
Monetary policy news and market reaction to the *Inflation Report* and MPC Minutes

By James Bell of the Bank's Conjunctural Assessment and Projections Division and Robin Windle of the Bank's Sterling Markets Division.

This article describes the results of analysis carried out as background for the speech 'Inflation targeting in practice: models, forecasts and hunches', by Rachel Lomax, Deputy Governor for Monetary Policy, which is reproduced in this edition of the Quarterly Bulletin.⁽¹⁾ It examines the reactions of both economists and financial markets to different MPC announcements: the policy statement release immediately after the interest rate meeting; the Minutes of that meeting; and the Inflation Report. This article also examines whether the amount of perceived 'news' contained in interest rate decisions has changed since the MPC was established in 1997.

Introduction

Eight years ago the Bank of England was given operational independence. Since then, there has been a monthly meeting at which the Monetary Policy Committee (MPC) decides on the level of interest rates. Additionally, each quarter, following a forecasting process, the Committee agrees projections for future inflation and economic activity, which are published in the *Inflation Report*.

Interest rate decisions are usually announced on the first or second Thursday of each month, at the end of the MPC's two-day policy meeting. The *Minutes* of that meeting are then published 13 days later.⁽²⁾ The *Inflation Report* — published in February, May, August and November — is usually released six days after the interest rate announcement, and a press conference is held on the same day.

These three public statements — the interest rate announcement, the *Minutes* and the *Inflation Report* — are important communication tools for the MPC. Reflecting this, economists and financial market participants closely examine them to understand better the reasons for the MPC's interest rate decisions, and to see what 'news' they might contain about interest rates in the future.

This article examines the reaction to these public statements. We look at whether interest rate decisions have become better anticipated since the inception of the

MPC. We then assess the extent to which the three regular pieces of MPC communication influence expectations of how interest rates will evolve in the future.

A number of previous studies have examined market reactions to MPC communications, including Clare and Courtney (2001) using data up to mid-1999 and Lasaoa (2005), using data up to mid-2001. These studies found evidence that the apparent amount of 'news' contained in interest rate decisions had, on average, increased following Bank independence. But our analysis suggests that in more recent years, the average amount of 'news' may have declined. And the evidence is consistent with the quarterly production of the *Inflation Report*, including the MPC's updated macroeconomic projections, playing a more central role in the decision-making process.

Assessing monetary policy 'news'

Economists and financial market participants seek to anticipate the monetary policy decisions of the MPC. We can measure expectations of future interest rate decisions either directly, from surveys of economists, or indirectly, by using information from the prices of money market instruments.

(i) A survey-based measure of interest rate news

A few days prior to each monthly MPC decision, Reuters conducts a survey of economists (typically at major

(1) The results in this article update those represented in the Annex to Rachel Lomax's speech by including data up to and including the release of the April 2005 MPC *Minutes*.

(2) Before October 1998 the *Minutes* were published with a lag of six weeks.

investment banks). The economists are each asked to estimate the probabilities that the MPC will cut, raise or hold rates constant at the following meeting.⁽¹⁾ From these probabilities, we are able to calculate an average expectation. We can use the difference between that expectation and what the MPC actually decides a few days later as a proxy for the amount of news contained in the decision.

(ii) A market-based measure of news in MPC interest rate announcements

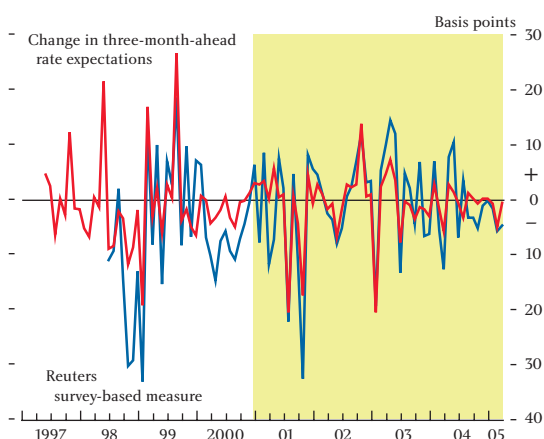
Expectations of how official interest rates will evolve several years into the future can be estimated using information from the prices of financial instruments. These interest rate expectations are known as ‘implied forward rates’. Indeed, the *Inflation Report* contains projections for output and inflation that are conditional on actual interest rates evolving in line with these market-based expectations three years into the future.⁽²⁾

If the MPC’s decisions turned out to be exactly as market participants were anticipating, then we would not expect to see significant movements in implied forward rates following policy announcements — market participants would have received no new information, and so would have little reason to reassess the outlook for interest rates in future. But a large movement in implied forward rates immediately following a monetary policy announcement might suggest that the MPC’s decision was not fully anticipated and that it provided extra news to market participants about the future path of interest rates. So calculating the size of the change in implied forward rates straight after a policy announcement gives us a metric of the amount of news contained in policy announcements. Here we consider the change in market expectations of interest rates three months into the future. But later in this article we will be considering expectations of interest rates further into the future.⁽³⁾

Chart 1 shows both the survey-based and the market-based measures of the news in monthly interest rate decisions. The blue line is calculated as the actual interest rate change announced by the MPC minus the

rate change expected in advance by the economists polled by Reuters (expressed in basis points). The red line depicts the change immediately following a policy announcement in market participants’ average view of what interest rate will be prevailing in three months’ time. The two measures look similar.

Chart 1
Market and survey-based measures of news in MPC interest rate announcements



Notes: Excludes special MPC meeting following 11 September 2001. The shaded area represents the period January 2001–April 2005.

Unlike the monthly Reuters’ survey, data on financial prices are available continuously. This means that we can measure market interest rate expectations at any given point in time. Using these data we are able not only to examine market reactions to interest rate decisions, but also the reaction to any other event. In the following sections of this article we will also examine the market reaction to the monthly publication of the MPC meeting *Minutes* and the quarterly *Inflation Report*.

Table A lists the MPC statements (interest rate announcements, the *Inflation Report* and the publication of the MPC *Minutes*) that seem to have contained the most news since the inception of the MPC in 1997. Only those events that resulted in changes in three-month-ahead interest rate expectations of 10 basis points or more are included.⁽⁴⁾ It suggests that unanticipated interest rate decisions have contained the largest amount of news for financial markets. Only three

(1) Reuters has been asking the economists to estimate the likelihood of a range of different possible rate decisions since July 1998. Prior to that, the survey asked respondents to specify only what they thought was the single most likely outcome.

(2) See the box ‘The interest rate assumptions in the projections’, on pages 42–43 of the August 2004 *Inflation Report*.

(3) Our measure of market expectations is derived from short sterling futures. Details of this data set can be found in Annex 2.

(4) In general, we look at the change in expectations between 11.30 am and 12.30 pm on the day of the announcement of the MPC decision, between 9.00 am and 10.30 am on the day of the MPC *Minutes* release and between 10.00 am and 11.30 am on the day of publication of the *Inflation Report*. In some instances the events took place at a slightly different time of day, so we have adjusted the calculation accordingly.

sets of MPC *Minutes* and one *Inflation Report* publication have resulted in a large change in implied rates.⁽¹⁾

Table A
Movements in sterling three-month implied forward rates greater than 10 basis points linked to MPC-related news (1997–2005)

Rank	News date	Change (basis points)	News item
1	08 Sep. 1999	26.4	MPC decision (+25 bps)
2	04 June 1998	21.2	MPC decision (+25 bps)
3	06 Feb. 2003	-20.8	MPC decision (-25 bps)
4	02 Aug. 2001	-20.8	MPC decision (-25 bps)
5	04 Feb. 1999	-19.5	MPC decision (-50 bps)
6	08 Nov. 2001	-17.6	MPC decision (-50 bps)
7	03 Mar. 1999	16.7	MPC decision (no change)
8	07 Nov. 2002	13.5	MPC decision (no change)
9	15 July 1998	12.6	MPC <i>Minutes</i>
10	05 Nov. 1998	-12.0	MPC decision (-50 bps)
11	06 Nov. 1997	12.0	MPC decision (+25 bps)
12	11 Nov. 1998	11.6	<i>Inflation Report</i>
13	22 Oct. 2003	11.5	MPC <i>Minutes</i>
14	14 Jan. 1998	11.4	MPC <i>Minutes</i>

The table also suggests that the amount of news in monetary policy announcements declined in the second half of the period: just five of these fourteen large moves in rate expectations have occurred since the beginning of 2001.

Has policy announcement news been declining?

We can use statistical tests based on the two measures in Chart 1 to examine formally the proposition that there has been a reduction in the amount of news contained in interest rate announcements.

To do this, we divide the period of the MPC's existence into two subperiods, June 1997 to December 2000 and January 2001 to April 2005 (corresponding to the shaded area in Chart 1).⁽²⁾

Table B shows the average absolute values of both the Reuters' survey-based and market-based news measures in the two subperiods.

Both news measures are smaller in the later period than in the earlier one. In both cases, the average magnitude of the rate news in the second period is a little under two thirds of the corresponding value for the earlier

period. Statistical tests suggest that this average decline in the amount of news is greater than could reasonably be accounted for by chance alone (ie the difference between the averages is statistically significant).

Table B
Has policy announcement news been declining?

	Average magnitude of rate news measure (basis points)	Number of observations
<i>Reuters survey-based measure:</i>		
1998–2000	11.0	30
2001–present	7.2	52
<i>Difference</i>	-3.8***	
<i>Market-based measure:</i>		
1997–2000	5.4	43
2001–present	3.6	52
<i>Difference</i>	-1.8*	

Notes: Significance test based on t-test for difference between two means. Significantly lower than zero at ***1%, **5% and *10% levels (one-sided). Excludes the special MPC meeting following 11 September 2001.

This reduction in the degree of news may be linked to a decrease in the frequency of rate changes. In 1997–2000, just over one third of meetings resulted in a change in the interest rate, whereas in 2001–05 it was closer to one quarter. The number of changes of 50 basis points has also fallen: there were three such changes to the repo rate in the earlier period but only one in the later one (all other changes have been of 25 basis points).

What might explain the apparent reduction in the size of news and the lower frequency of interest rate changes? One potential explanation is that continued experience of the current inflation-targeting regime has over time brought about a greater understanding of the interest rate-setting process, and how the MPC is likely to react to the economic shocks that come along. This might be expected to lead to fewer and smaller monetary policy surprises over time as interest rates become more predictable.

It may also mean that fewer changes to the policy rate become necessary. Expectations of where interest rates will go in the future are a key influence on economic activity and inflation today. With a greater experience and understanding of the policy framework, expectations of interest rates in the medium term may adjust more quickly to a level consistent with hitting the inflation target. In turn, this may necessitate fewer changes to the short-term interest rate controlled by the MPC. As

(1) It should be noted that we make no attempt to control for other events that occur in the time interval. In general no other economic releases coincide with MPC-related events, with the exception of the release of UK labour market statistics, which sometimes coincides with publication of either the *Inflation Report* or the MPC *Minutes*.

(2) Given the relatively small sample period, it is difficult to test for structural breaks. Our choice of the two periods enables us to examine timeframes of (approximately) the same size; our results are, in general, invariant to changes of one year either side of this breakpoint.

noted by the Governor (2005), it may be that ‘monetary policy was able to respond by less than would otherwise have been necessary because it affected expectations’.⁽¹⁾

But there are other possible explanations. One alternative is that the magnitude of shocks hitting the economy was greater in the first half of the sample (for instance, the Asian economic crisis). If some of the uncertainty about future changes in interest rates derives from uncertainty about the MPC’s reaction to these shocks, then the occurrence of fewer large economic shocks would be likely to lead to an increase in the ability of individuals to predict interest rate changes.⁽²⁾ That said, one can point to a number of significant shocks to the economy over the period 2001–05, including the impact of 11 September and the US recession, the rapid rise in UK house prices, and recent sharp rises in oil prices.

It is also possible that in 1997, following independence, the Committee perceived rates to be below the level consistent with the inflation target. If there was a desire to change interest rates in small steps (to ‘smooth’ interest rates) then several rate changes may have been necessary to get to the required level. Once there, we might expect the frequency of rate changes to fall. Even excluding 1997, though, the proportion of meetings in the earlier period resulting in a rate change remains at around a third — higher than in the more recent period.

Monetary policy decisions and the Inflation Report

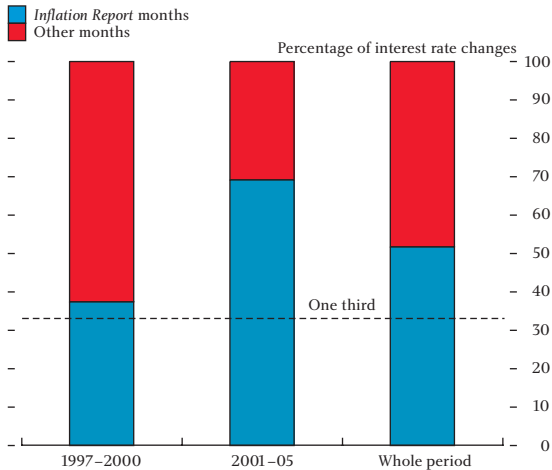
In four months of the year, the MPC’s interest rate decision is followed six days later by the publication of an *Inflation Report*. During the production stages of the *Report*, the MPC undertakes a thorough re-assessment of its three-year projections for output and inflation. It makes its interest rate decision in the light of that re-assessment and the detailed analysis that supports it.

Although the frequency of interest rate changes has fallen in recent years, the changes that have occurred have happened more often in *Inflation Report* months. Chart 2 depicts this graphically, while Table C presents the raw data.

Since the beginning of 2001, around two thirds of interest rate changes have happened in *Inflation Report*

months — a greater proportion than the one third that we would expect if rate changes were evenly spread over the months of the year. However, this was not the case in the earlier subperiod.

Chart 2
Proportion of interest rate changes in Inflation Report months



Note: Excludes special MPC meeting following 11 September 2001.

We can again use a more formal statistical test to examine the significance of these results. For the most recent sample period, our tests suggest that the apparent concentration of rate changes in *Inflation Report* months is indeed higher than we would expect just by chance, or random variation. By contrast, before 2001, no such pattern seemed to exist.

Table C
Are rate changes evenly spread over the months of the year?

	Rate changes		χ^2 test statistic
	Inflation Report months	Other months	
Whole period	15	14	4.41**
1997–2000	6	10	0.15
2001–present	9	4	7.54***

Notes: Test statistic for whether rate changes are distributed one third in *Inflation Report* months and two thirds in other months. Significantly different to zero at ***1%, **5% and *10% levels. Monte Carlo simulations were used to uncover the critical values. Excludes the special MPC meeting following 11 September 2001.

This apparent shift in behaviour is consistent with the quarterly *Inflation Report* and accompanying forecast having become more central to the policymaking process. Given its thorough re-evaluation of the medium-term prospects for inflation in these months, the MPC may be more likely to re-assess its view of the

(1) The Governor’s 2005 Mais Lecture (which is also published in this edition of the *Quarterly Bulletin*) discusses the importance of interest rate expectations in more detail.
(2) Perhaps consistent with this, the average surprise that relates specifically to official interest rate changes has fallen between the two periods; the fall in the survey-based measure is particularly large.

appropriate level of interest rates to meet the inflation target.⁽¹⁾

The result may also in part be linked to the previous finding that rate changes are less frequent in the second period. For the reasons noted above, fewer rate changes may have been necessary recently, and so the Committee may have been more willing to wait until a full assessment of the prospects for inflation could be carried out before adjusting the policy rate. The preparation of the inflation forecast associated with the publication of the *Inflation Report* provides such an opportunity for an in-depth analysis of the key issues affecting the risks to inflation.

Moreover, there is evidence that economists and others outside the Bank recognise the significance of the *Inflation Report*. Survey data suggest that, since 1997, economists have thought that a rate change was the most likely outcome on 22 occasions, of which almost two thirds were in *Inflation Report* months. That result is especially marked since 2001, as shown in Table D.

Table D
Are rate changes expected to be evenly spread over the months of the year?

	Expected rate changes		χ^2 test statistic
	<i>Inflation Report</i> months	Other months	
Whole period	14	8	9.09***
1997–2000	6	5	2.23
2001–present	8	3	7.68***

Notes: These expectations relate to the single most likely outcome envisaged by the economists polled by Reuters, ie the modal outcome rather than the mean described above. These data are available for the whole period spanned by the MPC. Test statistic for whether rate changes are distributed one third in *Inflation Report* months and two thirds in other months. Significantly different to zero at ***1%, **5% and *10% levels. Monte Carlo simulations were used to uncover the critical values. Excludes the special MPC meeting following 11 September 2001.

There is also evidence that the amount of news tends to be larger for a policy decision in *Inflation Report* months than in others. As shown in Table A, of the eleven MPC decisions associated with a market reaction of greater than 10 basis points, seven were in *Inflation Report* months.

Table E demonstrates this formally. Since 2001, the Reuters survey-based news measure associated with an interest rate decision in *Inflation Report* months is around one and a half times the news measure in other months. On the market-based measure, the result is even more persuasive: almost three times as large, and the result is strongly statistically significant.

Table E
Is there more news in policy announcements in *Inflation Report* months?

	Average of news variable (basis points)		
	<i>Inflation Report</i> months	Other months	Difference
<i>Reuters survey-based measure:</i>			
Whole period	10.6	7.6	+3.0*
1998–2000	12.6	10.0	+2.6
2001–present	9.5	6.1	+3.4*
<i>Market-based measure:</i>			
Whole period	5.9	3.6	+2.3**
1997–2000	5.5	5.3	+0.2
2001–present	6.3	2.3	+4.0**

Notes: Significance test based on t-test for difference between two means. Significantly lower than zero at ***1%, **5% and *10% levels (one-sided). Excludes the special MPC meeting following 11 September 2001.

Not only are three-month-ahead market interest rate expectations more influenced by interest rate decisions in *Inflation Report* months, but so are expectations of rates further into the future (Table A1 in Annex 1). This seems to suggest that the market perceives interest rate decisions in *Inflation Report* months as containing extra information about the future.

The following section considers how interest rate expectations are influenced by the publication of the *Inflation Report* itself, and the subsequent release of the MPC meeting *Minutes*.

Market reactions to the publication of the *Inflation Report* and MPC *Minutes*

The MPC releases three key monetary policy statements in an *Inflation Report* month: the interest rate decision, the *Inflation Report* itself and the *Minutes* of the MPC meeting. Chart 3 demonstrates the average effect that these statements have had on market interest rate expectations since 1997. In particular, it shows the average absolute change in expectations for interest rates at different points in the future: three months, six months and twelve months ahead.

As Chart 3 shows, market interest rate expectations are more likely to react to the rate decision itself than to either the subsequent publication of the *Inflation Report* or the MPC *Minutes*.⁽²⁾ Why might that be the case?

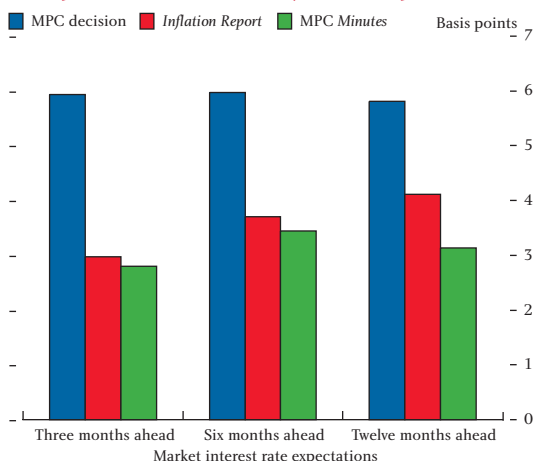
As previously noted, a week before the publication of the *Inflation Report*, the MPC makes its interest rate decision with the knowledge of the forthcoming inflation projection. The decision may, therefore, convey the

(1) Similar arguments are made by MPC member Richard Lambert in 'Inside the MPC' in the Spring 2005 *Quarterly Bulletin*, by Deputy Governor Rachel Lomax in her speech 'Inflation targeting in practice: models, forecasts and hunches' in this edition of the *Quarterly Bulletin*, and by Chief Economist Charles Bean in 'The formulation of monetary policy at the Bank of England' (with Nigel Jenkinson), in the Winter 2001 *Quarterly Bulletin*.

(2) Details of the statistical tests confirming this result can be found in Table A2 in Annex 1.

majority of the information about the Committee's analysis, such that the actual publication of the economic projections in the *Inflation Report* itself contains less incremental news.

Chart 3
Average absolute change in interest rate expectations following MPC announcements and publications in an *Inflation Report* month



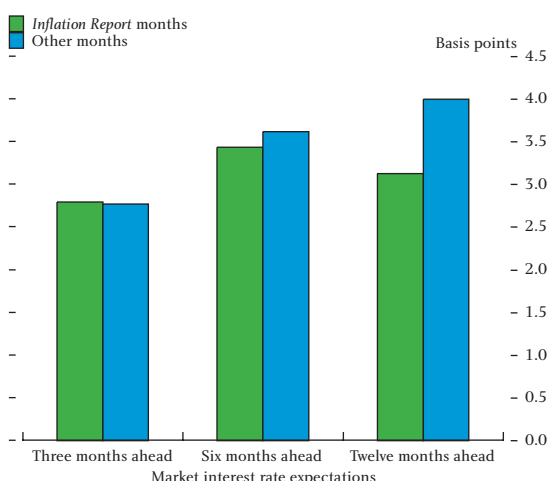
However, the *Inflation Report* and the MPC meeting *Minutes* provide a considerable amount of detailed information about the MPC's judgement on the economic outlook over the medium term. As a consequence these publications might be expected to have a greater influence on expectations of interest rates further into the future. There is some evidence that this is indeed the case (Chart 3); the average impact of an *Inflation Report* release is larger on rate expectations twelve months into the future than on those at a shorter horizon.

Chart 3 suggests that the impact on rate expectations of the release of the MPC *Minutes* is only very slightly larger at longer horizons. But the effect is more noticeable in months in which an *Inflation Report* is not published, as Chart 4 shows. This is perhaps because, in those months, the MPC *Minutes* are the sole detailed description of the MPC's view of medium-term prospects.

The MPC *Minutes* also contain information on how individual Committee members voted at the monthly interest rate-setting meeting. It reveals whether the interest rate decision was arrived at unanimously or by a split vote. However, we found little compelling evidence that interest rate expectations react, on average,

differently to *Minutes* that reveal a split vote to those that reveal a unanimous one. If anything, the reaction to a unanimous vote tends to be slightly larger — perhaps because it is perceived that unanimity provides a more powerful statement about the likely future path of interest rates. But it is not at all obvious why this should be the case. And the difference in reactions found here is not large enough to make the argument especially persuasive.⁽¹⁾

Chart 4
Average size of reaction to MPC *Minutes* releases



Note: Excludes special MPC meeting following 11 September 2001.

Nonetheless, the impact of the policy announcement itself on expectations does seem to be significantly larger when the rate decision was agreed by a split vote — even though market participants would not at that time know whether the decision was split or not. One potential explanation is that split votes might occur when the outlook for inflation — and thus interest rates — is most uncertain. Under those circumstances, it may be that the policy announcement has a larger impact on market expectations than otherwise because it resolves some of the uncertainty about the interest rate outlook.⁽²⁾

Conclusion

In this article we have examined the degree of 'news' in interest rate decisions and the impact of the publication of the *Inflation Report* and MPC *Minutes* on expectations of what interest rates will be in the future.

We have found evidence from both survey and market-based measures that recent interest rate

(1) Gerlach-Kristen (2004) finds that the direction of Committee members' dissent in the monthly vote provides information about future rate changes over and above that already embodied in market expectations.

(2) More detail on the reaction of market interest rate expectations to unanimous and split vote policy announcements and MPC *Minutes* can be found in Table A3 in Annex 1.

decisions have appeared to contain less news than in the first half of the MPC's existence.

The number of interest rate changes has fallen in recent years compared with the earlier years of the MPC. At the same time, the proportion of interest rate changes that occur in an *Inflation Report* month has risen, perhaps reflecting the increasing role of the quarterly forecast process in policymaking. The economists surveyed by Reuters have expected interest rates to change more often in *Inflation Report* months, and there is some evidence that market participants believe that

rate decisions in those months contain more information about the future than decisions in other months.

On average, the interest rate decision itself tends to affect expectations of rates in the future by more than the publication of the *Inflation Report* or the MPC meeting *Minutes*. This is particularly true for expectations of rates in the near term. But there is some evidence that the publication of the *Minutes* and *Inflation Report* have a greater impact on expectations of interest rates further into the future.

Annex 1: Test results

Table A1
Change in market rate expectations following an interest rate announcement

	Average of news variable (basis points)		
	<u>Inflation Report months</u>	<u>Other months</u>	<u>Difference</u>
<i>Three-months ahead:</i>			
Whole period	5.9	3.6	+2.3**
1997–2000	5.5	5.3	+0.2
2001–present	6.3	2.3	+4.0**
<i>Six-months ahead:</i>			
Whole period	6.0	3.5	+2.5**
1997–2000	5.3	5.3	0.0
2001–present	6.3	1.9	+4.6**
<i>Twelve-months ahead:</i>			
Whole period	5.8	3.0	+2.8**
1997–2000	5.0	4.6	+0.4
2001–present	6.5	1.7	+4.9***

Notes: Significance test based on t-test for difference between two means.
Significantly higher than zero at ***1%, **5% and *10% levels (one-sided).
Excludes the special MPC meeting following 11 September 2001.

Table A2
Market reactions in *Inflation Report* months

	Average absolute change in three-month-ahead interest rate expectations (basis points)			<u>Difference between reaction to policy decision and Inflation Report publication</u>	<u>Difference between reaction to policy decision and MPC Minutes publication</u>	<u>Observations</u>
	<u>Policy decision</u>	<u>Inflation Report publication</u>	<u>MPC Minutes publication</u>			
Whole period	5.9	3.0	2.8	+3.0**	+3.1**	31
1997–2000	5.5	3.4	2.4	+2.1	+3.1**	14
2001–present	6.3	2.7	3.1	+3.6**	+3.2**	17
<i>Difference</i>	0.7	-0.7	+0.6			

Notes: Significance test based on t-test for difference between two means.
Significantly higher than zero at ***1%, **5% and *10% levels (one-sided).
Excludes the special MPC meeting following 11 September 2001.

Table A3
Does the market react differently to split votes?

	Reaction to policy announcement (basis points)			Reaction to <i>Minutes</i> (basis points)		
	<u>Split vote</u>	<u>Unanimous</u>	<u>Difference</u>	<u>Split vote</u>	<u>Unanimous</u>	<u>Difference</u>
<i>Three-month-ahead rate expectations:</i>						
1997–2000	6.7	3.2	+3.5**	2.8	3.3	-0.5
2001–present	4.9	1.4	+3.5***	2.5	2.8	-0.2
Total	5.7	2.3	+3.5***	2.7	3.0	-0.3
<i>Six-month-ahead rate expectations:</i>						
1997–2000	6.4	3.5	+2.9**	3.5	4.0	-0.5
2001–present	4.6	1.5	+3.1***	3.1	4.0	-0.9
Total	5.4	2.4	+3.1***	3.3	4.0	-0.7
<i>Twelve-month-ahead rate expectations:</i>						
1997–2000	5.2	3.7	+1.5	3.5	4.5	-1.0
2001–present	4.2	1.7	+2.5**	3.2	4.2	-1.0
Total	4.7	2.6	+2.1**	3.4	4.3	-1.0*

Notes: Significance test based on t-test for difference between two means.
Significantly higher than zero at ***1%, **5% and *10% levels (one-sided).
Excludes the special MPC meeting following 11 September 2001.

Annex 2: Data set

Short sterling contracts settle on three-month Libor rates on the third Wednesday of the delivery month. So, for example, the March 2006 short sterling futures contract provides an implied three-month Libor rate on the third Wednesday of March 2006.

The short sterling intraday data are provided by Euronext.liffe. This consists of data giving the price of every trade for a given contract. The data were filtered to give trade price data at five-minute intervals, with the price at each interval equal to the last traded price.

To derive a constant maturity forward rate we linearly interpolate between adjacent contracts. So, for example, in February 2005, three months forward was in May 2005. So to derive a three-month constant maturity forward rate we linearly interpolate between the rate implied by the March and June 2005 contracts.

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