An Australian Perspective On Inflation Targeting, Communication and Transparency

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1. Introduction

When countries began to adopt inflation targets more than a decade ago, their aim was to put in place a credible framework that avoided the drawbacks of previous policy regimes. In New Zealand, Canada and Australia, inflation targets replaced *ad hoc* regimes that were considered intellectually unsatisfactory and had been associated with periods of poor inflation performance. In the UK and Sweden, inflation targeting replaced failed exchange-rate pegs. In each case, the designers of the new targets sought a balance between constraining the central bank in terms of policy outcomes, while allowing a realistic degree of flexibility in the setting of the policy instrument.

Kuttner (2004) notes that, even at this early stage, there was no single model as to how this balance should be achieved. Target specifications differed in a number of ways including the inflation goal itself, the degree of flexibility they allowed for inflation to vary, and the exact accountability and communication arrangements that were put in place. Australia's targeting regime could be characterised as being at the flexible end of the spectrum, while those of New Zealand and the UK, in their initial formulations, were at the more tightly specified end. Subsequent adopters have continued to be spread out along this range.

This paper provides a perspective on Australia's experience as a flexible inflation targeter. It first reviews the historical background to Australia's adoption of inflation targeting. It then compares Australia's communication practices with those of other central banks in order to bring out the similarities and differences in current approaches. Finally, 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. The paper argues that the flexible approach has served Australia well, and that the case for a relatively flexible approach by inflation targeters more generally is likely to strengthen as countries build up an increasing track record of low and stable inflation.

2. Historical Background

The adoption of inflation targeting in Australia is traditionally dated to 1993, when Governor Fraser began to speak of the objective of holding inflation to a rate of 2-3 per cent "over the course of the cycle". Debelle and Stevens (1995) note that this objective was adopted "without fanfare". Unlike in New Zealand and Canada, there was no attempt to signal an abrupt regime shift, and there was no formal agreement at the time between the government and the central bank (this came later, in 1996). Rather, the RBA was signalling its medium-term inflation goal within the context of existing institutional arrangements.

Intellectually, there was a lively debate at the time on alternative monetary policy regimes for Australia. Monetary targeting had been abandoned (or, officially, "suspended") in 1985, when it had become clear that as a result of financial liberalisation and innovation, the monetary aggregates no longer bore a stable relationship to prices or nominal incomes. There had followed a period in which the RBA's policy approach was presented to the public in terms of an *ad hoc* "checklist" of indicators. Many commentators argued that this approach lacked coherence and failed to provide the needed discipline.

Among the alternative monetary regimes put forward in the Australian debate were a fixed exchange rate or currency board (eg Walters 1992), introduction of a commodity-standard currency (White 1989; Evans and Dowd 1992), a "free banking" regime with competing private currencies (Dowd 1990), monetary-base control (McTaggart and Rogers 1990) and a return to conventional monetary targeting (Weber 1994). In short, the debate threw up a surprisingly diverse range of proposals, indicative of widespread distrust of monetary discretion. There

were, of course, counter-arguments to each of these proposals[1]. A fixed exchange rate had already proven unsatisfactory given Australia's position as a commodity exporter with highly variable terms of trade. The monetary aggregates, as noted, were too unstable to serve as an intermediate policy target. And the currency-reform and free-banking proposals were radical and untried. In this environment, thinking within the RBA was moving towards accepting the logic of targeting the ultimate objective of policy (namely, inflation) rather than an intermediate objective like the monetary aggregates or the exchange rate.

The particular formulation adopted in 1993 reflected pragmatic considerations at the time. Inflation in Australia had already been substantially reduced as a result of tight policies in the late 1980s. With the economy now in the early stages of recovery from recession, there was no appetite for a strategy of deliberate further disinflation. Rather, the aim was to prevent inflation from rising unacceptably during the prospective expansion. The formulation of the target as "2-3 per cent on average over the cycle" was intended to allow for unavoidable short-term variation in inflation while providing a medium-term discipline on the policy process. A noteworthy feature was that the 2-3 per cent range was not intended to specify outer limits, but rather to convey the idea of an approximate central tendency, or "thick point" as Debelle and Stevens called it. Thus it was expected that inflation would fluctuate around the target but would average between 2 and 3 per cent over a run of years. For technical reasons, the target was originally specified in terms of an underlying inflation measure in order to ensure that mortgage interest rates were excluded from the targeted index. When interest rates were later removed from the official CPI, the target was restated as applying to the CPI itself rather than the underlying rate.

All of these features were well established by the time the target was given formal recognition in an agreement between the Governor and Treasurer in August 1996. As well as specifying the numerical target, the agreement established standards for reporting and accountability through regular policy statements and, importantly, through twice-yearly appearances before the federal House of Representatives Economics Committee. Over the course of time, these vehicles of communication and accountability have become more highly developed. Statements have become more detailed and more explicit about the inflation outlook, and the regular parliamentary appearances have gained in prominence.

In international terms, Australia's inflation-targeting regime lies at the flexible end of the spectrum and has sometimes been criticised for that (particularly in its early years). It has never had the strict fluctuation bands or disciplinary procedures for breaches that were used as credibility-building devices in other countries like New Zealand. Critics from an academic perspective such as Stemp (1997) argued that the target gave too little discipline against higher inflation. In part, this type of criticism reflected a general disaffection with discretion and the unsatisfactory results it had delivered in the 1980s. It was argued that discretion would lead to policy errors and hence macroeconomic volatility. There was also an appeal to the time consistency literature, which argued that discretion would lead to systematic policy bias, generating a higher than optimal average inflation rate. But these criticisms tended to die down as Australia's targeting regime built up a track record of inflation control.

3. Is There an Optimal Degree of Flexibility?

Having noted that inflation targeting regimes take quite different approaches to the tolerance of inflation variability, it is interesting to consider what economic reasons might be given for preferring a greater or lesser degree of flexibility in this regard. In the terminology of Bernanke and Mishkin (1997), inflation targeting is a form of "constrained discretion", and both the constraining and the discretionary elements can be viewed as having costs and benefits that need to be balanced in designing the specifications of the policy regime. The need for a discretionary element arises from the impossibility of specifying in advance how the policy instrument should be adjusted in response to every contingency. The case for placing this within a framework of constraints is the familiar one from the time-consistency literature: constraints help to establish credibility by preventing discretion from being used to permit higher inflation than optimal. Strictly speaking, of course, the time-consistency literature does not require the type of simple constraint specified by inflation targeting. The key requirement of a credible policy is

1 This debate is reviewed in Edey (1997).

pre-commitment, and in principle this could be achieved by a complex or time-contingent rule rather than by a simple one. However, it may well be that in the public's minds, simple rules that provide clear guidelines as to what constitutes a breach are more readily understood, and provide a more effective discipline on the policy process.

It follows from this reasoning that decisions about the appropriate degree of flexibility in an inflation targeting regime will depend on judgments as to the relative priority that needs to be given to credibility-building. Where there is a recent history of unsatisfactory performance or regime failure, greater emphasis is likely to be placed on specific credibility building features such as tight target ranges and penalties for breaching the target. In cases where credibility is already well established, these features are likely to be less important. This is one factor that probably made it easier for Australia to adopt its flexible approach, since inflation had already been reduced to a satisfactory rate at the time the target was introduced.

The New Zealand experience provides a further case in point. As the first country to introduce inflation targeting, and with inflation still higher than desired, New Zealand initially adopted a tightly specified model with narrow and quite ambitious bands (0-2 per cent), a fixed timetable for achieving it, and with penalties specified for a breach. Later, with low inflation expectations becoming well entrenched during the course of the 1990s, the New Zealand authorities made a number of changes to the regime specification to allow greater flexibility. These included changes to the target bands (now 1-3 per cent), and a re-specification of the target as a medium-term average along the lines of the Australian approach. In some respects, the UK framework too, in its mature form, allowed more scope for inflation variability than did the initial formulation adopted in 1992. As a general principle, it seems that the scope for flexibility in the regime is greater where inflation expectations are well anchored.

4. Communication and Transparency

Another important area for comparison among inflation-targeting central banks is in their approaches to communication and transparency. 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. 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.

Table 1: Provision of Information by Central Banks

	G3			Inflation targeters					
	United States	**ECB**	**Japan**	**United Kingdom**	**Canada**	**New Zealand**	**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
Precise 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

A few general observations can be made about the comparisons in Table 1.

- In all cases the major 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 of central banks present their forecasts at 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 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 the central banks make public announcements when a policy change is made. Even a casual perusal of these statements, however, indicates that 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 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).[2]

These comparisons suggest three points on which significant variations in practices exist across the major central banks. The discussion below reviews two of these issues – the frequency of communication and the release of minutes and voting records – which have recently been the subject of debate in Australia. A third issue, concerning the role of inflation forecasts as a communication tool, is considered in detail in Section 5.

The first point concerns the handling of no-policy-change announcements. There have been calls recently in Australia for these to be accompanied by detailed explanatory statements, while the RBA has maintained a practice of issuing such a statement only when a change is made (in addition to the regular quarterly reporting schedule). In economic terms the argument for existing practice 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: ie 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

2 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 there is judged to be a need for it.

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.[3] 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 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 too great a frequency of communication.

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 Conolly (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 also 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 Buiter (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 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 terms of the argument have been 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 sectional interests if their votes were disclosed.[4] Thus, while the situations of these two central banks are not the same, the general point that

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3 This refers to the series of announcements between (August 2003 and January 2004) when the FOMC stated that the accommodative stance of policy would be maintained for a considerable period.

4 See the exchange in Hansard, House of Representatives Committee on Economics, Finance and Public Administration, 8 December 2003

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.

Empirical evidence

There has been much debate in recent years as to whether different transparency and reporting arrangements can be shown to have significant effects on economic performance. 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, Genberg and Wyplosz (2003). An innovation of Fracasso *et al*'s approach is their 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, focussed on the quality of their published forecasts, has also been produced by Chortareas, Stasavage and Sterne (2002).

Empirical applications of these indices have produced mixed results. Cecchetti and Krause (2001) 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.[5] The mean levels of inflation and output are unaffected. Finally, by contrast with Demertzis and Hughes Hallett, Chortareas, Stasavage and Sterne (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 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 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 2.

(EFPA 9).

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

Table 2: Macroeconomic Summary Indicators

Annual CPI inflation (average, percentage points) [(a)]

	1985 – 1989	1990 – 1994	1995 – 1999	2000 – 2004
United States	3.7	3.5	2.4	2.5
Germany	1.3	3.8	1.2	1.7
United Kingdom	4.7	4.7	2.6	2.4
Canada	4.4	2.5	1.7	2.4
Australia	7.7	3.3	2.2	2.7
New Zealand	8.6	2.6	1.7	2.6

Year-ended CPI inflation (standard deviation, percentage points) [(a)]

	1985 – 1989	1990 – 1994	1995 – 1999	2000 – 2004
United States	1.1	1.2	0.6	0.8
Germany	1.2	1.2	0.6	0.4
United Kingdom	0.9	2.3	0.3	0.4
Canada	0.4	2.1	0.6	0.9
Australia	1.3	1.7	0.9	0.3
New Zealand	3.6	1.4	0.5	0.7

Year-ended real GDP growth (standard deviation, percentage points)

	1985 – 1989	1990 – 1994	1995 – 1999	2000 – 2004
United States	0.6	1.6	0.9	1.4
Germany	1.1	2.6	0.8	1.4
United Kingdom	1.2	2.1	0.4	2.0
Canada	1.5	2.4	1.6	1.5
Australia	1.6	2.1	0.8	1.0
New Zealand [(b)]	n.a.	3.2	2.0	1.3

90 day bill yield (average absolute daily change, basis points)

	1985 – 1989	1990 – 1994	1995 – 1999	2000 – 2004
United States	4.3	3.3	1.6	1.6
Germany	4.3	3.4	3.0	1.9
United Kingdom	8.2	4.2	1.6	0.6
Canada	2.4	2.9	2.2	1.0
Australia	12.2	3.0	1.7	1.2
New Zealand	19.4	6.9	6.5	1.6

Notes: (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) New Zealand year-ended real GDP growth data only available on a quarterly basis from June quarter 1988.

The summary statistics in Table 2 show, broadly, three things:

- Over the past two decades, there has been a substantial reduction in 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 now 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.[6]

5. The Role of Inflation Forecasts in the Communication Strategy

The final general topic that emerges from the comparisons outlined above 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.

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
ECB	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; market forecast
Bank of Canada	GDP Expenditure Inflation	Quarterly	18–24 months	Point	No change
Reserve Bank of Australia	Inflation GDP	Quarterly Semi-annual	1–2 years	Point	No change
Swedish Riksbank	Inflation	Quarterly	2 years	Point and fan chart	No change; market forecast
RBNZ	GDP Expenditure Labour market Inflation Interest rates Exchange rate	Quarterly	2–3 years	Point	Endogenous

Source: Central banks.

6 This is the conclusion of Coppel and Conolly (2003) in a study of the effects of transparency on financial market behaviour. Debelle (2003) similarly notes that macroeconomic outcomes in Australia since the adoption of inflation targeting have been at least as good as those in other countries.

The discussion below focuses 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 the central bank's communication strategy.

5.1 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 majority of central banks construct their forecasts on an assumption that monetary policy is unchanged. The 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).[7]

The majority preference for the no-policy-change assumption 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). But the use of a technical assumption is not the same thing as non-transparency. If a decision-making committee does in fact make use of forecasts constructed on an unchanged-policy basis, then transparency requires that it is those forecasts that should be released to the public.

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[8]. 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 generally not 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 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 by a forecast of the interest rate moves required to keep inflation on track or by a forecast showing the inflation rate diverging from the target if interest rates are not changed. Why, then, have the majority of central banks opted for the unchanged-policy approach?

One reason, emphasised by Goodhart, 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.

Another reason is that, even if it is agreed that the two forecasting 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

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7 The Bank of England and the Swedish Riksbank now also publish forecasts that assume interest rates follow the path embodied in market expectations.

8 The use of a market interest rate profile does not overcome this problem since the interest rate path is still exogenous to the forecasts.

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 (Judd and Rudebusch 1998, Clarida *et al* 1998), the conventional way of presenting forecasts is likely to be more in keeping with the way policy is actually conducted.

5.2 Degree of Prominence of the Inflation Forecasts

Much of the debate in the theoretical literature assumes that all central banks have an inflation target in the sense that they must have some view of the optimum inflation rate that they are aiming for. 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.[9] 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:

> '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, p177)

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 on 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 1999 RBNZ mandate) is at the flexible end of the spectrum, and specifies

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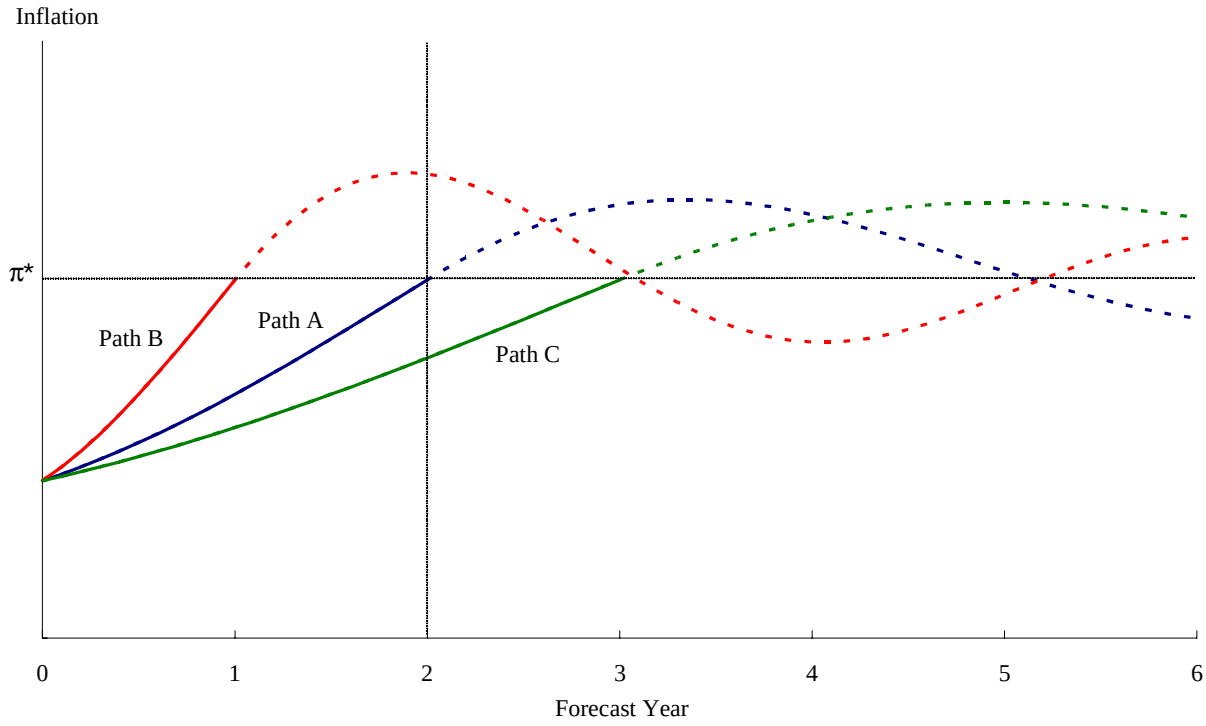
9 For a convenient summary of this debate, see the panel discussion session of the October 2003 Annual Conference of the Federal Reserve Bank of St. Louis, on the topic 'Inflation Targeting: Prospects and Problems'. As part of this session, Bernanke (2003) argued strongly in favour of the adoption of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

that monetary policy aims to achieve the inflation target on average over the medium term.[10] The sufficient-statistic approach described above is clearly incompatible with this formulation. Since the target is expressed as an average, there will at any point in time be multiple time 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 (see Diagram 1). The diagram 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 dotted lines in Figure 1.

Figure 1: Alternative Forecast Paths for Inflation



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 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?

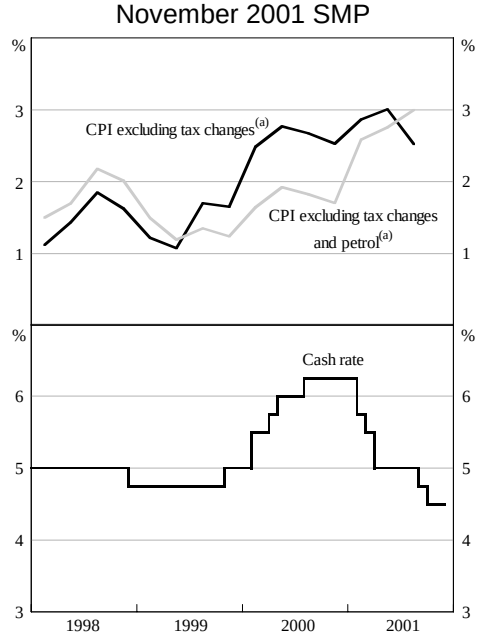
[10] An early source of confusion about this formulation was whether it implied a backward looking correction of past errors. This was dealt with by Stevens (1999).

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 Graph 1, 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.

Figure 2: Inflation and the Cash Rate



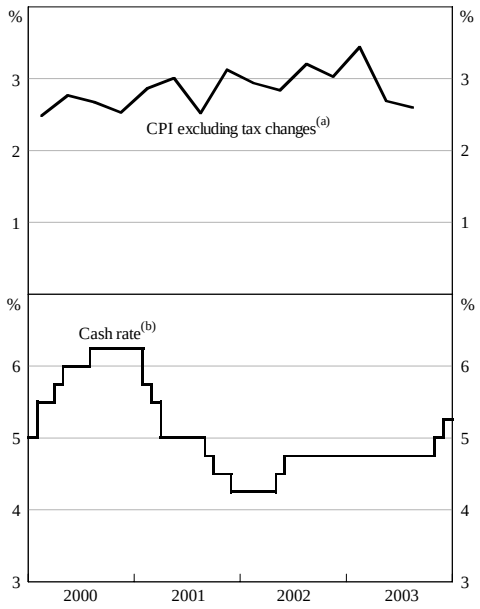
(a) Year-Ended percentage change, excluding interest charges prior to September quarter 1998
Sources: ABS; RBA

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. While both the August and November *SMP*s 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 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.

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

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 mid-point, 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.

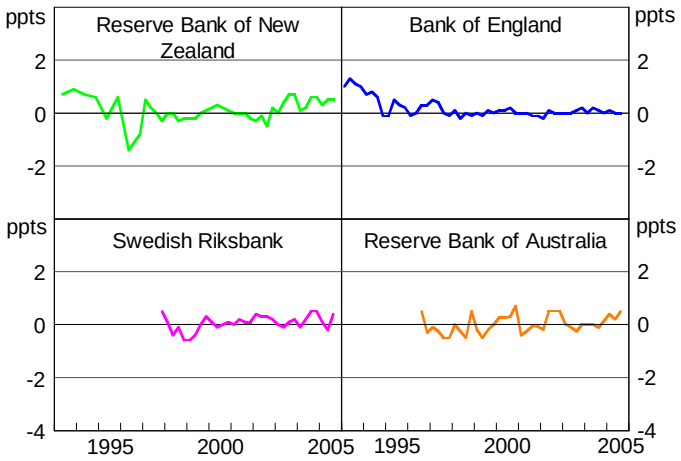
The general observation suggested by these experiences is that it is unrealistic to expect an inflation forecast path on its own to represent all of the information that policy needs to take into account, even though it is obviously an important component of it. The degree of prominence given to inflation 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 2 show that macroeconomic performance across a range of advanced countries 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 Graph 3 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 is only one instance (in a total of over 100 forecasts) of a central bank forecasting that inflation would breach its target at that horizon.

Figure 4: Central Bank Inflation Forecasts

Deviation from target (percentage points)



See Table 4 for notes.

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 (percentage points)	Average absolute difference between farthest-horizon forecast and target (percentage points)	Number of predicted breaches of target range	Number of predicted deviations from target mid-point greater than 0.5 percentage points
United Kingdom[(b)]	Aug 95	41	0.06	0.11	0	0
Canada	Jan 03	12	–0.13	0.13	0	0
Australia[(c)]	Aug 96	37	0.01	0.27	1	1
Sweden[(d)]	Dec 97	32	0.07	0.23	0	2
New Zealand	Feb 91	47	0.13	0.34	1	12

Notes: (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 the adoption of the *Statement on the Conduct of Monetary Policy 1996*.

(b) Inflation forecasts based on constant interest rate expectations.

(c) 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.

(d) Latest forecast is based on market interest rate expectations. Previous forecasts were based on constant interest rate expectations.

Source: Central banks.

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 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 forecasts of this nature to do the work of an all-encompassing summary statistic for monetary policy.

6. Conclusion

A comparison of different country experiences indicates that there is no single model for the design of an inflation target. Inflation targeting regimes differ in a number of respects including the amount of flexibility they allow for inflation to vary around the target, the way they specify the time horizon for achieving the target, their reporting and accountability procedures, and the role of forecasts in the communication strategy. In this context, the Australian approach can be characterised as one which is relatively flexible and, in comparison with many other central banks, places less emphasis on forecasts as a communication tool.

It may be, however, that these are differences more of presentation than of substance. What all inflation targeters

have in common is a public commitment to a numerical goal, the existence of some framework of accountability for achieving it, and a central role for the target as a device for explaining policy decisions to the public. This common strategic approach has brought substantial improvements in economic outcomes for all inflation targeters, in the form of reductions in both the level and variability of inflation, lower financial market volatility and consistent economic growth. Australia's performance in these respects has been at least as good as those of the other early adopters of inflation targeting.

Notwithstanding the broad similarities of approach, an important ongoing area of difference among central banks concerns the role given to inflation forecasts in the communication strategy. Economic theory suggests 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 the 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.

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