



BANK OF ENGLAND

# Speech

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## Interest Rate Changes – Too many or too few?

Speech given by

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## **Introduction**

It is a great pleasure to be here with you tonight. It is now almost ten years since the Bank of England was given independence to set interest rates, and the Monetary Policy Committee (MPC) sprang into being. These ten years have seen many changes in the economy both UK-wide and in the Tees Valley. Here unemployment has fallen from 7.1% to 3.8%, with a rising proportion of people active in the labour market, and rising employment rates. With the chemicals and steel industries enjoying a period of strength, there are encouraging signs of improvement in the trend of value-added per head relative to the rest of the UK. And regeneration has recently been boosted by the announcement that Middlesbrough is to be the site of a second-tier regional casino, further evidence of greater economic diversity. It's a positive story.

The first ten years of the MPC has supported these positive trends – for the UK as a whole growth has averaged 2.8%, and inflation, surprisingly, has remained within a one percent range either side of the 2% target. Both inflation and growth have been more stable than the experience of the previous three decades. Ten years is long enough to enable some analysis of issues around the MPC's behaviour, and of whether that behaviour has changed over time. Also, almost six years since I joined the MPC, it's an opportunity to reflect on my own experience of being a policy-maker.

I focus here on the question which in an obvious sense is the one which pre-occupies each of us at every meeting - does the news and analysis of the past month add up to a case for changing interest rates? Since the first meeting in June 1997, the MPC has met 119 times, and rates have been changed at 34 of these meetings. The peak of interest rates during the MPC period was 7.5%, reached in June 1998. The low point for interest rates was 3.5%, reached in July 2003, the last in the series of cuts which broadly followed the significant falls in equity markets between 2000 and 2003. Curiously, Bank Rate today, at 5.25%, is now back to that prevailing when I joined the MPC in 2001.

The discussion describes briefly some of the theoretical arguments which have been advanced about the timing of interest rate changes, and about how policy should respond to news. Then I look at how the MPC's actions compare with theoretical models of how monetary policymakers behave, and whether we appear to follow a gradualist approach. In this context, it is also of interest to consider how individual MPC members behave, and finally whether the MPC's behaviour differs from that of other central banks.

I also consider the present economic conjuncture, to what extent this is presenting the MPC with new challenges, and how these questions about the timing of interest rate changes, and policy strategy might apply to today's circumstances.

### **The timing of interest changes – theoretical considerations**

Much external commentary on individual voting behaviour on the MPC seeks to classify us as 'doves' or 'hawks'. But I would certainly reject this. If we were pre-disposed to be either 'soft' or 'hard' with regard to keeping inflation low, the implication would be that we would be failing to do our job - of managing inflation in order to achieve a symmetric target. Interest rate decisions are approached within a shared basic framework which is forward-looking - aiming to prevent movements away from the target anticipated around 18-24 months after the interest rate decision. Policy is pre-emptive - looking to move early in the event of a threat to the target, implying that decisions will only reflect recent CPI outturns to the extent that these are judged to contain information about inflation further ahead. Of course, there will be disagreements at a particular time about whether a change in base rates is necessary, either reflecting different judgements about the central forecast for CPI inflation, or about the risks around it.

Disagreements are not always about the economic outlook and the risks, however. They can also arise because of a different view about the appropriate monetary strategy, although the two cannot always be clearly separated. Two aspects of strategy relate to timing: gradualism (which could broadly be described as whether a required move in interest rates should be implemented in stages, rather than all at once) and waiting (which here I will generally use to refer to caution about making a

change in direction in the path of interest rates.) However, the term waiting might also be used in another sense, to talk about waiting for particular piece of information, or indeed waiting for the more sophisticated analysis of news which the MPC undertakes during a forecast round.

### *Gradualism*

One strand of discussion about monetary policy strategy discusses how uncertainty should affect policymakers' behaviour. In particular, this looks at whether there is a case for making the entire interest rate change judged necessary in response to a given shock immediately, or in several steps.<sup>1</sup> A number of arguments have been put forward in favour of a more gradual approach. The key one refers to uncertainty about how much inflation will respond to a given change in interest rates, due to the fact that the parameters of our model of the economy cannot be known with precision. This is frequently referred to as Brainard uncertainty, after his seminal article<sup>2</sup>. A second reason for gradualism results from uncertainty about the most recent economic data - the element of noise, relative to news, in early data estimates increases the risk of overreaction to changes in economic conditions.

However, there are other arguments suggesting that gradualism is not always the right approach. Policymakers looking at the conjuncture may be unclear about some aspects of the underlying model of the economy (model uncertainty) – perhaps because it is a period of rapid structural change, or because of the size and nature of the shock which has occurred. In these circumstances, it can be shown that a gradual approach is not always justified<sup>3</sup>. Or, the view taken of the balance of risks may be judged to indicate that acting slowly increases the probability of a bad outcome in which inflation moves substantially away from target.

In practice, I have found that the considerations being weighed when taking the monthly interest rate decision are such that I am often balancing concern about overreacting to news (leading to unnecessary economic volatility), against the fear of not responding robustly enough to changing conditions (and so acting too little, too

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<sup>1</sup> See Batini et al (1999) for a summary of this topic

<sup>2</sup> Brainard (1967)

<sup>3</sup> Sargent (1999)

late, necessitating a larger correction at a future date). There are few months which point clearly to a gradualist, or to a more robust, approach.

### *Waiting*

One definition of waiting is caution about making a change in interest rates which reverses the direction of the previous change. An early move back towards tightening after a period of loosening, or vice versa, tends to create the impression that the previous set of changes had moved too far, and therefore could be damaging to credibility. Equally, this suggests that clear evidence in support of any change of direction is needed, as the risks attached to a second reversal (concerns about provoking sharp money market movements and public appearance of policy confusion) may increase the cost of a mistake.

In addition, it has been argued<sup>4</sup> that too frequent reversals would reduce the ability of Bank Rate changes to affect longer-term interest rates. This ability arises because when the central bank is believed to be pursuing a gradualist policy, then a change of short-term interest rates in a new, upward, direction can gain added traction by altering expectations of interest rates further along the yield curve, tightening monetary conditions further. However, there is a possible contradiction here. If the purpose of changing Bank Rate gradually is to avoid unnecessary volatility, then if the market sees through this tactic to some extent then the risk of undue tightening or loosening remains. (Of course, if a subsequent move in Bank Rate proves unnecessary, then the market will undo some of its shift, and this might be preferable for credibility reasons to a larger change in policy rates which is then partly unwound).

In approaching the month-by-month decision on interest rates over the past six years my general approach, in the context of the above discussion, has been consciously to seek to move early in response to indications that future inflation was likely to deviate from the target. This has the clear advantage of enabling future small moves in the same direction if new data suggests this is necessary, and lessens the risk of the need for a sharper change in Bank Rate at a later date. I have therefore tried to put more

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<sup>4</sup> Woodford (1999)

weight on reducing the risk of a big policy mistake, than on worries over short-term questioning of credibility if policy reversal proves to be needed<sup>5</sup>. But this does not mean I have always sought to respond mechanically to deviations from target at around the two-year forecast horizon. The other key factors I have taken into account include the path of the inflation projection over the whole forecast period, and when appropriate, the risk of creating unnecessary volatility in the path of output growth. An example of this was the MPC meeting on 7 and 8 November 2001 when most members favoured a reduction in interest rates of 50 basis points, on the basis that "a cut [would] underpin confidence domestically, by underlining the Committee's continued readiness to act to support demand in line with achieving the inflation target over the medium term". One of the arguments against the cut was that "too large a cut might fuel consumer borrowing growth excessively, weakening household balance sheets and adding to risks for the future...", thus increasing output volatility.

### **Interest rate rules**

The above discussion suggests that central bank behaviour might be expected to demonstrate two features – some tendency towards gradualism (making a series of small changes in the same direction in response to a piece of news) and a tendency towards inertia (waiting for longer than might be expected before making a change in interest rates in the opposite direction to that of previous movements). Does the evidence in the UK with regard to the period in which the MPC has operated, indicate that behaviour conforms to these expectations?

#### *Evidence from Taylor rules*

Gradualism can be assessed by comparing central bank behaviour with the actions which would have resulted from the use of a simple Taylor rule, in which the interest rate responds to movements in inflation and in a measure of the output gap. When this approach is used to model actual central bank behaviour, it is often found necessary to add in the lagged interest rate. The coefficient on this variable is usually close to one, and this is interpreted as evidence of gradualism. However, there are a number of reasons to be cautious about this conclusion. Other factors need to be

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<sup>5</sup> Since 1997 policy reversals have only occurred six times

taken into account – such as the fact that the policymaker uses realtime data, not final, or that there may be variables not included in the model (‘unobserved’ variables), but which policymakers are also responding to. If these variables are persistent, then the policymakers’ response may appear gradual when modelled by a simple Taylor rule.

Estimation of Taylor rules for the UK, looking at two time periods (1976-1996 and a shorter period 1997-2006, since the establishment of MPC independence), gives results which suggest that policy was gradual in both periods. In the MPC period, it took around seven quarters to make half of the optimal policy change and slightly longer for the earlier period. This result is not much changed by using different definitions of the output gap, nor by using real-time data. However, these results are not entirely satisfactory, as there are signs of model misspecification.

And, as argued above, in practice movements in variables other than the inflation rate and output gap will influence interest rate decisions. Following previous work for the US<sup>6</sup>, which allows the interest rate to respond to some (in the Taylor rule) unobserved variables, preliminary results for the UK suggest much less smoothing than in the simple Taylor rule (less than two quarters to make half of the optimal policy change in the MPC period), and less model misspecification. These results also suggest that the policy rate seemed to move more quickly to its optimum level in the MPC period, compared to the previous twenty years. About half of the variation in this ‘unobserved’ component can be explained by a measure of movements in the equity risk premium (see Chart 1), suggesting that financial market conditions may be at least part of the variables omitted in simple Taylor rules. Further, if revisions to the output gap are also included, then well over half of the variation can be explained. This extension of the simple Taylor rule therefore suggests that there is less evidence of inertia in central bank decisions, which could be interpreted as sub-optimal, than initial work had implied.

### *The inflation forecast and MPC reaction function*

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<sup>6</sup> Gerlach-Kristen (2004)

A different way to assess this question was also put forward recently by Charles Goodhart<sup>7</sup>. This looked at how much the MPC decisions responded to an ex-ante forecast, the forecast which he estimates the MPC would have published for inflation at the two year horizon if interest rates were left unchanged. (The ex-post inflation forecast in this case is the one published in the quarterly Inflation Report. If interest rates are unchanged, the ex-ante and ex-post forecast are identical.) Perhaps not surprisingly, given that the 2-year forecast is generally quite close to the target, he finds that the results here suggest that the MPC has acted aggressively to eliminate predicted deviations from the target. Using the same approach, but over a slightly longer period (1997-2006), a model based on a full policy response to ex-ante forecasts for growth and inflation fits the actual interest rate movement quite well (see Chart 2), with little evidence of interest rate smoothing at the quarterly frequency.

This is a little different from the results for interest rate gradualism estimated using the simple Taylor rule – but again this may not be surprising, as that rule uses current data, whereas policymakers are forward-looking. Taken at face value, this analysis might suggest that the history of MPC decisions implies a swift policy response to news.

However, there is an alternative interpretation of these results, which is that the forecast itself behaves in a gradualist manner. The two year ex-ante forecasts tend to deviate from target in the same direction for a number of quarters – on average three quarters for the MPC period. From my experience on the MPC, I would suggest a number of possible reasons. One is that the MPC learns over time about the size of the shock. A second is that there is structural change in a model parameter which the MPC realises only gradually. Thirdly, some pieces of news can be treated in a gradualist way, for example sharp changes in asset prices, so that they do not have their full effect on the forecast unless they prove to be more than just noise in the markets, to prevent the quarterly inflation forecast (and nominal interest rates) being unduly volatile.

### **MPC and activism and waiting**

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<sup>7</sup> Goodhart (2005)

### *Individuals versus whole committee*

I suggested that MPC members could be divided into groups according to their degree of activism (how often they voted to change interest rates) rather than the more familiar hawks or doves. One way to assess activism is to consider the probability that a member voted for a change in interest rates, having voted with the majority in the last meeting (in order to exclude serial minority votes for a change). Table 1 shows the results of the comparison of probabilities for individuals and for the whole MPC, calculated over the period June 1997 to February 2007. On average, with serial minority voting excluded, the mean probability for individuals is not statistically different from that for the whole MPC. There is considerable variation among members, with John Vickers, on this basis, having been noticeably the most active – but no sign of any particular skew, with the median probability close to the mean (Chart 3 and Table 1). If serial voting is included, Steve Nickell, Willem Buiter and Sushil Wadhvani appear to be more active than if it is excluded, as they had long periods of voting for change against the majority.

Over the past ten years there have been four periods in which interest rates were kept unchanged for at least eleven months. In the first of these (March 2000 to January 2001) the proportion of dissenting votes was above the average. However, in the other three this was not the case, suggesting that economic stability, rather than committee inertia, was the reason.

Over the whole period, the MPC has been more activist, measured purely in terms of the frequency of interest changes, than were the Chancellors in the period between the ERM crisis and the establishment of the MPC. However, this activity rate has tended to diminish over time. So it would be plausible to attribute this either to a more stable economy, or to greater credibility of the central bank, meaning that smaller and fewer interest rate changes would be required to achieve the inflation target. Some preliminary work looking for economic factors which are related to activity has not produced any clear results, although they suggest that higher past inflation volatility, or greater uncertainty about the one-year ahead forecast, are both linked with an increase in policy activism. An alternative explanation is that experience has led to a greater appreciation of the value of waiting (in a study of committee and individual

behaviour, Lombardelli et al suggested that the superior results from committee voting were because the committee learnt to be less activist.)<sup>8</sup>

However, one notable difference among groups of members is that the external members, those appointed to bring outside expertise and who are not permanent bank employees, are more activist than the internals. The probability of voting for a change, having been in the majority in the previous meeting, is around one-in-three for an external member, and somewhat lower for an internal. This difference remains even when allowance is made for the fact that external members typically serve shorter terms, and activity rates tend to decline with time. It is more difficult to account for this aspect of behaviour – and it is fair to point out that it is not true of all individuals. Both the Governors have measured activity rates a little above the average, whereas some of the externals (myself included, despite my activist inclinations) have been less active than the average.

### *Waiting*

The most notable characteristic of MPC voting behaviour, at least over the recent past, has been the tendency to change interest rates more frequently during a forecast round. This is observable both for the whole MPC and for individuals, and has become more marked in the 2002-06 period, roughly the second half of the Committee's existence. Looking at the minutes of the policy meetings, waiting for the greater depth of analysis which is possible in a forecast round is sometimes given as a reason for not changing rates. An example can be found in the minutes for July 5/6 2006: "But there was still considerable uncertainty about the National Accounts estimates for 2005, which had yet to be balanced. It was difficult to reach firm conclusions about the implications of the revisions for the overall balance of demand and supply until the data had been fully analysed in the context of the *Inflation Report* round."

However, I would argue that this is not the only reason for the observed behaviour. Experience suggests that while the forecasting round frequently does produce analysis which sheds light on some puzzles, it is just as likely to uncover new uncertainties –

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<sup>8</sup> Lombardelli et al (2002)

indeed the expression ‘confused at a higher level’ is a pretty good description of how I feel after twenty-three forecast rounds. A slightly different reason for rate changes occurring more frequently in forecast rounds is that the Committee then has two sorts of news – the regular flow of data news, plus news about the way in which the behaviour of the economy may be changing which is revealed through the regular reconsideration of the performance of the Bank’s model. This second sort of news is inevitably more difficult for outsiders to anticipate.

Other arguments for waiting for a month or so to gain greater certainty also need to be used with care. Sometimes there is a specific piece of news expected (for example, news about the January pay round, which accounts for around 20% of the year’s private sector settlements, by numbers of employees). This might be a reason for delaying a decision to change interest rates, if other evidence does not produce a clear-cut justification.

A similar argument for delay arises around the time of the annual ONS Blue Book, which often contains significant data revisions. But this is perhaps less easy to explain - while it is often used as a reason for waiting in the months just ahead of the Blue Book, it could apply to some extent to any month where a decision was taken on data which had not been through at least one Blue Book revision, and benefited from the additional information which the ONS have at that stage. So this becomes part of the more general issue around data uncertainty, where the MPC is presently seeking to improve our approach,<sup>9</sup> and to strike the right balance by better estimation of how much of the latest information is likely to be noise rather than news.

Overall, I have come to believe that arguments for waiting in this short-term sense can be over-emphasised. It is rare for another month’s information to produce much further clarity. Only when it is a finely-balanced decision, or when there are significant concerns about possible reversals (as discussed earlier) should these factors come into play.

### *Comparisons with other central banks*

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<sup>9</sup> Ashley et al (2005)

Several other central banks operate a similar monetary regime, but they all differ from each other in terms of their remit, and their institutional structure. Here, I briefly consider whether these differences also translate into differences in terms of activism. (Although some caution is needed, as neither the sample size, nor the time period, is large enough to draw very firm conclusions.)

Taking a sample of eight central banks, including the Federal Reserve and the European Central Bank, over the ten year period of the MPC, all have been similarly active in terms of interest changes per year (see Table 2). This activity rate does not seem to be affected by the committee structure (the Bank of England and the Fed are the only two with individual accountability). All central banks wait longer - on average four times longer - before moving interest rates in the opposite direction to the previous move (ie making a reversal).

A tendency to make a policy change more often alongside a forecast is observable for several other central banks, although this is only statistically significant for the Bank of England, Reserve Bank of Australia and Reserve Bank of Canada. These banks all use their forecast as a key means of communicating about policy, although this is also true of the Reserve Bank of New Zealand, the Riksbank and the Norges Bank, who have much less of a tendency to be more active at meetings linked to a forecast. It does not seem to make a difference in this respect if the forecast is 'owned' by the staff of the bank or by the policy makers.

## **The present economic situation**

What are the main factors which the MPC is concerned about in the current economic situation, and to what extent might arguments about gradualism and waiting affect our decisions in the coming months? From the perspective of output growth, this seems to be a relatively stable period. Over the recent past, growth has been at around the rate that most current estimates would consider as the UK's supply potential; the period of weaker quarterly growth in early 2005 has been followed by five quarters of growth around 0.7% or a little stronger. Present survey indicators for output, taken together, give no reason to suppose that this pace is set to slacken. Indeed, the latest (February) CBI survey for manufacturing has the strongest output expectations for 12 years. And while the Chartered Institute of Purchasing Managers service sector survey output indicator has fallen back a little from its December peak, it remains above the average of the past ten years.

Encouragingly, the outlook for export demand also remains positive – growth in the euro-area, the UK's largest market, was 3.3% in the year to the fourth quarter of 2006, the strongest annual growth rate for six years. And despite growing concerns about household sector indebtedness in the US, most forecasters still expect growth of over 2.5% for this year, but here we are well aware of the need to be watchful for indicators of a more significant downward risk for consumer spending.

In the February *Inflation Report*, the MPC's central projection for the UK was broadly for a continuation of the recent pace of growth. But, as we always point out, there are risks around this central projection. Since the Report was published, there have been several pieces of news which could alter this outlook. Most notably, around the beginning of this month there was a bout of turbulence in the equity markets, with several of the major markets falling by over 5% in a week. At the same time, associated among other factors with concerns over sub-prime mortgage lending in the US, credit spreads widened for some riskier assets. This movement certainly needs to be put into a longer-term context (Chart 4); for example the FTSE All-Share index rose by over 13% in 2006, and had risen a further 3.5% in 2007 prior to this fall. Although it has since remained volatile, at the end of last week (16 March) it was little changed from the level at the time of the previous MPC meeting (7 and 8 March).

However, these financial market events, which seemed to be triggered by a combination of relatively small factors, were a reminder of underlying concerns about the low level of risk premiums implicit in the low level of real long-term interest rates, and in low credit spreads on more risky assets. It has been difficult to understand exactly what the factors have been driving these movements, and the associated high levels of asset prices. Consequently, it is not easy to assess the likelihood of a significant change in the risk premia apparently embedded in current valuations, with the associated risk of asset price volatility.

There has also been a more mixed picture for data on UK consumer spending. In 2006, quarterly consumer spending growth was quite volatile, but averaged 0.7% per quarter. Some slowdown in the first quarter of 2007 from the robust growth estimate for the fourth quarter of 2006 was perhaps to be expected, but the first estimate of retail sales for January was nevertheless surprisingly weak. While other indicators, such as business surveys for the retail sector, and indeed the reports of the Bank's Agents, painted a stronger picture, I would put some weight on the ONS data.

Additionally, there are some signs that the pickup in house prices growth through 2006 may be levelling out. As reported by the major lenders, monthly house price growth has continued to be quite strong in January and February. But a less robust picture is suggested by indicators further back in the purchase timeline, such as the new buyer enquiries and price expectations in the survey published by the Royal Institute of Chartered Surveyors. Following three Bank Rate increases since August, some sign of softening from the consumer and in the housing market is not a surprise, however. And as yet these are quite tentative and do not convincingly suggest a more abrupt slowdown than expected.

In any case, while the path of consumer spending will affect overall growth and therefore the likely balance of demand and supply, it is not risks to growth, but to the inflation outlook that are of most concern at present. The path of CPI inflation is set to be quite volatile over the next year or so, and the major question is how this volatile period may affect where inflation settles around 18 months to two years ahead.

Over the next few months, the price cuts recently announced by some major utility companies will take effect, and there may be further reductions in the pipeline. The final scale of this is not yet known, but, combined with the fact that last year domestic utility bills were rising, this may result in quite a sharp fall in the inflation rate, to below target in the most recent central projection. However, there are big uncertainties. Looking back at the period when industrial costs and final inflation were being driven up by rises in oil and gas prices, the overall CPI rose rather less than might have been expected. It is likely that weaker demand conditions in 2005, and perhaps awareness that the MPC remained focussed on keeping inflation at target in the medium-term, resulted in an environment where firms were cautious about raising prices. One consequence of this would have been downward pressure on profitability as input costs rose.

Given this background, as energy prices fall back and growth in the UK and abroad is robust, it is perhaps not surprising to find that firms' price expectations have picked up. The CIPS/RBS services output price series, while volatile, has generally been above its ten year average for the last six months. And as Chart 5 shows, the CBI manufacturing survey indicates price expectations in that sector are also at a high level. Comparing these with the official data for producer prices, price expectations appear to have been unduly strong in the recent past, but of course the official series is affected by recent falls in petroleum product prices. Excluding these, producer prices would show a stronger trend. It may be significant that the recent rise in price expectations is associated with a rise in a (smoothed) series for plant capacity as a constraint on output, also drawn from the CBI survey.

Whilst, of course, price expectations are by no means always realised, it seems likely that there is a little more upward inflation pressure in the short-term than might have been expected. But this is not easy to interpret. It might for example reflect the fact that the energy price rise and subsequent partial reversal were feeding through into final prices more slowly than the central projection allows for. Or, that firms were taking the opportunity to restore profitability. In these two cases, there might be little implication for CPI further ahead.

But equally this trend might reflect a tighter balance of demand and supply, both domestically and globally, than we think prevails. The evidence on the domestic pressure of demand and supply is mixed. The pickup in unemployment from early 2005 to autumn 2006 has only been partially reversed and together with subdued wage growth suggests a modest amount of slack in the labour market. However, survey evidence on prices and capacity suggest that firms are perhaps a little above the trend rate of capacity utilisation. Greater pressure of demand on supply would be an upward risk to future CPI, particularly if the period of above target inflation resulted in a rise in inflation expectations among those setting prices.

How does this relate to the earlier discussion of gradualism and waiting? There are certainly some arguments today for gradualism. For example, the historically high level of household debt has resulted in some uncertainty about how the consumer will respond to interest rate changes, and that would support a gradual approach.

But perhaps more importantly, much of our present uncertainty relates to how the UK economy has responded to the volatility in energy prices, and also to how inflation expectations may be formed in these circumstances. The price shocks of the past few years have resulted in a different set of issues for the MPC than the (mostly) demand shocks of earlier in the decade. Our uncertainty may be of the more fundamental kind, about whether our present model of the economy will prove a good guide, and in this case gradualism might be a less appropriate strategy. So interest rates might be expected to be rather responsive to some kinds of news (for example, news about inflation expectations, or pricing behaviour), and the behaviour of the MPC might become more active because of the changing economic circumstances.

The period of financial market turbulence has also highlighted another feature of my time on the MPC. There are some risks which the MPC has frequently discussed over the past six years, such as a disorderly adjustment of the large US current account deficit, or a significant fall in sterling prompted by the UK's own current account deficit. Other 'big risks' which have surfaced during this period include a sharp fall in the UK housing market, related to worries over rising household debt. The impact on inflation for these risks would come from large movements in financial markets or asset prices, and in my view these developments can only be responded to when they

occur. In some cases I have spent all six years waiting for these risks to crystallise – and remain ready to respond if they do.

But obviously not all risks are of that type. In contrast, I have also experienced several periods of concern about significant upward pressure on wages. However, in fact, the past six years have generally seen remarkable stability for earnings, and even in the present wage round, despite taking place against a background of higher inflation, the early indicators are that pay pressures have only picked up a little – although we cannot as yet take this for granted. In this case monetary policy has probably been able to affect the outcome, due to clear understanding among wage bargainers of our commitment to the inflation target, and evidence that policy does respond to inflation risks arising from pay (in either direction).

## **Conclusions**

As the MPC approaches its tenth birthday, it is possible to look at how its behaviour in practice measures up against the theoretical account of how monetary policy decisions should be taken, and how committees are likely to behave. In taking a decision each month, the key question is always whether the latest news amounts to a case for change – a question that I find no easier to answer after six years on the MPC than I did at the first meeting. While the news over the month itself can generally be quantified, uncertainty about exactly how this news will affect the economy in coming quarters, and also about the data itself, means that it is not always appropriate to react fully.

Empirical work looking back at the MPC's behaviour compared to the predictions from a simple Taylor rule (in which the interest rate responds to movements in inflation and in estimates of the pressure of demand on supply) suggests that the MPC appears to have been only slightly more responsive to news than policymakers in the UK over the previous twenty years. But an extension of the Taylor rule has been estimated to allow for variables 'unobserved' in the simple rule (such as financial conditions, or real time data), which are likely to have affected policy decisions. In this case, policy during the past ten years seems to have been substantially less gradual.

Estimates of forward-looking Taylor rules also suggest a less gradual approach, as policy appears to have responded quite aggressively to offset predicted deviations of inflation from target. However, it is possible that this is a little misleading. I consider it likely that the forecast itself can respond to news in a gradual manner – in particular to asset price news which tends to be volatile and where there is a good argument for not responding to every shift in the market. But the general conclusion is that the MPC does not seem to have behaved in a particularly gradualist manner.

Comparisons with other inflation-targeting central banks suggest that two features of MPC behaviour are shared more widely. Policymakers seem to be slow to change policy in a new direction, because of concerns about loss of credibility if there has to be an early reversal of direction. Over the past ten years a sample of eight central banks with similar monetary regimes have waited on average four times as long before making a policy reversal, as before deciding to move interest rates further in the same direction.

Another aspect of behaviour which is similar across the central banks is a tendency to make changes in interest rates more frequently when producing a new forecast, although this has been the most marked in the case of the UK. However, some behaviours will also change over time (the MPC has tended to become less activist through its ten-year life, but this may partly be due to the changing economic environment), and in this case too much weight should not be put on past patterns of behaviour when making predictions.

A noticeable feature of MPC voting patterns is that external members have been more active on average than internal (although, rather to my surprise, I personally have been relatively inactive). It is difficult to pin down reasons for this, although it would be plausible to suggest that externals will often bring with them different ideas about policy strategy, and that therefore the present mix of members, and turnover of members, is healthy in preventing any tendency towards complacency.

Turning to the present economic situation, it could be summed up as a central projection of robust and rather stable growth. There is a strong outlook for exports,

which should be positive news for this region. But there is considerable uncertainty about inflation, both the short-term path and where the inflation rate will settle in the medium-term. The main risks to the growth projection are around the outlook for the household sector in the US, and in the UK, with worries in both cases around the housing market and high debt levels. However, in the UK there are so far only tentative indications of weaker consumer spending, or of a softening housing market.

For inflation, while short-term uncertainty is mainly due to the domestic energy market, and may be resolved over the next few months, the medium-term uncertainty is more pervasive. This is related chiefly to how the cost shock from past energy price rises has fed through into final prices, in the UK and globally, and to uncertainty about what is driving the present indicators of upward pricing pressure in the business surveys. This is a different kind of uncertainty from worries about demand which have been more usual during my time on the MPC, and I suggest that this may prompt a change in observed behaviour towards more frequent interest rate changes. Over the next few months, I will be monitoring these price surveys, and other indicators of inflation expectations, particularly closely.

## References

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## Charts and Tables

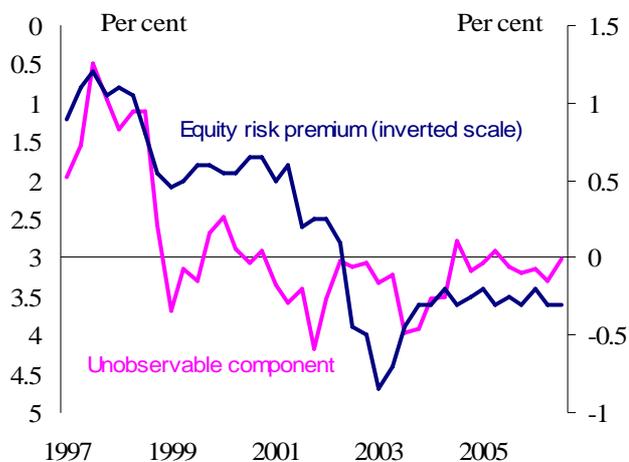
**Table 1: Probability that the MPC and its individual members voted for an interest rate change (are active), June 1997-Feb 2007**

	Committee	Individual members				
		Weighted mean <sup>1</sup>	Mean	Median	Max	Min
<b>Probability [Active<sub>t</sub>]</b>	0.28	0.34	0.33	0.33	0.61	0.14
<b>Probability [Active<sub>t</sub>   majority<sub>t-1</sub>]<sup>2</sup></b>	0.28	0.30	0.30	0.31	0.63	0.12
Data for individual members include members that have voted at least 10 times.						
<sup>1</sup> The weight given to each individual member in the aggregation of their probabilities is proportional to the number of meetings at which they voted.						
<sup>2</sup> Shows the probability the individual member was active given that they voted with the majority of the committee at the previous meeting.						

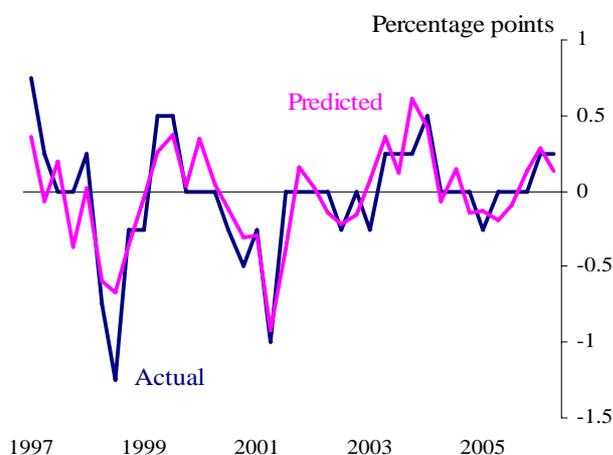
**Table 2: Comparison of monetary policy activity across different central banks**

	<b>New Zealand</b>	<b>Australia</b>	<b>Canada</b>	<b>US</b>	<b>Euro-Area</b>	<b>Sweden</b>	<b>Norway</b>	<b>UK</b>	<b>Mean</b>
<b>Probability [Active per meeting]</b>	0.42	0.20	0.46	0.46	0.22	0.37	0.37	0.28	0.35
<b>Meetings per year</b>	8	11	8	8	12	8	9	12	9.50
<b>Average activity per year</b>	3.45	2.16	3.64	3.87	2.57	3.06	3.29	3.38	3.18
<b>Decision making process<sup>1</sup></b>	Gov	Maj	Cons	Maj	Cons	Maj	Maj	Maj	
<b>Accountability<sup>2</sup></b>	Gov	Coll	Coll	Ind	Coll	Coll	Coll	Ind	
<b>Members on committee</b>	1	9	6	12	18	6	7	9	8.50
<b>Probability [Active per meeting   forecast]</b>	0.42	0.30	0.66	0.37	0.33	0.40	0.39	0.46	0.42
<b>Probability [Active per meeting   no forecast]</b>	0.42	0.14	0.33	0.44	0.18	0.34	0.36	0.19	0.30
<i>P-value of statistical significance<sup>3</sup></i>	<i>0.96</i>	<i>0.05</i>	<i>0.01</i>	<i>0.56</i>	<i>0.14</i>	<i>0.59</i>	<i>0.84</i>	<i>0.00</i>	
<b>Forecast owner<sup>4</sup></b>	Gov.	Comm.	Staff	Comm.	Staff	Staff	Comm.	Comm.	
<b>Forecast main tool for policy communication</b>	Y	Y	Y	N	N	Y	Y	Y	
<b>Sample period</b>	02/97- 02/07	04/99- 02/07	01/99- 02/07	02/97- 02/07	01/99- 02/07	01/99- 02/07	01/01- 02/07	06/97- 02/07	
<p><sup>1</sup>‘Maj’ indicates to majority voting, ‘Cons’ consensus voting and ‘Gov’ that the Governor has the final decision.  <sup>2</sup>‘Coll’ indicates that accountability is collective and members all defend the majority view, ‘Ind’ indicates that accountability is individual and members can publicly reveal that they disagreed with the committee’s decision.  <sup>3</sup>A <i>P-value</i> less than 0.05 is considered to mean that the probability of being active in a forecast round is significantly higher than that in a non-forecast round.  <sup>4</sup>‘Gov’ indicates that the Governor owns the forecast, Comm that the committee owns the forecast, and Staff that the Central Bank’s staff own the forecast.</p>									

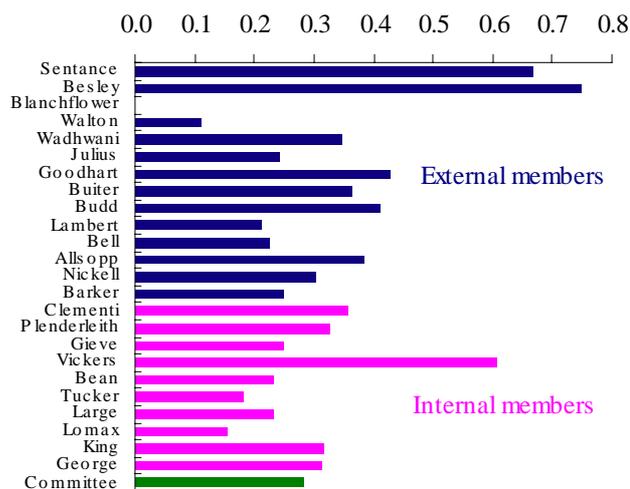
**Chart 1: Estimated unobservable variable and equity risk premium<sup>10</sup>**



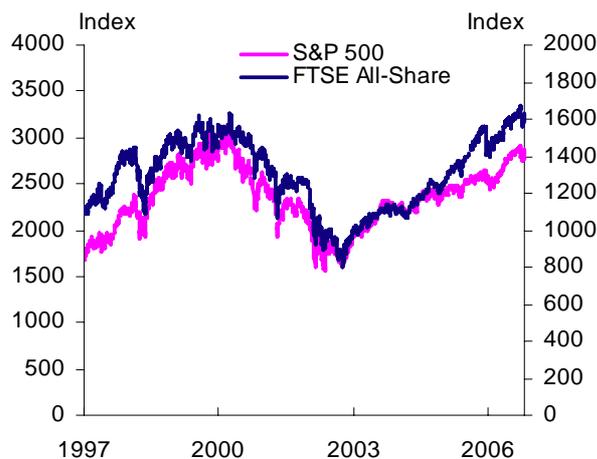
**Chart 2: Actual and predicted quarterly interest rate changes<sup>11</sup>**



**Chart 3: Probability of voting for a change given member was in majority last round**



**Chart 4: FTSE and S&P All-Share indices**

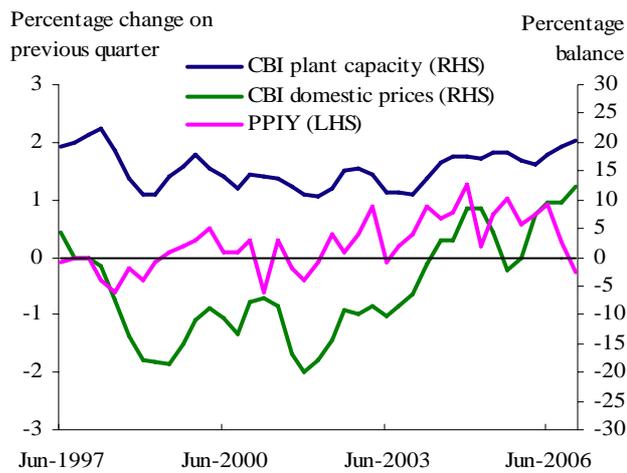


**Chart 5: CBI survey measures of price**

<sup>10</sup> Unobservable component derived from an estimated Taylor rule equation that allows for serial correlation in the residual (to capture general misspecification and unobserved variables). Equity risk premia implied by dividend discount model for FTSE 100.

<sup>11</sup> Predicted series based on estimation results for forward-looking Taylor rule where policy responds to ex-ante forecasts for inflation and output growth at the two-year horizon.

## pressures and producer output prices<sup>12</sup>



<sup>12</sup> Sources: ONS and CBI Industrial Trends Survey. CBI data smoothed. Plant capacity shows the percentage of respondents believing plant capacity will limit output over the following three months. Domestic prices shows the difference between the percent of respondents believing domestic output prices will rise in the following three months to those believing they will fall.