

A Perspective on Monetary Policy Transparency and Communication

Malcolm Edey and Andrew Stone

1. Introduction

The subject of central bank communication has received growing attention in recent years, at the same time as central banks themselves have increased their efforts at communicating with the public. One reason for these trends has been the strengthening of central bank independence, which has brought with it a corresponding focus on public accountability. Another factor has been an increasing recognition of the broader importance of good communication for promoting confidence in the policy regime and creating a stable environment for expectations. This requires, among other things, that the thinking behind monetary policy decisions be clearly explained. The efforts made by central banks in that direction over the past decade or so can be summed up under the general heading of increased transparency.

Transparency, however, is not a one-dimensional concept. Central banks have available to them a number of different means of communication, including economic reports, media statements, forecasts, minutes and the like, and they have adopted a range of differing communication strategies, at least partly reflecting differences in their institutional structures and histories. The nature of these differences, their rationale, and whether existing communication strategies can be further improved, remain subjects of ongoing debate.

With that background, this paper aims to do three things. First, it looks at the economics of monetary policy communication, and attempts to draw out what the available evidence entitles us to say about the costs and benefits of particular forms of transparency. The purpose here is to provide a basis for distinguishing between good and bad arguments for changes to existing practices. Second, it reviews recent developments in the communication practices of central banks in order to bring out the similarities and differences in current approaches. Third, it looks in more detail at the role of inflation forecasts in the communication strategy, which seems to be at the heart of current differences of approach among inflation-targeting central banks.

2. The Economics of Transparency and Communication

We begin by addressing the question of what actually constitutes monetary policy transparency, before briefly reviewing the theoretical and empirical literature on the economic implications of central bank transparency, and discussing the interaction between accountability and transparency.

2.1 What is transparency?

A useful starting point for the discussion of transparency in monetary policy is the realisation that this is a concept with many dimensions. In a recent survey of the literature, Geraats (2001) classified the different aspects of transparency into five general categories: political, economic, procedural, policy and operational. Several subsequent papers, however, have argued that there is a degree of substitutability between various of Geraats's types of transparency and have therefore proposed an alternative subdivision into three categories. Hahn (2002) labels these three categories *goal*, *knowledge* and *operational* transparency.¹

Goal transparency refers to transparency about the overall aims of the central bank, by which is meant broad policy objectives rather than day-to-day operational aims such as (say) maintaining the overnight cash rate at the desired target. These goals would include the specification of an inflation target, the statement of an output or employment objective, and, if both output and inflation are among the variables stated to be of concern, an indication of the relative weight typically placed upon each.

Two points are worth noting, in passing, about the concept of goal transparency. The first is that it may be difficult to retain a clear distinction between the transparency of a given policy goal and the precision with which that goal is formulated. An example of this is given by the contrasting specifications of inflation targets by the Bank of England and the Reserve Bank of Australia (RBA). Australia's target of 'consumer price inflation between 2 and 3 per cent, on average, over the cycle' (Second Statement on the Conduct of Monetary Policy, July 2003) is formulated much less sharply than that of the UK, where the Bank of England is charged with achieving 'an underlying inflation rate (measured by the 12-month increase in the CPI) of 2 per cent ... at all times' (Remit for the Monetary Policy Committee, 10 December 2003).² This is sometimes interpreted as contributing to a lack of transparency about the RBA's objectives.³ A counter view, however, would be that Australia's inflation target is no less transparent than the UK's, just more flexible.

-
1. Hahn (2002) notes that a rough correspondence between his own and Geraats's taxonomies of transparency is provided by matching her notion of political transparency with his own goal transparency, her concepts of economic and operational transparency with his knowledge transparency, and her notions of procedural and policy transparency with his operational transparency. In a similar vein, there is an approximate concordance between Hahn's three categories of transparency and those of Carpenter (2004); Carpenter's transparency with respect to instruments, goals and implementation broadly (though not exactly) correspond to Hahn's operational, goal and knowledge transparency.
 2. The remit from the Chancellor does acknowledge that 'the actual inflation rate will on occasions depart from its target as a result of shocks and disturbances' and that 'attempts to keep inflation at the inflation target in these circumstances may cause undesirable volatility in output'. Nevertheless, it sets out a strict regime of accountability for deviations of inflation from target of more than 1 percentage point, and stresses that the resultant inflation thresholds of 1 and 3 per cent to trigger this regime 'do not define a target range'.
 3. See, for example, the relative ratings given to the RBA and the Bank of England in Table 3.4 of Fracasso, Genberg and Wyplosz (2003).

The second point is that, even within the reduced, three-fold taxonomy of transparency considered here, there is clearly still some substitutability between the different categories of transparency. Hence, for example, a central bank which makes known both its forecasts for key economic variables and the policy actions it takes in light of these forecasts (forms of knowledge and operational transparency, respectively, discussed further below), reveals a good deal about its overall policy objectives (goal transparency), even if it does not explicitly state these objectives.

Knowledge transparency refers to the information provided by the central bank to the general public about: first, the data which the central bank relies upon in drawing up its strategy for achieving its overall objectives; and, secondly, how it uses that data to arrive at its ultimate strategy. This would be seen as including the periodic release of relevant forecasts of key variables by the central bank, as well as a description of the main factors driving these forecasts, the risks surrounding them, and how they influence the current stance of policy.

Operational transparency refers primarily to the openness of a central bank about the instruments it uses to try to achieve its policy objectives, and about how and when it uses these instruments. The obvious example is the announcement of decisions regarding the central bank's short-term interest rate target.⁴ There is also a further bloc of issues which most naturally fall under this category, and these concern procedural aspects of the way in which monetary policy decisions are reached. The most prominent of these relate to the publication of minutes and voting records of the committee which decides the policy stance.

2.2 Theories of optimal transparency

To assess the economic case for or against particular aspects of transparency, the first point to note is that the overwhelming majority of the literature on these issues is theoretical rather than empirical. Within the theoretical literature, a recurring theme of the overview presented here is that many of the findings depend crucially upon the details of the modelling framework adopted, especially regarding: the treatment of uncertainty; the way in which monetary policy affects the real economy; and the precise nature of the central bank's objectives (whether revealed or not). As such, many of these findings do not, unfortunately, appear to be robust across a range of different analytical assumptions.

Beginning with the theoretical literature on goal transparency, two central themes of the modelling on this score are the issues of time-inconsistency, and of the impact of transparency on expectations formation. Eijffinger, Hoeberichts and

4. While it has become the norm for most central banks to use a short-term interest rate as their primary policy instrument, and to announce immediately any changes to the target level for this variable, it is surprising how recent a phenomenon this degree of transparency is. In the US, the Federal Reserve only commenced publishing its target for the Federal Funds Rate directly after board meetings in 1994, having successfully fought a case in the Supreme Court in the late 1970s to allow it to continue its then practise of only announcing this information with a 90-day lag. A similar opacity about the target for the overnight cash rate also characterised the RBA's behaviour until 1990.

Schaling (2000), for example, develop a model in which transparency, in the sense of reduced uncertainty about a central bank's relative preferences regarding inflation and output, is beneficial because it helps to fix inflation expectations, and so reduces both the mean and variance of inflation. Using a similar model, Canzoneri (1985) finds that increased central bank transparency should also help to overcome the time-inconsistency dilemma facing central banks – that is, the assumed temptation to seek superior economic outcomes by saying one thing and subsequently doing another. In a model in which such time-inconsistency can result in reputational damage, increased transparency will diminish the incentive to behave in this way.

A further strand of the literature on goal transparency concerns the implications of learning for monetary policy and central bank communication. In an important recent series of papers, Orphanides and Williams (2003a, 2003b) consider a model in which the general public, although aware of the broad structure of the economy, do not know the precise quantitative details of that structure. These details, embodied in the parameters of the model's equations, depend upon the objectives and preferences of the central bank, which are unstated, so that the public is assumed to have to infer them through observing the central bank's actions. As Bernanke (2004a) observes, in such a model, the behaviour of the economy 'can be quite different from that of the rational expectations analogue, in which the public is assumed to have full and symmetric information'. In particular, Orphanides and Williams (2003a) find that the public's process of adaptive learning, in the face of central bank opacity, can make the economy 'prone to episodes in which the public's expectations of inflation become uncoupled from the [central bank's] policy objective and stagflation results'. This leads them to argue that their results 'highlight the value of effective communication of a central bank's inflation objective and of continued vigilance against inflation in anchoring inflation expectations'.

Not all theoretical models, however, support the notion that greater goal transparency is necessarily economically beneficial. For example, Hahn (2004) develops a simple model in which the optimal trade-off between transparency and opacity in the central bank's objectives depends on society's relative preferences for output stabilisation versus low inflation. Also, Grüner (2002) presents an explicit model of the interaction between a central bank and a monopoly labour union under which greater secrecy by the central bank is economically preferable.⁵ Finally, a variety of papers (Beetsma and Jensen 2003; Eijffinger and Hoerberichts 2002) bear on the possibility, bound up with the time-inconsistency issue, that 'high-credibility' central banks can afford to be opaque, whereas it may be optimal for 'low-credibility' institutions to be transparent.

As regards this latter point, it seems quite plausible that the potential benefits from increased goal transparency may be smaller for central banks which already have a good track record in achieving desired macroeconomic outcomes. Notwithstanding

5. This result, however, requires that the union become more cautious in its wage-setting demands when unsure about the relative weights which the central bank places on its output and inflation goals – lest the central bank turn out to be very hawkish, so that high wage demands would lead to high unemployment. The practical plausibility of such an assumption is open to question.

this caveat, however, Carpenter (2004) characterises the general finding that goal transparency can ‘serve to create a long-term institutional incentive for low inflation’ at central banks, and so in turn help to better anchor inflation expectations, as ‘the most robust result of the literature’.

With regard to knowledge transparency, the theoretical literature is again inconclusive. A number of papers (Cukierman 2002; Gersbach 2003) suggest that disclosure of forecasts by central banks could undermine the effectiveness of monetary policy. However, these results rest upon a modelling assumption that only unanticipated monetary policy actions affect output. In a different vein, various papers outline a role for knowledge transparency to improve private sector information (Romer and Romer 2000), and thereby reduce aggregate economic volatility (Tarkka and Mayes 1999). Once again, however, this latter finding is model-dependent, since Morris and Shin (2001) present a model in which, even though central bank forecasts are superior to those of individual private agents, their publication could still lead to increased aggregate forecast errors. The mechanism here is that individuals, whose forecast errors previously tended to cancel out, might all shift their forecasts towards those of the central bank, resulting in the latter’s forecast errors becoming aggregate errors.

A further set of papers (for example, Jensen 2002) focus on a potential trade-off between credibility gains for a central bank from increased transparency, on the one hand, and a possible loss of flexibility in its policy actions, on the other. The concern here is that a central bank which reveals both its goals and its forecasts may find itself undesirably constrained in its response to the range of different shocks which may strike the economy. However, rather than providing a case for central bank opacity, this could be argued to provide support for central banks casting their goals in a suitably flexible manner – acknowledging the fact that different shocks to the economy may call for different policy responses.

Overall, what lessons can we draw from this survey of the theoretical literature on the economic consequences of different forms of central bank transparency? Certainly, there are some findings which appear to be reasonably robust, such as the insight that goal transparency (principally, the announcement of an inflation target) can create a sustained institutional incentive for a central bank to pursue desirable macroeconomic goals, with associated benefits in terms of the anchoring of the public’s expectations. Many of the theoretical results, however, appear to be very model-specific, and highlight that increased transparency can sometimes do more harm than good, depending upon subtle features of the monetary policy framework and the expectations formation process. As such, they suggest that, while a high degree of central bank transparency is likely to be desirable on economic grounds, it is certainly not automatically the case that more transparency will always be better.

2.3 Empirical evidence

By comparison with the theoretical literature, empirical evidence on the effects of transparency is relatively scarce. In large part, this reflects the problem that transparency is virtually impossible to quantify. As Carpenter (2004) observes,

numerical measures of it will be ‘at best imprecise and at worst incorrect’, and for this reason ‘the empirical evidence is not compelling and most likely never will be’.⁶

One study to attempt a quantification of monetary policy transparency is Eijffinger and Geraats (2002), who rate nine major central banks based on the authors’ assessment of their performance in relation to a range of communication criteria. These include: clarity and precision about goals; the release of minutes and voting records from policy meetings; openness in relation to the data and models used to guide economic analysis; and forthrightness in *ex-post* examination of policy choices. Even leaving aside the unavoidable subjectivity of ratings on many of these criteria, a major issue with such an index concerns the arbitrariness of the combination of these different components into a single index, which Eijffinger and Geraats do using equal weights.

A similar index of the transparency of 20 inflation-targeting central banks, again based on an equal weighting of separate ratings of various aspects of each bank’s inflation report, has also been produced by Fracasso *et al* (2003). An innovation of their approach is the use of a group of five graduate students in economics, ‘familiar with broad principles but not necessarily central bank watchers’, to rate each bank’s report. This approach is aimed at avoiding any subconscious contamination of the results by the authors’ own knowledge of the operations and performance of each central bank. Among a range of drawbacks identified by Lowe (2003), however, is that such a group may be quite unrepresentative of the intended audience of central banks’ reports. Finally, an alternative index of the transparency of the central banks of 87 countries, focused on the quality of their published forecasts, has been produced by Chortareas, Stasavage and Sterne (2002).

Empirical applications of these indices have produced mixed results. Cecchetti and Krause (2002) find evidence that central bank transparency improves a measure of macroeconomic performance based on the variability of inflation and output – although not as strongly as does central bank credibility (quantified in terms of low past inflation outcomes). Demertzis and Hughes Hallett (2002) use the index of Eijffinger and Geraats (2002) to examine the impact of central bank transparency on economic outcomes, and interpret their results as suggesting that, for the nine OECD countries rated by Eijffinger and Geraats, increased transparency tends to reduce the variance of inflation but to increase the variance of output deviations from trend.⁷ The mean levels of inflation and output are unaffected. Finally, by contrast with Demertzis and Hughes Hallett, Chortareas *et al* (2002) find that greater transparency, as measured by their own index, is associated with a lower average level of inflation. Carpenter (2004), however, is critical of both of these latter studies – and indeed of most of the econometric analysis of the effects of transparency – noting that ‘given

6. We omit from this survey studies of the larger question of how the adoption of an inflation target itself affects economic performance. Examples include Kuttner and Posen (1999), Ball and Sheridan (2003) and Hyvonen (2004).

7. These findings, however, are based purely on simple nine-data-point regressions of the relevant variable on Eijffinger and Geraats’s transparency measure.

the differing levels, types, and definitions of transparency, clear econometric results would be more surprising than convincing’.

What all of these studies have in common is that they seek to identify differences in economic performance across countries and to attribute them to the characteristics of the communication regime. Performance, in this context, is usually measured in terms of either the volatilities of, or shifts in, key variables like inflation, output growth and interest rates. To put these studies in perspective, therefore, it is worth looking at the gross facts that need to be explained. Some summary statistics of these variables for a group of industrial countries are shown in Table 1.

These summary statistics show, broadly, three things:

- over the past two decades, there has been a substantial reduction in average inflation levels in most of the selected countries, especially in those with initially high inflation rates, as well as a reduction in the variability of both inflation and output growth in most countries;
- there has been an even greater reduction in short-term interest rate volatility; and
- based on these summary measures, country performances have generally become much more similar than they were in the two previous decades.

Doubtless these trends are attributable to a number of factors that we cannot go into here, but which would have to include improved macroeconomic policies. The aspect of economic performance most likely to be directly related to monetary policy communication arrangements is the reduction in interest rate volatility. It is plausible to attribute this to the improvements in transparency that have occurred over the same period, and a number of more detailed studies have done so (Muller and Zelmer 1999; Haldane and Read 2000). But remaining cross-country differences in interest rate volatility are now small, and are swamped in any of these comparisons by the much larger historical movements. Given these gross facts, attempts to identify the economic effects of current differences in communication arrangements across countries seem unlikely to be convincing.⁸

2.4 Transparency and accountability

The technical literature on optimal communication, reviewed above, focuses on the objective of economic efficiency. It asks how a communication strategy can best promote efficiency by reducing uncertainty or by focusing the public’s expectations in a desirable way. As noted at the outset, there is also a second objective of central bank communication, namely that of ensuring adequate accountability. To a large degree these two objectives can be viewed as complementary. Disclosure practices that produce clear explanations of policy decisions will generally be likely to promote efficiency, in the ways discussed above, as well as helping to satisfy the requirements of accountability. Even so, the two objectives are not identical. There

8. This is the conclusion of Coppel and Connolly (2003) in a study of the effects of transparency on financial market behaviour.

Table 1: Macroeconomic Summary Indicators

Annual CPI inflation^(a)				
Average, percentage points				
	1984–1988	1989–1993	1994–1998	1999–2003
United States	3.5	3.9	2.4	2.4
Germany	1.1	3.9	1.6	1.4
United Kingdom	4.3	5.4	2.8	2.3
Canada	4.1	3.5	1.2	2.5
Australia	6.9	4.2	2.4	2.5
New Zealand	9.3	3.2	1.9	2.3
Year-ended CPI inflation^(a)				
Standard deviation, percentage points				
	1984–1988	1989–1993	1994–1998	1999–2003
United States	1.0	1.1	0.5	0.8
Germany	1.1	1.2	0.6	0.6
United Kingdom	0.7	1.9	0.3	0.4
Canada	0.4	1.8	0.8	0.9
Australia	2.0	1.9	0.8	0.6
New Zealand	3.5	1.6	0.4	0.8
Year-ended real GDP growth				
Standard deviation, percentage points				
	1984–1988	1989–1993	1994–1998	1999–2003
United States	1.6	1.5	0.8	1.6
Germany	1.0	2.7	0.7	1.4
United Kingdom	1.1	1.5	0.7	0.8
Canada	1.5	1.8	1.4	1.7
Australia	1.9	2.0	0.9	1.0
New Zealand ^(b)	na	2.6	2.2	1.2
90-day bill yield				
Average absolute daily change, basis points				
	1984–1988	1989–1993	1994–1998	1999–2003
United States	4.5	3.5	1.9	1.7
Germany	4.1	4.2	2.8	2.4
United Kingdom	8.7	5.0	1.9	0.7
Canada	2.7	2.5	2.6	1.2
Australia	14.6	3.6	2.0	1.4
New Zealand ^(c)	22.5	6.2	7.9	1.9

(a) CPI excluding GST and mortgage interest payments for Australia; CPI excluding GST and credit services for New Zealand; RPIX for the United Kingdom; headline CPI elsewhere.

(b) Data for New Zealand: year-ended real GDP growth data only available on a quarterly basis from June quarter 1998.

(c) Data for New Zealand: daily 90-day bill yields available from January 1985.

will always be cases where demands for additional disclosure, based on right-to-know arguments, need to be weighed against questions of how that would affect the efficiency of the policy environment (including, as noted below, the decision-making process). Logically, the balance between these two sets of considerations must reflect both the economic cost-benefit calculus of any disclosure proposal, and the question of how highly the public values the disclosure of a given piece of information for its own sake.⁹

In practice, the area in which these issues most come to the fore is in the question of how a change in reporting practices might affect the decision-making process itself. For example, how might the fact of subsequent disclosure of minutes, transcripts and the like, influence the way debates are conducted on a policy committee and therefore the quality of its decisions? This is an issue not much focused upon in the formal optimisation literature, which is principally concerned with how the disclosure of information affects the perceptions of the public. However, it is a recurring theme of more practical discussions, as will be seen later.

3. Recent Developments and Issues

There is no doubt that central banks around the world have greatly increased the volume and quality of information they provide to the public. These changes, which have generally taken place over the period since the late 1980s, have gone hand in hand with the evolution of the policy framework itself.

In Australia, the key developments in this area have been:

- The commencement in 1990 of the practice of announcing changes in the operational interest rate (the cash rate). Associated with this, the RBA also began publishing detailed explanatory statements with the announcement of a policy change.¹⁰
- The adoption in 1993 of a medium-term inflation objective of 2–3 per cent in communicating the Bank's thinking about policy to the public.¹¹
- Adoption of the Statement on the Conduct of Monetary Policy (1996) by the Treasurer and the Governor of the Reserve Bank. This recorded a formal joint understanding of the RBA's inflation-targeting framework, along with arrangements for reporting and accountability. The agreement also established a schedule of

9. Obviously there will be room for differences of opinion as to how the balance between these considerations should be struck. Blinder *et al* (2001) argue that communication practices should be assessed against a general presumption of disclosure, but with exceptions being made where the balance of economic costs and benefits can be clearly shown to be against doing so. Thornton (2002) gives a somewhat different perspective, arguing that efficiency should be the primary consideration.

10. While these features are now standard practice around the world, their adoption has been relatively recent in some countries, with the Fed, for example, not announcing its policy interest rate until 1994 and the RBNZ until 1999. See the comment on Australia in this regard by Blinder (1996, p 73).

11. Grenville (1997) provides an account of the background to this development.

semi-annual reporting by the Governor to the Federal Parliament through the House of Representatives Standing Committee on Economics, Finance and Public Administration.¹² This process now attracts considerable media attention, and an opening statement by the Governor covering the Bank's assessment of current conditions, including economic forecasts, is published in the RBA *Bulletin* and on the Bank's website.

- A more gradual process of upgrading the RBA's regular reports on the economy and monetary policy. In particular there has been a substantial upgrading of the quarterly *Statement on Monetary Policy (SMP)*, which has now replaced the Bank's annual report as the main vehicle for formal reporting on monetary policy – in effect, generating a shift from an annual reporting cycle to a quarterly one.¹³

All of this means that there is now a much greater flow of information to the public about the RBA's thinking than was the case a decade or more ago. Other central banks have over the years made their own changes in a similar direction, which in some cases go beyond those made by the RBA, though not invariably so. Current reporting practices among a range of advanced-country central banks are compared in Table 2, reproduced from the 2004 *Annual Report* of the BIS.

A few general observations can be made about the comparisons in Table 2.

- In all cases these central banks publish regular reports on the economy and monetary policy, usually at quarterly frequency. While they differ somewhat in style and length, all give a fairly comprehensive review of the central bank's thinking about economic conditions and prospects.
- Similarly, all of the major central banks now publish economic forecasts, though some (Canada and the ECB) have begun to do so only quite recently. The majority present their forecasts at a quarterly frequency, though a significant minority (including the three largest) present them half-yearly. The forecasts generally focus on inflation and GDP growth, with a small number of additional macroeconomic variables also included in some cases.
- Practices on the release of minutes (and voting records) from the monetary policy decision-making committees differ from country to country. Australia is one of a number (along with Switzerland and the ECB) where minutes and voting records are not released. In Canada and New Zealand the question of minutes does not arise because monetary policy decisions in those countries are not taken by a committee; they are the responsibility of the Governor. In the other countries included in the table, minutes are released with lags ranging from around two to eight weeks.
- In all cases, these central banks make public announcements when a policy change is made. Even a casual perusal of these statements, however, indicates that

12. While such hearings had taken place previously, they had mainly covered banking matters and there had been no formal schedule.

13. One crude measure of the extent to which the quarterly *SMP* has been upgraded is the number of pages of analysis it contains – typically now around 60 pages, compared with 10–15 pages for its equivalent 10 years ago.

Table 2: Provision of Information by Central Banks

	G3			Inflation targeters					
	US	ECB	Japan	UK	Canada	NZ	Australia	Sweden	Switzerland
Accountability									
Quantitative inflation objectives	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Reports to legislature	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Policy decisions									
Decisions announced immediately	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Press conferences	No	Yes	Yes	No	No	Yes	No	Yes	Yes
Press releases	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Minutes published	Yes	No	Yes	Yes	–	–	No	Yes	No
Voting result published	Yes	No	Yes	Yes	–	–	No	Yes	No
Economic assessments									
Reports on monetary policy	H	M	M	Q	Q	Q	Q	Q	Q
Forecasts released	H	H	H	Q	Q	Q	Q	Q	H
Quantitative risk assessments	No	No	No	Yes	No	No	No	Yes	No

Notes: M = monthly; Q = quarterly; H = half-yearly

Source: BIS 74th Annual Report, June 2004, Basel

they differ quite markedly in format and content. The Fed and Bank of England announcements, for example, are typically brief and, in the Fed's case, make heavy use of standard verbal formulas to describe the current assessment. Those in Australia, New Zealand, and some other countries generally give a fuller and less formulaic account.

- In addition to the announcement of policy changes, most of these central banks also make announcements when a no-change decision is made. However, not all give an accompanying statement of reasons (included in this category are the RBA and the Bank of England).¹⁴

14. In the Bank of England's case, there is not generally a statement of reasons for a no-change announcement, but one is sometimes provided if it is judged to be needed.

These comparisons suggest three points on which significant variations in practices exist across the major central banks. Two of these – the frequency of communication and the release of minutes and voting records – are discussed further below, while the third, concerning the role of inflation forecasts as a communication tool, is considered in detail in Section 4.

The first point concerns the handling of no-policy-change announcements, and the particular issue of whether they are accompanied by detailed explanatory statements. In economic terms this is probably best viewed as part of the broader question as to the optimal frequency of communication. In Australia's case, as noted above, the explanatory statements that accompany changes in policy give a broad and somewhat fuller summary of the prevailing situation than is typical of the equivalent announcements of some of the larger central banks. A practice of issuing similar statements for no-policy-change decisions would mean issuing them at the same frequency as Board meetings: that is, effectively moving to a schedule of monthly commentaries in addition to the (much more detailed) quarterly reports already produced.

The economic issue here is whether the flow of genuine new information is sufficient to justify that sort of frequency. One possible response to this question would be simply to take the view: the more communication the better. This view would argue that, since information reduces uncertainty, additional communication is always either beneficial to the public (and to financial markets) or, at worst, redundant if there is nothing of substance to communicate. However, in addition to the theoretical caveats to this view, most participants in the debate would accept that there is some limit to this argument in practice. No-one argues for weekly, daily or continuous commentary from central banks, so in principle there is some optimal frequency of communication. One important reason for this is that communication is imperfect and, therefore, inevitably noisy. The shorter the interval between communications, the less genuine information there is likely to be. At some point, excessive frequency of announcements risks generating more noise than signal.

It is not hard to think of instances where central banks have had to grapple with this problem. The recent experience of the Fed, for example, saw some delicate manoeuvring when the time came to move away from the 'considerable period' rhetoric adopted in 2003.¹⁵ The communication challenge for the FOMC during the early part of the 'considerable-period' period was to convey, essentially, that the policy assessment was not materially changing between successive meetings: in other words, to convey a lack of new information. In general, one way to approach this task would be to come up with an entirely new statement each time, aiming to create broadly the same impression with different words. However, this approach has the drawback of attracting attention to the changes in wording and inviting markets to read more into them than is really there. Presumably, this is why the FOMC opted for the alternative approach of sticking to a fixed form of words, though at the cost

15. This refers to the series of FOMC statements commencing on 12 August 2003 and continuing until 28 January 2004 which stated that the accommodative stance of policy would be maintained for a considerable period.

of generating even greater speculation about when and how the formula would eventually be changed. No doubt this kind of awkward communication challenge can never be entirely avoided, but it is at least arguable that problems of this nature can be amplified by communicating too frequently.

In the context of this debate, there is also an interesting empirical question as to whether an increase in reporting frequency would be likely to generate significant economic benefits in the form of a reduction in financial market uncertainty. In the Australian situation, where monetary policy statements appear quarterly, a simple approach to this question would be to ask whether the build-up of information between quarterly statements was generally sufficiently large that those statements would be expected to have a material impact on financial markets when released. If so, a move to more frequent statements would presumably allow that information to be incorporated into financial prices more quickly than under current practices. This question has been examined by Coppel and Connolly (2003) who show that, for maturities out to about two years, the average movements in short-term market interest rates on the days when a quarterly *SMP* is released are not much larger than on ordinary (non-*SMP*) days. So this evidence is not consistent with a significant accumulation of pent-up information between successive quarterly reports. This result is likely to reflect the existence of other reporting vehicles such as governors' speeches, parliamentary hearings and media releases that become available in the intervening periods.

The second point concerns the varying practices with respect to the release of minutes. This has been a subject of some debate in Australia and elsewhere, most notably in relation to the ECB. The debate concerning disclosure of minutes by the ECB is illustrative of the broad lines of argument. Observers such as Buiters (1999) have argued forcefully for disclosure of minutes and voting records by the ECB's governing council, based on a general appeal to principles of accountability and the public's right to be kept informed. In effect, this form of disclosure would shift the ECB system from one of collective accountability (through the ECB President) to one where each member would be individually accountable for his or her vote, as is the case with the Monetary Policy Committee (MPC) of the Bank of England. The argument against this form of disclosure has hinged on the possible effects it might have on the decision-making process. The ECB (Issing 1999) defends its current practice on the basis that disclosure of voting records would expose individual members of the governing council to pressure to vote according to their national interests rather than the interests of the currency area as a whole. While not universally accepted, it is widely acknowledged that this argument has merit. For example, Blinder *et al* (2001), though supporting a general presumption of disclosure in their overall approach to central bank communication, do not recommend release of minutes and voting records in the ECB's case.

In Australia the argument is slightly different, since there is no Australian counterpart to the multi-national structure of the ECB's governing council. The RBA situation is, however, unusual in another respect, in that policy is decided by a non-executive Board where the majority of members are not technical experts on monetary policy or engaged on a full-time basis in the policy process. These

points were raised at one of the RBA's recent parliamentary examinations, with the Governor noting that the Board members are chosen to reflect the broader sectors of the community and could be exposed to pressure to vote on the basis of sectoral interests if their votes were disclosed.¹⁶ Thus, while the situations of these two central banks are not the same, the general point that has been made in both cases is that questions about accountability and disclosure practices cannot be looked at in isolation from the governance arrangements of each institution. A disclosure practice that makes sense for a technically-focused monetary policy committee might not be well suited to alternative board structures.

4. The Role of Inflation Forecasts in the Communication Strategy

The third general topic that emerges from the comparisons outlined in Section 3 concerns the use of forecasts as a communication device. Some key characteristics of the forecasts published by advanced-country central banks are summarised in Table 3.

In this section we focus on two aspects in particular: the monetary policy assumption embedded in the forecasts, and the broader question as to the degree of prominence given to inflation forecasts in a central bank's communication strategy.

4.1 The policy assumption

The question of what policy assumption is built into the published inflation forecast has been much debated and, as argued below, can have a significant bearing on the way forecasts are used in central bank communication. As can be seen from Table 3, the vast majority of central banks construct their forecasts on an assumption that monetary policy is unchanged. The main exception is the Reserve Bank of New Zealand, which uses the alternative approach of assuming endogenous monetary policy and therefore providing a forecast for the path of interest rates along with the other macroeconomic variables (including the exchange rate).¹⁷

The clear preference for the no-policy-change assumption among central bank forecasters has continued, notwithstanding some criticism of that approach in the academic literature. One criticism is that the assumption is unrealistic and therefore non-transparent, since central banks will, in fact, generally expect interest rates to change over time (Martijn and Samiei 1999). There are two problems with this type of claim. The first is that, as often occurs in these debates, it uses the word 'transparent' as a synonym for 'good' instead of looking at the particular question on its merits. Secondly, the use of a technical assumption is not the same thing as

16. See the exchange in Hansard, House of Representatives Committee on Economics, Finance and Public Administration, 8 December 2003 (EPPA 9).

17. The Bank of England also has a second set of forecasts that assume interest rates follow the path embodied in current market expectations. The Bank of Canada uses an endogenous interest rate but does not publish its forecast for the interest rate path.

Table 3: Provision of Forecasts by Central Banks

Central bank	Variables forecast	Frequency	Time horizon	Presentation	Policy assumption
Federal Reserve	Nominal GDP Real GDP Inflation	Semi-annual	12–18 months	Range	No change
European Central Bank	GDP Expenditure Inflation	Semi-annual (quarterly from June 2004)	12–18 months	Range	No change
Bank of Japan	GDP Inflation	Semi-annual	12–18 months	Range	No change
Bank of England	GDP Inflation	Quarterly	2 years	Fan chart	No change
Bank of Canada	GDP Expenditure Inflation	Quarterly	18–24 months	Point	Endogenous
Reserve Bank of Australia	Inflation GDP	Quarterly Semi-annual	1–2 years	Point	No change
Sveriges Riksbank	Inflation GDP	Quarterly	2 years	Point and fan chart	No change
Reserve Bank of New Zealand	GDP Expenditure Labour market Inflation Interest rates Exchange rate	Quarterly	2–3 years	Point	Endogenous

Sources: central banks

non-transparency. If a decision-making committee does in fact make use of forecasts constructed on an unchanged-policy basis, then the release of those forecasts to the public is a piece of transparency.

A more serious point is the technical criticism of the no-policy-change assumption. The issue here is that well-designed forecasting models are generally either unstable or indeterminate when interest rates are permanently fixed; this reflects the Wicksellian point that under fixed interest rates the economy itself will be unstable. But while this technical point is acknowledged, its importance should not be exaggerated. It is not inherently at odds with sensible theory to assume interest rates can be kept fixed for a temporary period, and most forecasting models have no trouble accommodating this kind of exercise. Certainly central bank forecasters have not generally found the problems associated with it to be insurmountable.

Assuming these technical difficulties can be overcome, it may be conjectured that in many forecasting frameworks it would be possible to map the forecasts from one approach to the other, at least over shortish forecast horizons. For example, given a set of short-term forecasts about how the economy would evolve with unchanged interest rates, one could deduce how interest rates would need to move in order to achieve a desired alternative outcome. That, presumably, is the type of mental exercise a policy-making committee might go through in using a no-policy-change forecast to inform its decisions. Viewed in this way, the two alternative forecasting approaches can be seen as two ways of summarising the same information. The information that a change in interest rates is needed could be expressed either through a forecast showing the inflation rate diverging from the target under unchanged interest rates, or by a forecast of the interest rate moves required to keep inflation on track. Why, then, have the majority of central banks so clearly opted for the unchanged-policy approach?

One reason, emphasised by Goodhart (2001), is likely to be the complexity of getting any forecasting process to agree on a projected time path for interest rates that can be adequately explained to the public. It is true that such forecasts can be routinely produced from economic models. But any attempt to debate the basis of the interest rate forecasts outside a modelling framework, and to explain them to the public, is still going to beg the question of why interest rates have to move as projected. This in turn is likely to require some assessment of what would happen if rates were kept unchanged. If so, the practice of using endogenous-policy forecasts just adds a layer of complexity to an exercise that would still have to be done; or, if that first step is by-passed, it renders the process of arriving at the forecasts opaque and excessively model-dependent.

Another reason is that, even if it is agreed that the two approaches can convey essentially the same information, there are important presentational differences between them. In particular they are likely to convey different senses of the central bank's propensity towards activism. The conventional approach presents the rationale for a policy decision in terms of the counterfactual question: what would happen if interest rates were kept unchanged? In an inflation-targeting context, for example, it might explain a policy decision on the basis that inflation is expected to go off track in the absence of corrective action. This approach has the effect of framing the public discussion in terms of a presumption that interest rates stay unchanged unless the assessment of the economic outlook makes a case to the contrary. Presentationally, this is very different from offering a forecast based on a presumption that interest rates change, which is likely to convey a stronger sense of activism in the central bank's policy approach. Since the evidence is that central banks are in fact quite gradualist relative to model predictions (Clarida, Gali and Gertler 2000; Judd and Rudebusch 1998), the conventional way of presenting forecasts is likely to be more in keeping with the way policy is actually conducted.

Finally, there is also a more general question as to the degree of precision that a central bank might wish to convey in its published forecasts. This applies also to the assumption concerning the exchange rate, a variable that is notoriously difficult to predict. The principal reason for releasing forecasts is to help convey a central bank's

thinking about the policy decision. The use of standard simplifying assumptions, as is the practice of most central banks, may well serve the purpose better than an approach that could be seen as providing false precision about the future paths for the interest rate and exchange rate.

4.2 Degree of prominence of the inflation forecasts

Much of the debate in the theoretical literature assumes that, in some sense, all central banks (or at least those with an independent monetary policy) have an inflation target. That is, if central banks are modelled as optimisers (which, in formal theory, they must be) then they must have some view of the optimum inflation rate that they are aiming for. Given standard structural assumptions about long-run neutrality, this parameter of the central bank's objective function will tie down the inflation rate in the long run. The debate in the US, as typified in recent speeches by Fed Governors Bernanke and Kohn, has been about whether this particular parameter should be revealed to the public.¹⁸ This would be achieved by the Fed providing a numerical value for what it means by satisfactory price stability. As a proponent of an inflation target for the US, Bernanke argues that a numerical target would reduce uncertainty about future inflation and confer economic benefits through reduced premiums for inflation risk. The opposing argument is that a numerical target would make the Fed's communication less effective, by oversimplifying what are in fact a more complex set of objectives and encouraging an excessive focus on short-term deviations of inflation forecasts from the target. In other words, it would give the inflation forecasts too much prominence. Embedded in all this discussion is the idea that there is an optimal degree of emphasis on inflation forecasts in a central bank's overall approach to communication. So the question arises, how much prominence is enough?

The most extreme response to this question is what might be termed the 'sufficient statistic' approach to communication. This approach would assert that the job of monetary policy is to set the interest rate at the unique level which, given current circumstances and expectations, brings the forecast of inflation to the target over a fixed period of time ahead (say, two years). The central bank would simply calculate a two-year ahead inflation forecast under the unchanged policy assumption and, using an estimate of the responsiveness of the forecast to a change in the interest rate, could then determine the interest rate that would bring inflation to the target. So the inflation forecast would be a sufficient statistic for determining today's required policy decision, and for explaining its rationale to the public.

Probably no major central bank nowadays would say that this is how monetary policy is, or should be, conducted. However, the early rhetoric of inflation targeters did come close to asserting this position. Goodhart's retrospective observation as a founding member of the MPC makes this clear:

18. For a convenient summary of this debate, see the panel discussion session of the October 2003 Annual Conference of the Federal Reserve Bank of St. Louis, on the topic 'Inflation Targeting: Prospects and Problems'. As part of this session, Bernanke (2004b) argued in favour of the adoption of a formal inflation target by the Fed, while Kohn (2004) argued for maintenance of the status quo.

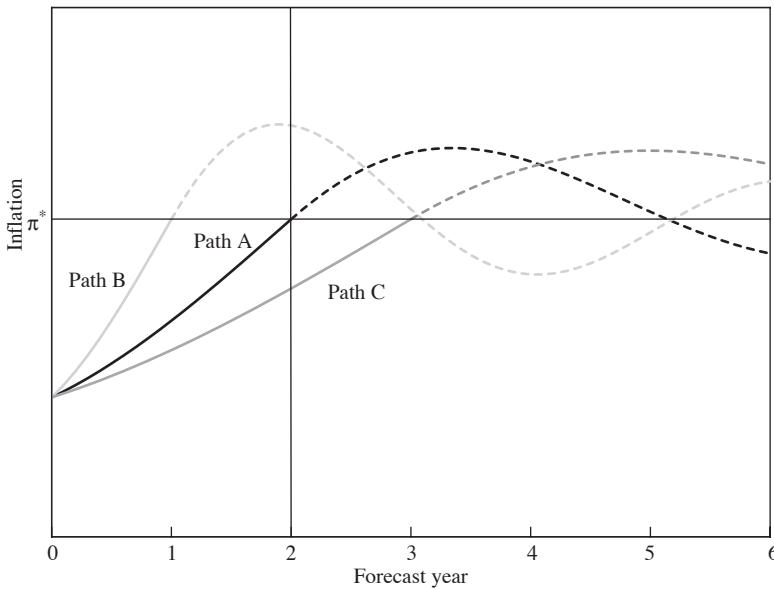
When I was a member of the MPC I thought that I was trying, at each forecast round, to set the level of interest rates so that, without the need for future rate changes, prospective (forecast) inflation would on average equal the target at the policy horizon. This was, I thought, what the exercise was supposed to be (Goodhart 2001, p 177).

More recently, there has been greater awareness that this degree of conceptual simplification is too extreme. For one thing, there is nothing magical about a two-year forecast horizon. Central banks generally select a forecast horizon of about that length for pragmatic reasons – it reflects a view that this kind of horizon is long enough to allow for the lags in monetary policy, and is about as far ahead as forecasts can be made with any acceptable degree of confidence. Nonetheless, it is recognised (see, for example, Bean 2003) that a much longer horizon is potentially of interest to the policy-maker. Hence central banks need to develop ways of bringing into consideration factors that may be relevant to the policy decision but which would not fit into a conventional shorter-term inflation forecast.

A further point is that central bank mandates do not generally stipulate the attainment of inflation targets within a fixed time horizon. Generally they allow some degree of flexibility, though the degree of flexibility does vary. Australia's mandate (and also the revised RBNZ mandate) is at the flexible end of the spectrum, and specifies that monetary policy aims to achieve the inflation target on average over the medium term. The sufficient-statistic approach described above is clearly incompatible with this formulation. Since the target is expressed as an average, there will at any time be multiple paths for future inflation that would be consistent with it. This of course does not mean that policy is totally unconstrained, since only a course of action consistent with an expectation of achieving the target on average would be permissible.

The point can be illustrated using the following scenario. Figure 1 shows three hypothetical inflation forecasts associated with alternative (constant) settings of the policy interest rate, starting from a position where inflation is below the target. For the sake of argument it is assumed that the current level of interest rates is on the expansionary side of neutral, and generates path A, in which inflation is forecast to rise back to the target over a period of exactly two years. Thus the sufficient-statistic approach, applied using a two-year horizon, uniquely fixes the policy rate at its current level. An alternative forecast trajectory (path B), if interest rates were cut, would return inflation to the target more quickly (in, say, a year) while a small rise in interest rates would mean inflation taking longer than two years to reach the target (path C). Of course, all of these scenarios would eventually imply an unstable upward drift in inflation in the long run if interest rates were not changed further. Thus, there would have to be additional adjustments to policy over time that are not incorporated in the forecast assumption. But with appropriate corrective action in due course, any one of the alternative interest rates at the present point in time might be consistent with attainment of the inflation target on average in the medium term. The alternative longer-term paths might look something like those shown by the dashed lines in Figure 1.

How then should a central bank decide between these alternatives? In theory, an optimising central bank would need to take into account all available information

Figure 1: Alternative Forecast Paths for Inflation

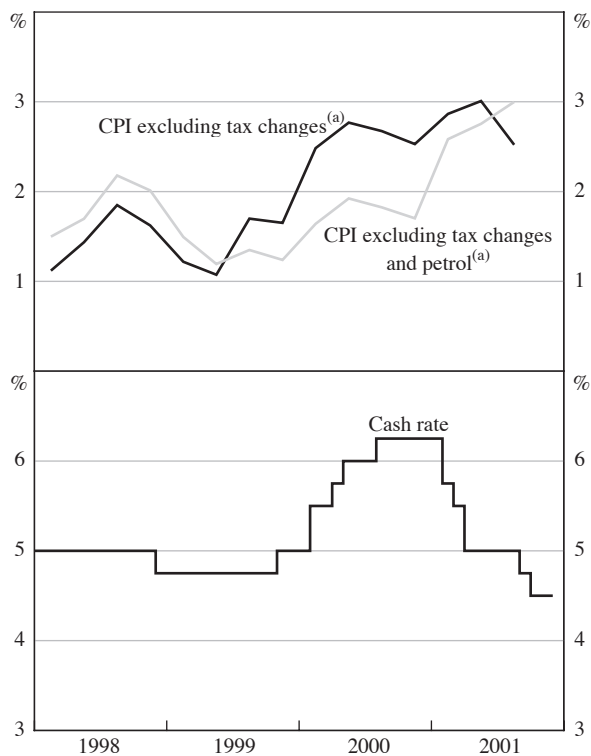
affecting the probability distribution of the variables in its objective function (inflation and output) over the foreseeable future. So the aim would be to find the optimal path consistent with meeting the inflation objective on average. In practical terms this is likely to require taking several things into account. One is the trajectory of inflation at the end of the forecast period – is it rising, falling or stable? As noted by Stevens (2004), the interest rate that returns inflation to the target over some given horizon is not necessarily the one that keeps it there. So in some instances there might be a case for moving the policy rate now, even if the forecast end-point is at the target, to ensure that the inflation rate is not rising or falling too quickly when it gets there. Other considerations are those of macroeconomic stability, more broadly defined. Starting from a position where inflation is away from the target, the optimal speed of return will depend partly on what is happening to output, and also on the broader balance of risks to the economy, including those associated with asset and credit market developments. Elements of these considerations have entered into the policy decisions of the RBA in recent years, as documented in successive *Statements on Monetary Policy*. The general principle, which is recognised in the policy mandate, is that the inflation target is a medium-term constraint, not a deterministic formula that requires information outside the short-term inflation forecast to be ignored.

A specific point worth highlighting in this context is the relevance of the trajectory, in addition to the level, of inflation at the end of the forecast period. This is illustrated by two recent episodes in Australian monetary policy when the expected time path of inflation was being influenced by the temporary effects of large movements in the exchange rate.

The first episode was the period around the policy easing that occurred in late 2001. Some key features of this period are summarised in Figure 2, which shows data for inflation and the cash rate as they were presented in the November 2001 *SMP*. In the early months of 2001 the cash rate had been sharply reduced, by a total of 125 basis points. This occurred against the backdrop of global economic downturn and what was assessed in the first half of that year as a prospect of relatively low inflation in Australia, with underlying inflation expected to remain close to 2½ per cent (this was the forecast in the May 2001 *SMP*). By the second half of the year it had become apparent that the short-term outlook was for higher inflation than previously anticipated, reflecting a larger and more extended pass-through of the earlier exchange rate depreciation into consumer prices. The August *SMP* thus revised up the short-term inflation outlook to 3 per cent. The November *SMP* went slightly further, forecasting that underlying inflation would exceed 3 per cent for a brief period.

Clearly the decisions to lower the cash rate in September and October of that year were not the result of a purely mechanical response to short-run inflation forecasts.

Figure 2: Inflation and the Cash Rate
November 2001 *SMP*



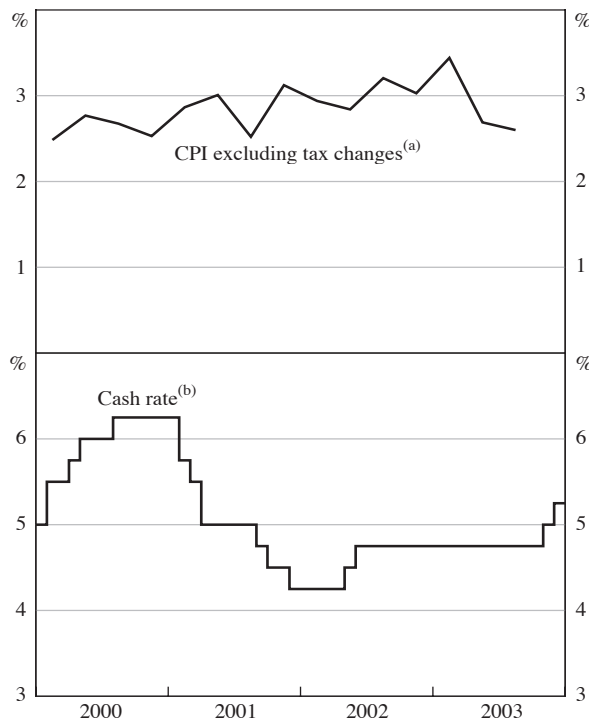
(a) Year-ended percentage change, excluding interest charges prior to September quarter 1998

Sources: ABS; RBA

While both the August and November *SMPs* forecast that inflation would decline from the expected near-term peak once the exchange rate effects faded, there was no suggestion that inflation would breach the target on the low side within a conventional forecast period. Rather, the rationale set out in the media statements accompanying the policy moves, and in the November *SMP*, was based on a combination of factors – the fact that inflation was expected to be declining in the latter part of the forecast period, and an assessment of more general risks to the economy, particularly those associated with the deteriorating economic situation abroad. In effect, a relatively benign inflation outlook beyond the near-term peak provided the flexibility for policy to respond to emerging risks to the wider economy.

The second episode, when monetary policy was tightened in late 2003, represents broadly the reverse of this situation. Some key features are summarised as before in Figure 3, using the data as presented in the November 2003 *SMP*. A feature of the second half of 2003 was that the short-term inflation forecasts were being revised downwards, as a consequence of the substantial appreciation of Australia’s trade-weighted exchange rate over the previous year or so. The expected pass-through

Figure 3: Inflation and the Cash Rate
November 2003 *SMP*



(a) Year-ended percentage change
 (b) Includes December 2003 change in the cash rate
 Sources: ABS; RBA

of this effect into consumer prices produced a shallow U-shaped inflation forecast so that, in the forecast reported in November 2003, inflation was expected to dip to 2 per cent by mid 2004, subsequently rising to 2½ per cent by the end of the forecast period. Monetary policy, in the event, was tightened in two steps, by a total of 50 basis points in November and December.

Once again, the rationale for these policy decisions was explained in terms of a broader set of factors than either the immediate (one or two quarters ahead) inflation outlook or the expected level of inflation at the end of the forecast period. First, the *trajectory* of inflation at the end of the forecast period was also clearly important. The explanatory announcements that accompanied the November and December decisions, and the subsequent discussion in the February 2004 *SMP*, emphasised that the immediate decline in inflation would be only temporary, and indicated that inflation would not only be back at the target midpoint, but also on a rising path, by the end of the forecast period. The second point was that prior to these decisions the policy stance had been highly expansionary. The implication of these two points was that, despite the expectation that it would decline in the short term, inflation would eventually exceed the target in the absence of corrective policy action. A third consideration presented in the Bank's policy statements was the run-up in house prices and credit. This situation risked becoming a significant destabilising influence on the economy, in ways that could not be readily incorporated in a conventional macroeconomic forecast. Finally, there was a strong global recovery underway by that time, improving the environment for growth of the Australian economy. These additional factors argued against persisting with a highly expansionary policy setting for too long, even though the expected movement in inflation above the target was still some way off.

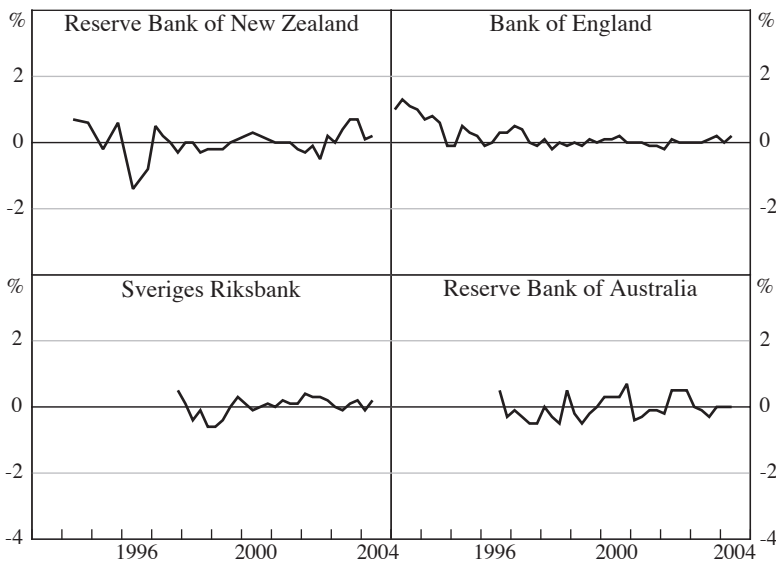
The general observation suggested by these experiences is that it is unrealistic to expect an inflation forecast on its own to represent all of the information that policy needs to take into account, even though it is obviously an important component of it. The prominence given to inflation forecasts as a communication device is thus closely tied to questions about the specification of the policy framework itself. A heavy focus on inflation forecasts in the communication strategy is likely to be a more natural fit with regimes where the target is relatively tightly specified (that is, with narrow bands, relatively low tolerance of deviations from the target, and little emphasis on broader stability objectives). It will be less well suited to more flexible regimes which are more tolerant of short-run inflation variability and give greater weight to broader macroeconomic stability goals.

That said, it is at least open to question whether the different policy regimes are as different in practice as their rhetoric implies. The comparisons presented earlier in Table 1 show that macroeconomic performance across a range of advanced economies has become much more similar in recent years than it was in the two previous decades. This may well be partly a result of common structural changes or changes in the nature of the shocks now occurring. But it is also plausible that, notwithstanding differences in rhetoric, monetary policies have become more similar. Particularly noteworthy is the degree of similarity in inflation performances, a result

which is suggestive of similar degrees of tolerance to variability of inflation around what are seen as desirable levels.

Finally, it is interesting to note that there is a high degree of similarity across countries in the inflation forecasts themselves. The statistical characteristics of published inflation forecasts for a group of inflation-targeting countries are summarised below in Figure 4 and Table 4. What this information shows is that the forecast deviations of inflation from target are generally very small. In all these countries, inflation is virtually always forecast to be inside the target range at the end of the forecast period, and there are only two instances (in a total of 142 forecasts) of central banks forecasting that inflation would be outside their targets at that horizon.

Figure 4: Central Bank Inflation Forecasts
Deviation from target, percentage points



Note: see Table 4 for notes

A pattern of inflation forecasts that closely hugs the target is open to several possible interpretations. One is that inflation itself is much more stable than it used to be, and inflation expectations much better anchored. This being the case, inflation forecasts should broadly reflect that characteristic: if inflation rarely breaches the target, it seems to make sense that it will rarely be forecast to do so. There is no doubt a degree of validity in this. The difficulty, however, is that in most countries, inflation is forecast on the basis of unchanged policy, and so the forecast will not include the stabilising influence of the future policy actions that help to keep inflation on track. So unless policy is close to its optimum when the forecast is made, a diverging inflation path should be expected. This suggests a second possible

Table 4: Statistical Characteristics of Central Bank Inflation Forecasts

	Period beginning ^(a)	Number of forecasts in sample	Average difference between farthest-horizon forecast and target (ppts)	Average absolute difference between farthest-horizon forecast and target (ppts)	Number of predicted breaches of target range	Number of predicted deviations from target midpoint greater than 0.5 ppts
UK	Aug 95	35	0.10	0.15	0	1
Canada	Jan 03	6	-0.08	0.08	0	0
Australia ^(b)	Aug 96	32	-0.02	0.27	1	1
Sweden	Dec 97	27	0.03	0.21	0	3
NZ	Feb 91	42	0.09	0.32	1	9

(a) For New Zealand, Sweden and Canada, the table covers the period since the central banks began publishing their inflation forecasts. For the UK, we commence in August 1995 when the revised reporting range for RPIX inflation was adopted. For Australia, the starting point is the RBA's first quarterly statement following adoption of the Statement on the Conduct of Monetary Policy (1996).

(b) Australian data in this table are calculated from unpublished point forecasts that underlie the inflation outlook presented in the RBA's quarterly *Statements*. The forecasts refer to underlying inflation excluding tax effects.

Sources: central banks

interpretation, namely that policy settings generally are, in fact, judged to be close to their conditional optimum at the time when forecasts are made. This would mean that with unchanged policy, inflation is usually not expected to deviate greatly from the centre of the target. Again, there is likely to be some validity in this. If a central bank was in a position where it could confidently forecast inflation to go seriously off track, policy would already have been changed. A third possible interpretation is just that inflation is hard to forecast and so, given limited information, it is hard to come up with a medium-term forecast of inflation too far away from its statistical mean. It may, indeed, be particularly difficult to do so if a strong policy signal is likely to be inferred from such a forecast.

The point of making these observations is not to argue against forecasts *per se*, but merely to comment on the weight given to them as a communication device. Inflation forecasts in practice are highly stable around their targeted values, as the preceding discussion shows. Whatever interpretation is put on this fact, it seems unrealistic to expect an inflation forecast to do the work of an all-encompassing summary statistic for monetary policy.

5. Conclusion

Much of the commentary in support of transparency as a general principle is just common sense. Monetary policy communication needs to be open and effective. And there is no doubt that central banks have taken big steps over the past decade or so to become more informative about their goals, their operations and the way they think. Notwithstanding these trends, ongoing differences in communication practices across central banks remain a subject of debate. These differences can be classified as relating to either the process of communication or the substance of what is communicated.

Empirical studies of the effects of central bank communication practices have focused to a large extent on matters of process (that is, on the type of reports produced, their frequency, the availability of committee minutes and the like) and have attempted to identify how these might affect economic outcomes. The most direct effects are likely to be those on interest rate uncertainty, and here the evidence suggests two things. First, the increases in transparency over the past 10–15 years have reduced interest rate volatility virtually everywhere. Second, despite remaining differences in communication processes across central banks, the differences in outcomes now are not large. For example, Australian interest rates are about as predictable as those in the UK, the US and a range of other countries. So it would be difficult to build a case on these grounds to say that currently existing differences in communication practices are having material economic consequences.

Regarding the substance of what is communicated, we argue that the key area of difference among central banks concerns the role given to inflation forecasts in the communication strategy. Economic theory has suggested that a heavy emphasis on inflation forecasts, in combination with other features that enforce a tight pre-commitment to inflation control, may be useful in building credibility for a newly established policy regime. But experience also shows that monetary policy in practice needs to take into account a broader range of information than can be summarised in an inflation forecast. If so, an excessive focus on inflation forecasts as a communication tool may be misleading or unhelpful in explaining the rationale for policy decisions, or may contribute to a costly loss of flexibility.

The balance between these considerations will depend on the extent to which the specific credibility-building features of the policy regime (namely, the heavy focus on inflation forecasts and pre-commitment devices) remain a priority once low inflation expectations have been established. It is not surprising that, after the ‘lost decades’ of the 1970s and 1980s, many central banks adopted these features to try to assist in the process of re-establishing their anti-inflation credibility. But with that battle largely won, central banks may find that they are now able to give greater weight to the broader stability objectives of monetary policy without compromising longer-term inflation control.

References

- Ball L and N Sheridan (2003), 'Does inflation targeting matter?', NBER Working Paper No 9577. Forthcoming in BS Bernanke and M Woodford (eds), *The inflation targeting debate*, University of Chicago Press, Chicago.
- Bean C (2003), 'Asset prices, financial imbalances and monetary policy: are inflation targets enough?', in A Richards and T Robinson (eds), *Asset prices and monetary policy*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 48–76.
- Beetsma RMWJ and H Jensen (2003), 'Comment on "Why money talks and wealth whispers: monetary uncertainty and mystique"', *Journal of Money, Credit and Banking*, 35(1), pp 129–136.
- Bernanke BS (2004a), 'Fedspeak', Remarks at the Meetings of the American Economic Association, San Diego, 3 January.
- Bernanke BS (2004b), 'Inflation targeting', in Panel Discussion on 'Inflation Targeting: Prospects and Problems', Federal Reserve Bank of St. Louis *Review*, 86(4), pp 165–168.
- Blinder AS (1996), *Central banking in theory and practice*, The Lionel Robbins Lectures, MIT Press, Cambridge.
- Blinder AS, CAE Goodhart, PM Hildebrand, DA Lipton and C Wyplosz (2001), 'How do central banks talk?', Geneva Reports on the World Economy 3.
- Buiter W (1999), 'Alice in Euroland', *Journal of Common Market Studies*, 37(2), pp 181–209.
- Canzoneri M (1985), 'Monetary policy games and the role of private information', *American Economic Review*, 75(5), pp 1056–1070.
- Carpenter SB (2004), 'Transparency and monetary policy: what does the academic literature tell policymakers?', Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series No 2004-35.
- Cecchetti SG and S Krause (2002), 'Central bank structure, policy efficiency, and macroeconomic performance: exploring empirical relationships', Federal Reserve Bank of St. Louis *Review*, 84(4), pp 47–59.
- Chortareas G, D Stasavage and G Sterne (2002), 'Does it pay to be transparent? International evidence from central bank forecasts', Federal Reserve Bank of St. Louis *Review*, 84(4), pp 99–117.
- Clarida R, J Galí and M Gertler (2000), 'Monetary policy rules and macroeconomic stability: evidence and some theory', *Quarterly Journal of Economics*, 115(1), pp 147–180.
- Coppel J and E Connolly (2003), 'What do financial market data tell us about monetary policy transparency?', Reserve Bank of Australia Research Discussion Paper No 2003-05.
- Cukierman A (2002), 'Are contemporary central banks transparent about economic models and objectives and what difference does it make?', Federal Reserve Bank of St. Louis *Review*, 84(4), pp 15–35.
- Demertzis M and A Hughes Hallett (2002), 'Central bank transparency in theory and practice', CEPR Discussion Paper No 3639.
- Eijffinger SCW and PM Geraats (2002), 'How transparent are central banks?', CEPR Discussion Paper No 3188.

- Eijffinger SCW and MM Hoerberichts (2002), 'Central bank accountability and transparency: theory and some evidence', *International Finance*, 5(1), pp 73–96.
- Eijffinger SCW, MM Hoerberichts and E Schaling (2000), 'Why money talks and wealth whispers: monetary uncertainty and mystique', *Journal of Money, Credit and Banking*, 32(2), pp 218–235.
- Fracasso A, H Genberg and C Wyplosz (2003), 'How do central banks write? An evaluation of inflation targeting central banks', Geneva Reports on the World Economy Special Report 2.
- Geraats PM (2001), 'Why adopt transparency? The publication of central bank forecasts', European Central Bank Working Paper No 41.
- Gersbach H (2003), 'On the negative social value of central banks' transparency', *Economics of Governance*, 4(2), pp 91–102.
- Goodhart C (2001), 'Monetary transmission lags and the formulation of the policy decision on interest rates', Federal Reserve Bank of St. Louis *Review*, 83(4), pp 165–181.
- Grenville S (1997), 'The evolution of monetary policy: from money targets to inflation targets', in P Lowe (ed), *Monetary policy and inflation targeting*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 125–158.
- Grüner HP (2002), 'How much should central banks talk? A new argument', *Economics Letters*, 77(2), pp 195–198.
- Hahn V (2002), 'Transparency in monetary policy: a survey', *IFO Studien Zeitschrift für Empirische Wirtschaftsforschung*, 48(3), pp 429–455.
- Hahn V (2004), 'The transparency of central bank preferences', Alfred-Weber-Institut, University of Heidelberg, mimeo.
- Haldane AG and V Read (2000), 'Monetary policy surprises and the yield curve', Bank of England Working Paper No 106.
- Hyvonen M (2004), 'Inflation convergence across countries', Reserve Bank of Australia Research Discussion Paper No 2004-04.
- Issing O (1999), 'The eurosystem: transparent and accountable or "Willem in Euroland"', *Journal of Common Market Studies*, 37(3), pp 503–519.
- Jensen H (2002), 'Optimal degrees of transparency in monetary policymaking', *Scandinavian Journal of Economics*, 104(3), pp 399–422.
- Judd JP and GD Rudebusch (1998), 'Taylor's rule and the Fed: 1970–1997', Federal Reserve Bank of San Francisco *Economic Review*, No 1998-3, pp 3–16.
- Kohn DL (2004), 'Inflation targeting', in Panel Discussion on 'Inflation Targeting: Prospects and Problems', Federal Reserve Bank of St. Louis *Review*, 86(4), pp 179–183.
- Kuttner KN and AS Posen (1999), 'Does talk matter after all? Inflation targeting and central bank behavior', Institute for International Economics Working Paper 99-10.
- Lowe P (2003), 'Comments on "How do central banks write? An evaluation of inflation targeting central banks"', Geneva Reports on the World Economy Special Report 2.
- Martijn JK and H Samiei (1999), 'Central bank independence and the conduct of monetary policy in the United Kingdom', IMF Working Paper No 99/170.
- Morris S and H Shin (2001), 'The CNBC effect: welfare effects of public information', Cowles Foundation Discussion Paper No 1312.

-
- Muller P and MZelmer (1999), 'Greater transparency in monetary policy: impact on financial markets', Bank of Canada Technical Report No 86.
- Orphanides A and JC Williams (2003a), 'Imperfect knowledge, inflation expectations and monetary policy', NBER Working Paper No 9884. Forthcoming in BS Bernanke and M Woodford (eds), *The inflation targeting debate*, University of Chicago Press, Chicago.
- Orphanides A and JC Williams (2003b), 'Inflation scares and forecast-based monetary policy', Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series No 2003-41.
- Romer CD and DH Romer (2000), 'Federal Reserve information and the behavior of interest rates', *American Economic Review*, 90(3), pp 429–457.
- Stevens GR (2004), 'Recent issues for the conduct of monetary policy', Reserve Bank of Australia *Bulletin*, March, pp 1–8.
- Tarkka J and D Mayes (1999), 'The value of publishing official central bank forecasts', Bank of Finland Discussion Paper No 22/99.
- Thornton D (2002), 'Monetary policy transparency: transparent about what?', Federal Reserve Bank of St. Louis Working Paper No 2002-028.