quantities of money and liquidity affect risk premia in a whole variety of financial markets.

But I want to start by describing the convergence of theory and practice in monetary policy over the past decade. Inevitably, much of what I shall say is based on personal experience as an academic turned central banker.

Economists in the policy world

I joined the Bank of England as Chief Economist in the spring of 1991. It was an inauspicious start. Within three weeks, BCCI had collapsed, sparking a continuing debate about the regulation of international banks. In 1992, sterling collapsed and the following year the rest of the ERM collapsed as well. At the end of 1994, Mexico collapsed, followed in 1995 by the collapse of Barings. In 1996, monetary and financial policies were in good shape, but, following measures to prevent the spread of BSE, the British beef industry collapsed. In 1997, it was the turn of the British Government to collapse, followed later in the year by much of Asia. In 1998, Russia and then LTCM collapsed. And earlier last year the Brazilian exchange rate regime collapsed. To most people's astonishment, nothing has so far collapsed in 2000. Not a promising track record you might think.

But I am in good company. Economists who move into the policy world belong to an international club. And it is striking how many academics, having come to know each other well in one phase of their career, have continued to work closely together on policy questions at the international level. Whether through the IMF and World Bank, or through groups such as the G7, or simply bilateral contacts, I have been struck by how often my path crossed with former friends and colleagues such as Larry Summers, Alan Blinder, Janet Yellen, Alice Rivlin and Martin Baily in the United States, Stan Fischer, Michael Mussa and Joe Stiglitz in international institutions, and Otmar Issing, Jacob Frenkel and the late Michael Bruno in other central banks. More recently, John Vickers, Alan Budd, Willem Buiter, Charles Goodhart and Sushil Wadhvani have all joined me as members of the new Monetary Policy Committee at the Bank of England.

Of course, non-economists will always point to the dangers of delegating decisions to the so-called experts. We all know the myriad jokes about economists. And the cult of the amateur is still revered by many. On his appointment as Financial Secretary to the Treasury in the 1930s, Duff Cooper wrote that,

"I had feared that my limited acquaintance with political economy and my ignorance of finance would prove serious handicaps, but within a week of my appointment I had to wind-up a debate on currency in the House of Commons and, speaking without the slightest knowledge of the subject, I was able, by drawing attention to the discrepancies in the remedies proposed by the previous speakers, all of them experts, to create a favourable impression and to earn many congratulations."

Fifty years of amateurs in economic policy - aided and abetted by an economic establishment that seemed to believe that inflation was always and everywhere a real phenomenon - led to two decades of high and volatile inflation in Britain. Inflation averaged 13% a year during the 1970s, with a peak of no less than 27% in 1975, and 7% a year in the 1980s. Only a deep recession in the early 1990s brought it to below 5%. For a country whose economic history was founded on a stable monetary and fiscal framework, and which could claim that prices in Germany rose in only one month (October 1923) by more than prices had risen in the UK since the arrival of William the Conqueror, the post-war record of economic management was a dismal failure.

This experience culminated in the dramatic and forced withdrawal from the Exchange Rate Mechanism on 16 September 1992. There are moments when new ideas come into their own. This was one of them. In the weeks after our departure from the Exchange Rate Mechanism, the UK had a floating exchange rate and no nominal anchor for the price level. Such an anchor was urgently needed. We decided to adopt and formalise what we regarded as best practice in other central banks. This was to look ahead at the likely outlook for inflation, given current policy, and to adjust interest rates to keep inflation on track to meet some desired level, while allowing current inflation to reflect unexpected shocks in order to prevent widespread fluctuations in output and employment in the short run. All this was embodied in a formal commitment to an explicit numerical inflation target at which monetary policy should continuously aim, looking ahead about two years.

A second, and crucial, aspect of the new framework was the commitment to transparency and openness about both the objectives of monetary policy and the reasons for individual decisions about the level of interest rates. This commitment was embodied, initially, in the publication of a regular Inflation Report by the Bank of England. First published at the beginning of 1993, our quarterly Inflation Report has been the main vehicle by which the Bank explains to the public its views on the economy. And it has been copied by a number of central banks around the world.

The next step was the granting of independence to the Bank by the new Labour government in May 1997. An inflation target and an emphasis on transparency remained at the centre of the new arrangements. The inflation target was defined as a symmetric point target of 2½%. The target is set by the Government and the

achievement of that target is delegated to a new Monetary Policy Committee (MPC) comprising nine members, five executive and four external non-executive members who are professional economists. Decisions on interest rates are determined by majority vote among the MPC at its monthly meetings and the minutes of the discussions, together with the voting record, are published less than two weeks following the announcement of the decision, which is always at 12 noon on the second day of the meeting. The whole process is systematic and transparent in a way that would have been unthinkable only ten years ago.

After 2½ years, the arrangements have worked well. Fears that divided votes would undermine the credibility of the Committee have proved unfounded. Differences of view there have been. Over the past two years - 24 meetings in total - there have been only 4 occasions when the Committee has been unanimous. But explaining openly to the public the nature of the uncertainties and difficulties in judging the appropriate level of interest rates has proved successful. Indeed, it has added credibility to the nature of the process. As I remarked in a speech last year, the motto of the MPC is "divided we stand, united we fall". The symmetric nature of the inflation target has made it easy to explain why interest rates sometimes go down and sometimes go up, depending on the state of the economy and the prospects for inflation.

Most important of all, the performance of the UK economy has been good. Since October 1992, the average rate of inflation has been 2.6%. And, apart from one month, which was affected by the timing of indirect tax increases, inflation has been between 2-3% for three years. Moreover, since 1992 the growth rate of output has averaged 2.8% a year, above the inflation rate, and there have now been 30 consecutive quarters of positive economic growth in the UK, an unparalleled period of growth in the post-war period. Bond yields have fallen as the credibility of the new arrangements has improved. When the UK left the Exchange Rate Mechanism in September 1992, 10-year bond yields were more than 100 basis points higher in the UK than in the US. Now, our 10-bond yields are actually lower than those in the US.

So much for recent UK experience. But why have a dozen or more other countries also adopted inflation targets and transparency?

The case for an inflation target and transparency

The main case for an inflation target is the political economy of central banking: the incentives facing central bankers and the process by which monetary policy is set. Paper money creates a temptation to spring inflation surprises on an unsuspecting public. This problem of "time inconsistency" has led to a long and rather unproductive debate about the relative merits of rules versus discretion. Neither extreme is attractive. No simple - or for that matter complicated - rule exists which, if followed mechanically, would be a desirable way of setting monetary policy. Our knowledge of the economy is inadequate. Any rule would soon be made redundant by the results of new research. A central bank Governor implementing a rule would live in fear that the next post would bring a NBER working paper showing that a new rule outperformed the existing one. For any rule to be feasible, there would have to be a rule for updating the rule itself. And one could continue ad

infinitum. This is not to say that ideas such as the Taylor Rule, cannot play a very valuable role in forcing central bankers to ask themselves questions as to why interest rates have been set at the level they have. But their role is to promote a serious intellectual discussion within the central bank, not substitute for it.

Equally, unfettered discretion exercised by central bankers deciding in secret is undesirable because it does not provide incentives for good behaviour. Rule-like behaviour increases predictability, helping to ensure that expectations are consistent with the stated inflation target. An explicit inflation target should also constrain the central bank to behave in a way that is consistent with the target. In the words of Ben Bernanke and Rick Mishkin, an inflation target means that the central bank has constrained rather than unfettered discretion.

Constrained discretion allows the central bank to implement an optimal monetary policy reaction function. An inflation target framework does not mean that monetary policy is concerned solely with inflation. Movements in commodity and oil prices, or unexpected changes in the exchange rate or, indeed, indirect taxes, may temporarily affect inflation. But the central bank should not try to offset these in the short run. It chooses a horizon over which inflation is brought back to the target following an unexpected shock in order to reduce fluctuations in output and employment. Since inflation is defined as the increase in prices over the previous twelve months, any unexpected shock will remain in the measured inflation rate for at least twelve months, and usually longer because of lags in the transmission mechanism. Hence it seems sensible for the central bank to target inflation something like two years ahead.

It is crucial to explain the need to look ahead. Forecasts are probability distributions, not point estimates. It is disappointing that some forecasters still publish point estimates. And even worse, some commentators provide annual awards for so-called "golden gurus" whose point estimates turn out to be closest to the realised values of the variables which they were forecasting. This is rather like giving the Fields medal for mathematics to the winner of the National Lottery for their understanding of number theory. And that is why the Bank of England publishes probability distributions for forecasts in the form of fan charts for both inflation and output growth. It is also important to remind people that, in assessing the performance of a decision-taking body, it can hit the target for the wrong reasons as well as miss the target for the right reasons. There are both type one and type two errors.

A transparent monetary policy reaction function means that the news should be in developments of the economy not in the announcements of decisions by the central bank. It is of course tempting for central banks to make their own meetings the main story. But transparency should lead to policy being predictable. Hence a successful central bank should be boring - rather like a referee whose success is judged by how little his or her decisions intrude into the game itself.

Challenges for the future

In the final part of my talk I would like to discuss two challenges for the future - the first for central bankers and the second for researchers in money and finance.

Inflation targets may have been all the rage over the past decade, but the idea that monetary policy should target the price level has a long and respectable pedigree dating back at least to Irving Fisher and Maynard Keynes. The case for price stability suggests that it is the stability of the price level in the long run which creates confidence in the monetary standard. Nominal contracts can then play an important role. For example, the long-term lender will know what her return will be in real terms. In contrast, under inflation targeting the variance of the price level increases without limit as deviations of inflation from the target level are treated as bygones. There is base level drift in the price level.

So why not target the price level? The conventional answer is that to return prices to their target level in the period following an initial shock would imply significant volatility of output. That is true. But why not select an optimal horizon over which the price level is brought back to some desired pre-determined path. And in the public eye there is a much less clear distinction between price level and inflation targeting than in the academic literature. Let me give a simple example. As I have explained, the Bank of England's Monetary Policy Committee has an inflation target of 2.5% a year. Members of the Committee are held accountable for their votes on interest rates by Parliament. At the end of our terms of office, Parliament might well ask what the average inflation rate had been during that period. Had we met our inflation target over our terms of office? But by asking that question the implicit criterion would in fact be price level targeting. The Committee would be asking whether the price level at the end of the period was close to its desired pre-determined path implied by the objective that prices should rise by 2.5% a year.

An average inflation rate target is, therefore, akin to price level targeting. And it can be achieved by a policy reaction function that contains an error correction mechanism for deviations of the price level from its desired path. A simple example of this would be a modified Taylor Rule in which the arguments determining interest rates would include not simply the deviation of inflation from its target and of output from its trend path, but also a term including the deviation of the price level from its desired path. The key choice is the horizon over which the price level is brought back to its desired path. It would make little sense to try to do so quickly because that would indeed induce greater volatility of output. But the benefits of predictability of the price level are seen in the longer run. So it would make sense for the horizon relevant to the price level to be something closer to, say, twenty years, compared with a two year horizon over which to aim to return inflation to its target. In this way it would be possible to combine the advantages of the 19th Century achievement of stability and predictability of the price level in the long run, with a 20th Century reduction in short run fluctuations in inflation and output. Such an extension of inflation targeting would be a monetary policy fit for the new century. Moreover, in circumstances, such as those in Japan, where short-term interest rates are already zero, and, as stressed by Paul Krugman, monetary policy needs to raise expectations of

the future price level, the mixture of price level and inflation targeting has exactly the desired impact on expectations.

The second challenge is to research in money and finance. John Cochrane has recently surveyed the "new facts in finance". He argues that the most natural explanation of a number of empirical phenomena in finance is slowly changing risk premia related to business cycles and aggregate financial distress. The empirical failure over short time horizons of both the uncovered interest parity (UIP) theory of exchange rates and the pure expectations theory of the term structure of interest rates reflects factors that can be described as "risk premia".

Why is this important for monetary policy? Consider the current debate on monetary policy in Japan. Short-term interest rates have been virtually zero in Japan for the past year. Although there are now signs of economic recovery, many commentators have urged the Bank of Japan to expand the monetary base. Open market operations, it is argued, should concentrate on purchases of long-term government bonds, foreign currency or even private sector assets. But what is the mechanism by which increases in base money affect demand and output when short-term interest rates are zero? It is unlikely that the transmission mechanism is an increase in real money balances - they are too small relative to other forms of wealth. Rather, an increase in the monetary base will affect demand by its influence on the yields of a wide range of assets. But with short rates stuck at zero, the pure expectations theory of the term structure and the UIP theory of exchange rates provide no way for monetary policy to affect those yields, other than through changes in expectations of future monetary policy.

But these theories ignore risk premia. If an increase in money can - as Marvin Goodfriend recently and Allan Meltzer for a long time have argued - reduce the marginal value of liquidity services, then monetary expansions will lower risk premia, raise asset prices and, in turn, raise demand and output. The link between money and risk premia on a broader range of financial assets is likely to be through the liquidity services afforded by money, which in turn is related to the "demand for immediacy", to use the terminology of Sandy Grossman and Merton Miller, over ten years ago, by the holders of those assets. So a full explanation of the transmission mechanism of monetary policy - both at zero rates of interest and more generally - will require a general equilibrium theory of risk premia, and how those premia are affected by monetary policy.

It would be nice to think that, just as in cosmology where breakthroughs come from the joint study of the very small and the very big, insights will come from linking, the high frequency analysis of individual asset prices in finance with the low frequency study of business cycles in monetary economics. That would certainly merit a joint luncheon of your two associations!

Conclusions

Over the past decade, the traditional mystery and mystique of central banks have been replaced by transparency and openness. And for good reason. The emphasis on expectations, fundamental to modern macroeconomics, has been absorbed into practical central banking. And central banks, more than any other part of government, have, around the world, been invaded by economists. The result has been a growing convergence of the theory and practice of monetary policy. A combination of inflation targets and transparency is a practical result of that convergence. Whether this application of theory in practice is successful will be a major test of our profession. Experience so far suggests that we should be, as central bankers always are, cautiously optimistic.