

Discussion

1. Don Brash

The range of issues relevant to the design of an inflation-targeting framework means that a fully comprehensive review is a very substantial task. Haldane has wisely narrowed down his field of discussion to three questions: what level to set an inflation target?; over what horizon?; and should inflation forecasts be published? Haldane makes a very welcome contribution to all of these topics.

The paper covers a sufficiently wide scope of empirical and practical issues to preclude a detailed discussion of them all in the space available. The comments below therefore focus on the twin themes of goals versus operational policy and the role of transparency. In terms of the latter, I comment on some practical issues associated with the Reserve Bank of New Zealand's recent moves to increase the transparency of its operations. Finally, some brief comments are offered on the literature on the costs of inflation and disinflation.

Goals, operational independence and transparency

Haldane's organising framework is based on how to specify the monetary authority's policy reaction function (his Equation (1)). While useful in many respects, this approach does not itself distinguish clearly between goals and operational policy. The implicit assumption made is that it is feasible and desirable for the *legislative* framework for monetary policy to specify the parameters of the policy reaction function. This approach therefore does not explicitly consider issues of incentives, pre-commitment, and verifiability and accountability.

An alternative view is that the design of an inflation-targeting framework would ideally take place in two steps. The first step would be to determine the most appropriate (socially optimal) policy reaction function based on the structure of the economy and the known frequencies (joint probability distribution) of demand and supply disturbances. The second step would be to design an inflation-targeting framework that *induces* the central bank to implement the desired outcome.

However, a critical problem with this alternative approach is that it assumes the designers have much more knowledge about the economy than is the case. In particular, the approach requires an extremely good knowledge of the structure of the economy and how it may change over time due to the new monetary regime or other factors. Our lack of knowledge about these matters means that inflation-targeting frameworks have in practice been designed with specific focus on the goals of policy, rather than on operational policy. Central banks have been given operational independence so that the policy reaction function may be altered as we learn more about the economy and how it is changing over time.

Yet, clearly, the central bank should be obliged to reflect society's preferences ('tastes'), including preferences over inflation variability and output variability. In this respect, Haldane observes that no inflation-targeting country has written into legislation

an explicit targeting horizon for their policy framework. This is certainly true in the sense used by Haldane; no country has legislation specifying the number of leads (j) on projected inflation ($E_t \pi_{t+j}$) and the size of the response coefficient in the policy reaction function.

As indicated above, there are good reasons for the absence of such legislation. In addition to our lack of knowledge about the fundamental structure of the economy, any legislative framework would need to take proper account of the different types of disturbances to the economy. At the broadest level, monetary policy may appropriately react quite differently to supply shocks than to demand shocks. Yet the ability of the central bank to tailor its responses to each type of shock may be unduly inhibited by legislation that seeks to average across demand and supply shocks.

Responses to these issues are likely to differ from country to country. The New Zealand framework seeks to overcome them by specifying a target *range* for inflation and a list of caveats whereby inflation may temporarily go outside the target range in response to certain types of supply shock.^{1, 2} This approach clearly gives the Reserve Bank of New Zealand discretion to set the instruments of policy.

With discretion comes an obligation that actions be consistent with the goals agreed in the *Policy Targets Agreement* (PTA). Formal monitoring occurs via the Board of the Reserve Bank and six-monthly statements to Parliament, while informal monitoring derives from the public nature of these statements. In this context, Haldane is correct to ascribe a highly significant role to transparency. Indeed, I would go further and argue that a highly transparent operational policy is as important as the explicit democratic accountability achieved by legislating the goals of monetary policy.

Transparency in practice

Haldane suggests that New Zealand comes closest to the level of transparency necessary for outsiders to verify the objectivity of policy operations. Recently, the Reserve Bank of New Zealand has advanced its transparency a step further. For the first time, the Bank's June 1997 *Monetary Policy Statement* published projections showing an endogenous path for monetary conditions.^{3, 4} In Haldane's terminology, the new approach to projections solves the dual of the inflation-control problem.

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1. The list is non-exhaustive and includes changes to indirect taxes, 'significant' terms-of-trade movements, and natural disasters.
 2. Haldane reports a number of empirical studies of the trade-off between inflation variability and output variability. It is worth noting, however, that none of these studies takes account of the role of the caveats for supply shocks and so their results are not relevant to the setting of the inflation target range in New Zealand.
 3. These projections were based on the macroeconomic model in our new Forecasting and Policy System (FPS), to be published on 4 August. See Black *et al.* (1997a,b) for further details on FPS.
 4. Prior to June 1997, the Bank published economic projections that made highly simplistic and sometimes mutually inconsistent assumptions about the paths of nominal interest rates and the exchange rate. In recent projections, these assumptions took the form of both the 90-day bank bill rates and the trade-weighted exchange-rate index held constant for the entire three years of the projection at approximately their prevailing spot rates.

The decision to publish an endogenous path for monetary conditions was made after weighing the advantages of increased transparency against a number of potential disadvantages. Three advantages are worth particular mention:

- An endogenous path for monetary conditions would almost certainly be closer to the actual evolution of monetary conditions than the previous practice of holding nominal monetary conditions constant for the entire projection period. This should reduce forecast errors and render them unbiased, increasing the informational value and credibility of the projections. Some evidence to support this is presented below.
- The path for monetary conditions enables the Bank to communicate more clearly when, and by how much, monetary conditions may need to change to be consistent with inflation returning to the middle part of the target range. Correspondingly, it encourages a shift in focus away from the level of conditions desired for the current quarter to a more balanced view of the *path* of monetary conditions (though, of course, current desired conditions will always remain highly relevant).
- The projection would always result in balanced growth over the medium to long term and inflation returning to the middle part of the target range. This is an important advantage for the Bank as it explains to the public that low inflation does not reduce prospects for economic growth.

The potential disadvantages were seen to be mainly at the practical or operational level. The two most important were that the financial markets might respond prematurely to projected future changes in the stance of policy, and that the Bank might be forced to comment or take actions more frequently in response to even small differences between data outturns and forecasts. With less than a month passing since the first endogenous projections were published, it is clearly not possible to comment on the extent to which these disadvantages are likely to occur over time. However, market responses thus far have been reasonably favourable.

Aside from these advantages and disadvantages, publishing endogenous projections has raised several other practical issues. One practical issue was whether the path of monetary conditions should represent the Bank's official view of desired monetary conditions or whether the projected path should somehow be quite separate from the Bank's official view. One possibility considered, in response to concerns about premature market actions, was to use market forward rates for 90-day bills and the TWI for the first two quarters of the projection. However, the principle of transparency suggested that it would be unsatisfactory to publish projections that did not incorporate the official view.

A further issue was whether to publish the paths for interest rates and the exchange rate, or only a weighted combination of the two as a monetary conditions index (MCI).⁵ Despite the risk of being accused of meddling with the mix of monetary conditions, the Bank decided to publish the projections for both interest rates and the exchange rate in addition to the MCI. This was decided for two reasons. First, doing so would reduce the risk of vague and confusing explanations of the forces operating in the projections.

5. Monetary conditions indices may be defined in various forms. The MCI published in the June 1997 *Monetary Policy Statement* was defined using a 2:1 ratio on the 90-day interest rate and the trade-weighted exchange rate, both in real and nominal terms. The formulae and brief discussion are provided in the Notes to Table 1 and Box 3 in the June 1997 *Monetary Policy Statement*.

Second, other information published in the projections allows market analysts to derive an approximate path for interest rates and then use the MCI to derive the path for the TWI.⁶

The above has briefly described the steps the Bank has taken recently to enhance transparency. Nevertheless, further advances are possible. In particular, the Bank of England's practice of publishing the distribution of plausible inflation outcomes is an attractive approach and may be an area for our further development.

Evidence on transparency

Haldane presents a number of interesting tests for the effects of transparency, focusing on bond yield differentials and term-structure event studies.⁷ However, in a highly open economy the behaviour of the exchange rate may also serve as a test of the effects of transparency.

Orr and Rae (1996) present evidence for the effects of transparency on exchange-rate behaviour. The starting point for their analysis is that Canada and New Zealand are very similar in having highly transparent inflation goals, but that operating procedures are much less transparent in Canada than in New Zealand. Unlike the Reserve Bank of New Zealand, the Bank of Canada does not publish inflation projections or the key parameters used as the basis for projections.

Orr and Rae's empirical analysis produced two key results:

- In both countries the relationship between movements in exchange rates and the domestic/foreign differential in short-term interest rates changed dramatically after the start of inflation targeting. Prior to inflation targets there was no significant relationship between interest-rate differentials and the exchange rate. Since the start of inflation targeting the Uncovered Interest Parity relationship has become highly significant. This shift in behaviour is interpreted as being consistent with inflation-target bands inducing corresponding exchange-rate bands (due to the role of exchange rates in the inflation process).
- The two countries differ in the changes in financial-market volatility (Schwert measure) following the introduction of inflation targets. In New Zealand the volatility of both the exchange rate and short-term interest rates has been lower since inflation targeting began. In Canada the volatility of the exchange rate has remained unchanged while volatility of interest rates has increased.

6. This is possible because of our history of (and therefore implicit commitment to continue) publishing both headline CPI and underlying inflation. The former includes the direct effects of interest-rate changes while the latter excludes these effects.

7. Haldane's use of the bond data is problematical. For both Australia and New Zealand, calculations using quarterly data differ substantially from those reported in Table 2 (which are based on bond yields on just two particular days). For example, New Zealand's bond differential with the US and Germany was lower than Australia's throughout 1989–95. Also important is that Haldane dates the beginning of inflation targeting in New Zealand as March 1990, following the signing of the first PTA. In fact, inflation targeting began at least as early as 1988. For example, Orr and Rae (1996) date the start of inflation targeting as September 1988.

On the basis of these two results, Orr and Rae conclude that being transparent about the final goals of monetary policy is not enough; a central bank must also be clear about its operating procedures to avoid unnecessary financial volatility.

Costs of inflation and disinflation

Haldane presents a full discussion of the empirical evidence on the costs of inflation and disinflation. My main comment is that, in general, the literature takes insufficient account of structural change from one inflation regime to another and that more attention needs to be given to the differing results for small open economies as compared to larger economies.

A fully comprehensive analysis of the effects of inflation would measure distortions to consumption/savings decisions, consumption/leisure decisions, asset allocation, and productive efficiency. Some of these distortions will have welfare-reducing timing effects, while others will affect the level and growth rate of output. The Feldstein-based estimates reported by Haldane focus on distortions to household consumption/savings and asset-allocation choices, with no explicit account taken of consumption/leisure distortions and productive inefficiencies. They are therefore likely to be lower bounds on the total welfare cost of inflation. Evidence is available to suggest that these other sources of distortion are quantitatively significant, and that they may be larger for small open economies (Desai and Hines 1997; Cohen *et al.* 1997).

In terms of the potential costs of price stability, Haldane makes the plausible assessment that the Summers Effect and the degree of nominal wage rigidity are unlikely to be sufficient to offset the efficiency benefits identified above. In addition to Haldane's generic arguments, the Summers Effect will almost certainly be less relevant in small open economies (than in larger economies) because in most circumstances it will be feasible to reduce interest rates to levels sufficient to depreciate the nominal exchange rate significantly. The main circumstance where this may not be possible is where economic cycles are closely synchronised across countries, so that a world-wide recession leads to very low world interest rates. History shows these to be rare events.

Similarly, evidence in favour of downward inflexibility of nominal wages in periods of positive inflation does not necessarily imply that price stability will distort factor reallocation. For example, Hutchison and Walsh (1996) derive an equilibrium model to show that the degree of nominal wage rigidity and the sacrifice ratio are related to the institutional structure of monetary policy. Using New Zealand data, they present tentative evidence that the sacrifice ratio has *increased* since the passage of the *Reserve Bank Act 1989*. This seems counter-intuitive at first sight. However, they also find evidence that the 1989 Act improved the credibility of policy and this effect tended to reduce the sacrifice ratio. Their analysis suggests that lower average inflation increases nominal wage rigidity and that, at least for New Zealand, this has dominated the credibility effect.

A key lesson from the Hutchison and Walsh evidence is that the degree of nominal rigidity is chosen by the joint behaviour of firms and workers to maximise the total value of their contractual relationship. Thus, if lower inflation leads to a *voluntary* increase in rigidity we need to understand why this occurs before concluding that welfare has been reduced.

Finally, at the micro level, empirical simulation models also need to allow for sources of firm-level flexibility. These may derive from productivity growth, labour turnover, bonus-payment structures, and probationary contracts (whereby new employees are initially paid less than their expected marginal product until on-the-job observation confirms their productivity). For these reasons, the value of many existing studies may be more questionable than suggested by Haldane.

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2. Guy Debelle

Andy Haldane raises a number of questions about the appropriate design of inflation targets. In practice, the supposed differences across countries in the design features of their inflation targets appear to me to be overstated. I will concentrate my comments on the three areas where the differences appear the greatest: the choice of horizon for the inflation target; the optimal target bandwidth; and whether the inflation forecasts should be published. I will consider whether the differences in these aspects of inflation-target design are real or apparent, and whether they are important to the effective operation of an inflation target. In doing so, I will focus on the inflation targets of the participants in this session: the UK, New Zealand and Australia.

Choice of horizon

The choice of horizon for the inflation target is posed in the paper as choosing the appropriate value for j , where the reaction function of the central bank is defined in terms

of the difference between $E_t \pi_{t+j}$ and the target π^* . While this may be a simple way to represent the inflation target in an analytical model, it does not capture the reality, at least as inflation targeting is practised in Australia, and also, I suspect, in other countries.

Rather than focusing on a single value for the target horizon, the whole time path for inflation is considered over the relevant policy horizon, which might be a number of years. From an optimal-control perspective, if one is aiming to minimise the variability of inflation and output over time, the best result can be achieved by reacting to the whole future path of inflation and output, rather than reacting to the expected value of inflation in a particular period. This is especially the case, given that monetary policy affects inflation over a number of periods, rather than at one unique time horizon (although its influence may be greatest at a particular horizon).

Diagram 1 which suggests a trade-off between inflation and output variability, strikes me as misleading in this respect. Generally such curves reflect the impact of varying the weights on inflation and output in the objective function, rather than the time horizon of the central bank. Gordon de Brouwer and James O'Regan's paper at this conference shows that varying the time horizon of the central bank shifts the whole trade-off curve toward (or away from) the origin for a given set of relative weights on inflation and output.

Optimal bandwidth

The most obvious difference between the inflation-target regime in Australia, that in New Zealand, and the new regime in the UK, is the specification of the width of the inflation target band, and the related penalties for breaching the band. The band in New Zealand has been viewed as an electric fence, where the Governor is shocked for any breach of the band. In Australia, we did not adopt such a hard-edged band, because of concerns that the resulting discontinuity in the payoff function might induce instability in the instruments of monetary policy, and further may result in policy-induced business cycles. More recently this seems to also have been recognised in New Zealand, with the widening of the band and with the edges of the band being interpreted more as a trigger for review than a trigger for dismissal – the voltage on the electric fence has been lowered so that the shock is no longer necessarily fatal. A similar use of a band as a trigger point for a review has been adopted in England, although no explicit penalties for 'inappropriate' conduct have been specified.

In Australia, there is no band specified. Rather, the objective of monetary policy is to achieve an average inflation rate between 2 and 3 per cent, over the course of the cycle. In practice, the Bank is likely to become increasingly uncomfortable at an increasing rate as inflation moves away from this desired level. The assessment of whether central banks have performed satisfactorily in providing a low-inflation environment can only be fully answered over the medium term.

The differences between the three systems are principally in the process of review of the conduct of monetary policy, specifically: the frequency of the review; the reviewing body; the penalty that may be imposed as a result of the review; and on whom the penalty is imposed.

The review is triggered periodically in the UK and New Zealand when the inflation rate moves outside the designated range. In Australia, the review is semi-annual, when the Governor is required to testify before a parliamentary committee on the performance of monetary policy. Both New Zealand and the UK have similar processes. In terms, then, of the frequency of the regular reviews, there seems to me to be little difference in the three systems. Each submits the conduct of monetary policy to review at a satisfactorily high frequency.

In New Zealand, the review is conducted by the Reserve Bank Board which then reports to the Minister of Finance. In the UK, the reviewer is the Chancellor, to whom the Bank of England is required to write a letter, justifying its actions whenever inflation deviates by one percentage point from the central target of 2.5 per cent. In Australia, the regular review is conducted by a committee of parliamentarians (as it is in the other two countries). Questions that are raised here include:

- Should the reviewing body be comprised of ‘monetary-policy experts’ or politicians?
- Would a review body (particularly a political one) ever conclude that monetary policy should have been even tighter than was actually implemented, or is there a bias towards only penalising or criticising excessive tightness in monetary policy?

New Zealand is the only one of the three that imposes an explicit penalty for breaching the inflation target: the Governor can be sacked if the Reserve Bank Board concludes that his/her performance has been unsatisfactory. Whether there is an improvement in inflation outcomes induced by an explicit performance contract is debatable. The principal-agent literature on central-bank independence tends to support the conclusion that explicit penalties make a difference (Walsh 1995a,b; Persson and Tabellini 1993). However, even if there is no explicit penalty, central banks are subject to public censure for unsatisfactory performance and the Governor can suffer the penalty of not being reappointed to another term. It is arguable that these penalties are sufficient to induce ‘appropriate behaviour’ for a group of individuals who value their reputation for inflation control, particularly among their central-banking peers.

In both Australia and the UK, there would need to be a wide-ranging reform of the central bank structure to introduce a penalty similar to that in New Zealand. In both countries, monetary policy is the responsibility of a committee or board rather than the responsibility of one particular individual. To impose a penalty for inappropriate inflation performance would seem to require that this structure be changed to place ultimate responsibility for monetary-policy decisions in the hands of a single individual (as it is in New Zealand). I will take this issue up again shortly, in discussing whether inflation forecasts should be published.

If a penalty were adopted, it would appear preferable to impose the penalty only if there was any *ex ante* foreseeable error in the conduct of monetary policy. The reviewing body should not be given the benefit of hindsight in determining whether the actions of the policy-maker were appropriate. This seems to be the approach taken in New Zealand when they were reviewing the performance of my co-discussant in 1996. The Board came to the conclusion that while *ex post* monetary policy was not sufficiently restrictive to prevent inflation breaking the band, a marginal breach of the band should not call into question the Governor’s performance, which had been very successful.

Publishing inflation forecasts

Both the Reserve Bank of New Zealand and the Bank of England publish quarterly forecasts for inflation. In comparison, the RBA provides less information on the exact quarterly profile for inflation, instead focusing on the broad, qualitative assessment of the outlook for inflation. For example, in the May 1997 *Semi-Annual Statement on Monetary Policy* (which is the basis of the Governor's testimony before the parliamentary review committee), it was stated:

'the Bank expects underlying inflation during 1997 to remain low, probably declining slightly below 2 per cent for a while. Some pick-up in inflation is likely in 1998 as the favourable exchange rate effects pass but, provided growth in labour costs is not excessive, price inflation should remain within the 2 to 3 per cent range'.

Is there much to be gained from supporting such a statement with a more explicit numerical profile for inflation? In particular, the very adoption of an inflation-target regime may render the publishing of inflation forecasts somewhat obsolete. The central bank would not be publishing an inflation forecast which lay outside the desired range at the policy horizon, for in doing so, it would be admitting that the current settings of monetary policy were inappropriate. Andy dismisses this argument as a *non-sequitur* in his paper but it still strikes me as a valid point.

The Bank of England's decision to publish its forecasts is more a result of its lack of independence before the recent reforms (Briault, Haldane and King 1996). When the final responsibility for monetary policy still rested with the Chancellor, the Bank's inflation forecasts were a major part of its armory in the policy debate. Such a role is now likely to have diminished with its newly bestowed independence.

A qualitative forecast for inflation maintains the focus of discussion on the critical issue of the inflation outlook at the broader level, without the discussion becoming hung-up on the more technical issues of forecasting. This may be more important for the role of inflation targets as an anchor for inflation expectations. If inflation forecasts were published, would the public be able to appreciate the reasons why the central bank needed to continually revise its forecasts, or would their confidence in the central bank's competence decline? It may be easier to explain the monetary-policy decision to the public in more qualitative terms.

From a technical point of view, there is the interesting question of the appropriate assumptions for the path of monetary policy when compiling the forecasts. Should monetary policy be assumed to maintain an unchanged interest rate or should an optimal path of monetary policy be incorporated into the forecasts? If one adopted the latter approach, should one also publish the underlying interest-rate path? This may run the risk of again diverting attention from the inflation outlook toward the interest-rate outlook.

Finally, there is the question of whose forecasts should be published. The forecast should be that of the policy-maker, rather than that of the economic department of the central bank, or the forecast of a particular model of inflation. The policy-maker's forecast is clearly the most relevant as that is the one on which the monetary-policy decision is made. Such a forecast is likely to involve some idiosyncratic adjustments to any model-derived forecast, incorporating knowledge about the residuals in an inflation equation that may reflect the peculiarities of current economic circumstances, or more

generally embody the lessons of experience accumulated by the professional policy-maker.

If the published forecast is that of the policy-maker, it becomes more problematic to publish the underlying framework. It may be difficult to specify or quantify the (necessary) *ad hoc* adjustments that the policy-maker feels is appropriate. The Bank of England makes some attempt to do this in publishing probability distributions around the central point forecast. However, it is less clear what the approach should be if the policy-maker feels the central point should be adjusted rather than the balance of risks.

Again, as discussed above in relation to the penalties for breaching target bands, if inflation forecasts are published, their accuracy should be assessed in relation to other contemporaneous forecasts, rather than with the benefit of hindsight. For example, as discussed in the paper by Steve Grenville, while some have argued that the RBA's monetary policy was overly restrictive in 1989, this should be taken in the context that the Bank was generally in the 'weaker' part of the distribution of the outlook for activity.

In general, there must be an expected net benefit from publishing quantitative forecasts which outweighs the learning costs of changing the existing regime, to justify such an approach.

Other issues

I will turn briefly to other issues that are raised in the paper. The key conclusion to take away from the first half of the paper that addresses the optimal level for an inflation target, is that while growth-rate effects of inflation clearly are of great importance, one should not ignore level effects. This applies both in assessing the costs and benefits of moving to a lower inflation target. It is a critical question whether the costs of disinflation are transitory or permanent, but these also must be weighed against the permanent effects on the level of output of lower inflation.

In assessing which price index should be targeted, the paper raises the interesting question that if welfare is most dependent on a measure of inflation that includes volatile items, then that is the most appropriate measure to target. However, it must be kept in mind that monetary policy can only have a marginal impact on these prices, the volatility of which is primarily determined by exogenous factors such as the weather. Hence, targeting an underlying rate of inflation is likely to be more satisfactory from an operational perspective. In other words, the underlying rate of inflation functions as an operational definition of the final objective of stability in the consumer price inflation rate.

Finally, a couple of minor points: first, the figure on the linkage between money and inflation seems to me to be nearly completely a story of velocity, so it is difficult to draw any inference about the neutrality of money from it. Second, convexity of the Phillips curve affects the appropriate speed of disinflation, not the decision whether to disinflate or not.

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3. General Discussion

The discussion focused on how an inflation target should be designed. The primary issues were:

- the appropriate mean rate of inflation;
- the speed with which the central bank should return inflation to the target after a shock; and
- whether publication of forecasts by the central bank was desirable.

While there was a broad consensus that low and stable inflation is necessary for sustainable economic growth, participants generally agreed that, on the basis of current knowledge, a number like 2½ per cent is better than zero. Most thought that in Australia, there have been benefits from reducing inflation from its 1980s average of 8 per cent to its 1990s average of about 2½ per cent. These included longer planning horizons, greater focus on business fundamentals and attention to the management of costs. But the existence of additional benefits from further reducing inflation to zero was considered much more doubtful by most participants. Various arguments were advanced. First, at times, it may be necessary to reduce real interest rates to low, even negative, values, and a zero-inflation target would make this difficult. It was, however, noted that this argument was weakened if fiscal policy could be used to stimulate aggregate demand. Second, low, non-zero inflation facilitates real-wage adjustment if nominal rigidities – such as resistance to nominal wage reductions – exist (though such rigidities could themselves be a product of inflation). Third, it is important to avoid deflation since this can seriously undermine financial stability.

It was noted that these considerations mean that central banks need to take the bottom of their inflation-target bands as seriously as they take the top of their bands. Despite these arguments, a degree of caution in drawing strong conclusions about the benefits of zero inflation was suggested, as no economy in recent times has operated for an extended period with zero inflation. Some participants felt that as experience with price stability builds, some of the arguments against zero inflation might need to be rethought.

One of the rationales for an inflation target is that it helps solve some of the political-economy, or time-inconsistency, problems associated with monetary policy.

Some speakers saw these problems emanating from the central bank's desire to reduce the rate of unemployment below sustainable levels. Others argued that forward-looking central bankers understood that, in the medium term, there was little to be gained from pushing unemployment lower if this simply caused higher inflation. Instead they argued that the time-inconsistency problem comes from political pressures which can be brought to bear even on independent central banks. It was argued that an inflation target which is endorsed by the government was one way of reducing these pressures, as politicians would find it relatively difficult to criticise the central bank if it was achieving its inflation target.

On the question of how quickly inflation should be brought back to target after a shock, the discussion focused on general principles rather than simple rules. It was noted that in assessing the appropriate speed of return it was important to take account of why inflation moved away from the target in the first place. In general, it was thought that policy could be reasonably aggressive in response to demand shocks, since inflation and output responses are in the same direction. Deciding the appropriate response to adverse supply shocks is more difficult, as the tighter policy needed to reduce inflation is likely to exacerbate the decline in output. Most thought that this suggested a slower return of inflation to target, in the interests of minimising costs. However, it was noted that if a slower return led to a significant rise in inflation expectations, this could itself make the process of disinflation even more costly.

In the discussion of whether central banks should publish their forecasts, it was widely accepted that good monetary policy requires the central bank to be forward-looking and that there are benefits from the central bank explaining its view of the future to the public. The debate centred on how that view should be communicated. Some saw value in the central bank publishing detailed numerical forecasts of inflation. It was also suggested that these forecasts should be accompanied by probability distributions in order to convey a sense of uncertainty. Others questioned this approach on the grounds that any medium-term forecast should be the same as the target; in that case the issue could quickly become whether the central bank should publish the interest-rate path that it thought consistent with its inflation objective. Most participants thought this undesirable.

The discussion concluded with the observation that the practice of inflation targeting is comparatively new, and that this makes it difficult to make definitive assessments of exactly what design features represent best practice.