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Foreign Experience with the Formulation and Discussion of Inflation Objectives¹

Almost all of the major foreign central banks have adopted inflation objectives during the past seventeen years. This note elaborates further on the experience of nine advanced-economy central banks with these objectives, complementing the background paper for the January 2005 FOMC meeting and a recent update to that paper this past October. The paper focuses on two broad issues: (1) the formulation of inflation objectives (sections 1 to 4), and (2) how central banks talk about their objectives and the horizons at which they hope to meet these objectives (sections 5 and 6). The features of these objectives are presented in Table 1.

To summarize the main points in this note:

- Of the central banks studied, most have inflation objectives that include both a point target and a range. The ranges are either symmetric around the point target or asymmetric with the target near the top of the range. At present, the ranges are generally seen as having soft edges, so that inflation rates just inside and just outside the range are not treated as sharply different.
- For most central banks, the center of the inflation objective is 2 percent or 2½ percent. The width of the range or tolerance region is typically 2 percentage points.
- The targeted price index is nearly universally a CPI, most often an all-items CPI. However, central banks make heavy use of other price indexes (usually some kind of core CPI or measure of underlying inflation) when formulating and communicating policy.
- Who sets the inflation objective differs across central banks. In most of the six self-described inflation targeters, the central bank and government have some joint role in setting the target. The three central banks that do not consider themselves inflation targeters set their own inflation objectives. In many cases, the inflation objective is reviewed periodically.
- Central banks usually refer to their inflation objectives in their press releases or press conferences aimed at explaining policy moves, especially when policy is being tightened. Often there is a reference to inflation pressures, inflation expectations, and/or some discussion of inflation prospects. Some central banks use a similar template every time they announce a policy decision, even if it results in no policy change, while others

¹ Karen Johnson, Steven Kamin, and Michael Leahy contributed comments to this paper.

utilize a shorter announcement when policy remains unchanged. When commodity price shocks or tax changes lead to temporary surges in measured inflation, most central banks discuss how they see underlying inflation evolving rather than focusing only on headline inflation, which tends to be more volatile. Some refer explicitly to their own inflation forecasts and how they have changed (the Riksbank and the Norges Bank); others are more qualitative and descriptive (the Reserve Bank of Australia (RBA)).

- Almost all of the central banks with inflation objectives make tradeoffs between their inflation objectives and other goals, such as output stabilization. Most cite output stabilization in their explanations of policy rate decisions. Those central banks with clear mandates to stabilize output (such as the RBA or Norges Bank) establish a central role for it in their communications, while those whose goal of output stabilization is less explicit at times imply that output stabilization is conditional on meeting the inflation target. Most central banks discuss developments and prospects for output or employment as factors behind the likely evolution of inflation.
- All of the central banks characterize the horizon at which they hope to meet their inflation goal, but some do not specify a precise time frame. In the past few years, some central banks have emphasized that their horizons may be shorter or longer depending on the shocks hitting the economy and the need to meet other goals.

1. Rates and ranges

Figure 1 shows the evolution of target ranges for most of the central banks in this study (the Bank of Japan's is not shown), along with inflation (the black line). Where point targets fall within these ranges varies across central banks, as does the emphasis given by policymakers to point targets versus ranges. The objectives that are expressed as ranges or tolerance regions have over time been changed to or interpreted as having less hard edges than initially. That has served to reduce the distinction between objectives that are ranges and those that are points.

New Zealand and Australia have target ranges but do not seem to prefer any one point within their respective ranges to another. The Bank of Canada (BoC) has a target range of 1-to-3 percent, but its communication often emphasizes the midpoint in addition to the range.

The other three inflation targeters have a point target, but with an explicit or implicit range around the target. The Swedish Riksbank has a target of 2 percent, with a "tolerance" region of 1 percentage point on either side, though it does not usually refer to this region in its press releases and minutes. The Bank of England (BoE) also has a point target of 2 percent, but if inflation deviates by more than 1 percentage point from this objective, the Monetary Policy Committee (MPC) must write an open letter to the Chancellor of the Exchequer describing the

reasons for the deviation and the steps the MPC will take to bring it back, how these steps are consistent with other goals, and when the MPC expects inflation to return to target. The MPC has yet to have to write such a letter. Similarly, the Norges Bank has indicated that “if there are significant deviations between actual price inflation and the target, the Bank will provide a thorough assessment in its annual report. Particular emphasis will be placed on any deviations outside the interval of +/- 1 percentage point.”²

Two central banks who do not consider themselves inflation targeters, the European Central Bank (ECB) and the Swiss National Bank (SNB), have asymmetric inflation objectives. The SNB aims to keep inflation below 2 percent. The ECB aims at an inflation rate below *but close to* 2 percent over the medium term. Prior to May 2003, the ECB Governing Council had specified a simpler objective of inflation below 2 percent. However, it faced considerable criticism for establishing a target ceiling but no floor, for providing insufficient guidance as to what average rate to expect, and for lack of clarity about whether inflation rates slightly above 2 percent would be treated fundamentally differently from rates just under 2 percent. In May 2003, the ECB adopted the current formulation, but still was criticized for not providing a clear definition of “close to 2 percent.”

The Bank of Japan (BoJ) during its episode of quantitative easing promulgated an asymmetric goal of inflation greater than zero. More recently, the BoJ polled the members of its Policy Board and concluded that their views on the definition of price stability are consistent with a range from 0-to-2 percent, with most members’ medians near, but on both sides of, 1 percent.

For the central banks that consider themselves inflation targeters, the width of their ranges is typically 2 percentage points. Australia is the exception in having a relatively narrow range of 1 percentage point, although it could be argued that the RBA interprets its target range as effectively a “thick point,” in that inflation rates outside the range are tolerated as long as inflation remains within the range on average over the business cycle.

The structure of inflation objectives has evolved over time for some of the central banks. The Bank of England has seen the most change. In October 1992 its objective was a range of 1-to-4 percent, with the aim of bringing inflation down to the lower part of the range. In June 1995, its objective was changed to an asymmetric goal: inflation of 2½ percent or less. In May 1997, at the creation of the MPC and the granting of BoE independence, the goal became a point target of 2½ percent on the RPIX with deviations in either direction treated symmetrically. Despite the aim of the initial target range, the 1-to-4 percent band was perceived by many as a “range of indifference,” which implied that inflation just outside the range would be viewed as

² Norges Bank (2001a).

qualitatively different from inflation just inside the range. Over this period, inflation tended to stay near the upper border of the range.³ Dissatisfaction with this outcome motivated the decisions to shift to an inflation ceiling and later to a point target with deviations in either direction treated symmetrically.

Similarly, the Reserve Bank of New Zealand (RBNZ) initially acted as if its target band had “hard edges,” with inflation just outside the band treated as qualitatively different from inflation just inside the band. The combination of a very low target range (0-to-2 percent) and hard edges made the initial framework perhaps the most aggressive and single-minded approach to harnessing inflation of those we consider. This framework may have been a response to New Zealand’s relatively poor record with inflation. As time passed and inflation became better behaved, this framework came under criticism for creating excessive volatility in interest rates, exchange rates, and output. In response, the RBNZ not only raised its target range (as discussed below) but also softened the edges of the range, showing less concern for small short-term movements outside of the range.⁴

In Canada, the Governor and the Minister of Finance initially called in early 1991 for a gradual reduction of the inflation rate—first to 3 percent by the end of 1992, then to 2½ percent by mid-1994, and finally to 2 percent by the end of 1995. In December 1993, with inflation fluctuating below 2 percent, the Finance Minister and the Governor announced the first of three extensions of a 1-to-3 percent target range, with a midpoint of 2 percent.

2. Which number?

For central banks that consider themselves inflation targeters, the point target is most frequently between 2 percent and 2½ percent. Norway has a target of 2½ percent and Australia’s target range is centered on 2½ percent. The United Kingdom, Sweden, Canada, and New Zealand have a target or midpoint of 2 percent. The ECB and the Swiss National Bank have a 2 percent ceiling, with no specified midpoint. The Bank of Japan has chosen not to set an inflation target but to report indications of the views of individual Policy Board members on medium- to long-term price stability. The BoJ board members have preferences that center around 1 percent, well below the targets or midpoints of other central banks.

³ Bernanke et al. (1999) describe the conflicts between the Chancellor of the Exchequer, who made monetary policy decisions at the time, and the Bank of England, which published forecasts and provided advice. Despite a number of forecasts from the Bank that showed inflation at the top of the range and possibly exceeding it, the Chancellor either did not tighten or even at one point eased monetary policy in response to concerns about the rate of GDP growth.

⁴ RBNZ Deputy Governor Murray Sherwin (1999) described this change as moving “in the direction of the Australian-style ‘thick point.’”

In addition to the changes to the U.K. and Canadian targets described above, the most significant changes in the level of an inflation target have been in New Zealand. The RBNZ started with a range of 0-to-2 percent and subsequently the government raised the range in two steps, first raising the ceiling to 3 percent and then raising the floor, for a range of 1-to-3 percent. The RBNZ is the only major inflation-targeting central bank to have had a range that included zero, which was ultimately abandoned as unsatisfactory.

Reasons that central banks or governments have given for choosing an inflation target that is above zero include concerns that macroeconomic stabilization would become more complicated if inflation were near zero because of downward nominal wage rigidity, the zero lower bound for nominal interest rates, the upward bias in the consumer price index (CPI), and the potential risk of deflation. In addition, central banks have expressed the belief that the marginal benefits of very low inflation are likely to be small relative to the costs of achieving it.

Other reasons offered for choosing a particular number for the target are less “rigorous.” When discussing desirable inflation levels with the government in the late 1980s, RBNZ officials “were more than a little surprised to see [then Minister of Finance] Mr. Douglas indicate in a television news interview broadcast on 1 April 1988 that policy was to be directed to reducing inflation to ‘around 0 or 0-to-1 percent’ over the following couple of years.”⁵ In both Canada and the United Kingdom, as discussed above, the initial targets were paths for inflation over the next few years. The end points or lower ranges of these paths tended to become the inflation target.

Historical continuity has been another reason for choosing a particular level. In Norway, the Regulation on Monetary Policy specified a goal of 2½ percent for inflation because that rate was close to the average for inflation in Norway since the beginning of the 1990s.⁶ For the ECB, the inflation ceiling of 2 percent was justified mainly on the grounds of continuity—the Bundesbank had used 2 percent as the rate of inflation on which it based its monetary growth targets, and the Council of the European Union had, after July 1995, focused in its statements on encouraging member states to achieve inflation below 2 percent.

In several countries, the level of the inflation target was justified in part by the fact that it was consistent with target levels chosen in other countries that had enjoyed success with inflation targeting regimes. In particular, Sweden and Australia used this as a justification for choosing their respective inflation target levels.⁷

⁵ Reddell (1999)

⁶ See the Norges Bank’s website, “Monetary Policy in Norway – Objective.” {http://www.norges-bank.no/english/monetary_policy/in_norway.html}

⁷ As Glenn Stevens (2003) said “To be frank, this was to some extent serendipitous. We were already in that neighbourhood, with inflation down to about 2 percent by 1992. When we looked around at the best performances

3. Which index?

All of the central banks that we study target increases in a CPI, usually the overall (all-items) CPI. The Norges Bank is the exception in that it puts particular emphasis on CPI inflation adjusted for tax changes and excluding energy products (CPI-ATE).

The rationale that central banks give for targeting the overall CPI is that it is broad, familiar to the public, and the most relevant index for consumers' cost of living.⁸ Furthermore, the CPI generally has the practical advantages of being available monthly, with a short lag, and it is essentially never revised. In choosing a target index, the Riksbank explicitly recognized a trade-off between choosing a core versus broad inflation index. The core index would involve fewer transitory fluctuations and, thus, might be a better indicator of underlying inflationary pressure; the broad index is familiar to the public and closer to the measure affecting long-run decision-making. It chose the broad index, recognizing that this implied the need for more frequent explanations—explanations that might have to be “technical and focused on details.”⁹ In Australia, the choice of the overall CPI rather than alternative measures such as the private consumption deflator reflected the fact that the CPI had the greatest public recognition.

Central banks generally have sought to avoid targeting an index that includes interest payments. The BoE, the RBNZ, and the RBA each at one time targeted an inflation measure that excluded the direct effect of changes in interest rates; all three now target overall inflation because in each country the definition of overall inflation has been changed to exclude interest payments. Similarly, euro-area headline inflation excludes mortgage interest payments.

Even as they target overall inflation, the central banks make heavy use of other price indexes (usually some kind of core CPI) when formulating and communicating policy. For instance, the Riksbank has reported and discussed several core inflation measures, especially underlying inflation (the UNDI_X measure of inflation), in justifying its policy decisions to allow CPI inflation to deviate from target in the short run, although the citation of other measures has decreased since adopting a longer policy horizon (see below).¹⁰ Swedish inflation as measured by the CPI has often differed considerably from other potentially relevant measures, and the Riksbank has stated that no single index gets special attention in justifying the short-run course

on inflation, we saw first that no one had managed to keep inflation within a very narrow band for long, and second, that the best average performances since World War II were in the ‘two point something’ region, with quite a wide degree of variation around that average.”

⁸ It is “most relevant for the cost of living for most Canadians,” Bank of Canada (1991).

⁹ Heikensten (2000).

¹⁰ See, e.g., any of the quarterly inflation reports of the Riksbank. The role of the various indexes is detailed in the 2003:3 Inflation Report. Rosenberg (2004a) provides further discussion on this point with examples.

of policy. The items that are most often excluded from core are food prices, energy prices, and the effects of indirect taxes.

The Bank of Canada uses a core measure of inflation to guide policy in the short term, because such a measure excludes certain components of the CPI that are seen as volatile and subject to transitory influences requiring no policy response. The core measure used excludes eight volatile components of the total CPI and the effects of indirect tax changes. This measure is seen as moving closely on average with total CPI, but in the event of persistent differences between the two measures, the Bank says it would adjust its desired path for core CPI to meet its target with respect to total CPI. In Australia, the central bank regularly considers a wide range of inflation measures, and the index receiving the most emphasis varies over time. Among the measures the RBA monitors are the CPI excluding volatile items and the price of market goods and services excluding volatile items.¹¹ The RBA also publishes a weighted median and a trimmed mean measure of CPI inflation that it considers to be proxies for underlying inflation.¹²

The ECB has focused its public discussion of policy almost solely on overall inflation rather than on any measure of core inflation. ECB policymakers have expressed the belief that core inflation is not a good indicator of future trends in overall inflation (the targeted index); rather they believe that, in the euro area, when the two inflation measures differ, core inflation has tended to move towards overall inflation rather than the reverse. That said, ECB policy has not always responded to changes in energy prices, food prices, and indirect tax changes that were thought to have transitory effects.

A number of central banks have seen changes to the index that they target. Some of these changes have been relatively minor, such as in the case of New Zealand, where inflation was redefined to exclude credit services, such as mortgage interest payments. In December 2003, the Bank of England faced a more substantial change with the switch in its target index from the Retail Price Index excluding mortgage interest payments to the Consumer Price Index. This change was not well received, even within the Bank, in part as it excludes any measure of the price of owner-occupied housing services. Despite these concerns, the change seems to have occurred with relatively few problems.

¹¹ The volatile items that are excluded are fruits and vegetables, and gasoline. The prices of market goods and services exclude these as well as prices of goods and services that are set by the public sector, such as for pharmaceuticals and urban transport.

¹² The trimmed mean is calculated by removing a certain proportion of the weight from each tail of the distribution of price changes, rescaling the remaining weights to sum to one, and calculating the weighted mean of the remaining distribution. The weighted median is calculated as the weighted price change in the middle of the distribution.

4. Who sets the target?

Who sets the inflation objective differs across central banks. The three central banks that do not consider themselves inflation targeters set their own inflation objectives. Of the six self-described inflation targeters, two have targets set by the government together with the central bank (BoC and Norges Bank), two have targets that were originally set by the government (BoE and RBNZ), and two have targets initially set by the central bank (Riksbank and RBA). In these latter cases, there may have been some consultation between the government and the central bank. In some cases, the responsibility for setting the target appears to have shifted to being shared to some extent by the government and the central bank, even though such sharing is not required by law. The RBNZ Act establishes that the government should determine the specific inflation target and any trade-offs between inflation and output. However, the target is specified in “Policy Target Agreements” (PTAs), which are described as agreements between the Minister of Finance and the RBNZ Governor. The RBA originally announced its own inflation target in 1993, and the target was formalized in August 1996 when the government and Governor issued its first “Statement on the Conduct of Monetary Policy.” In Sweden, although the government had announced in 1991 that low inflation was an overriding political goal, the Riksbank’s January 1993 announcement of an explicit inflation objective was unaccompanied by legislative change.¹³ Soon thereafter, various changes to the Riksbank’s legislative mandate were proposed. Many of these were adopted in 1999, when a new Constitution and new Riksbank Act came into effect.

Some central banks review the numerical inflation objective periodically, sometimes according to a pre-set schedule. The joint agreements of the Bank of Canada and the Minister of Finance are renewed every five years, with the most recent agreement adopted in November 2006. The remits from the Chancellor of the Exchequer to the Bank of England are sent once a year at the time of the budget in the spring. However, the Chancellor can, in principle, change the inflation goal at any time. In Japan, the range that describes the Board’s understanding of price stability, first set in March 2006, will be reviewed annually and so could change as the current Board members change their views or as the membership of the Policy Board changes.

For the Reserve Banks of New Zealand and Australia, the review of the inflation targets sometimes occurs with political or staff changes. There is no set frequency for renewal or revision of the RBNZ’s PTAs. After the initial target was set in March 1990, PTAs were issued in December 1990 and December 1992. However, the formation of a new government was the occasion for a new PTA in December 1996; the most recent PTA came at the beginning of the

¹³ The Riksbank stated an inflation goal accompanied by a two-year startup period, so that the goal was to become operational in January 1995.

five-year term for the RBNZ governor in December 2002. Likewise, the Reserve Bank of Australia has issued joint statements with the government in 2003, when the Governor was reappointed, and in 2006, when a new Governor was appointed.

Even in other cases where the numerical objective for inflation is not subject to regular review, central banks do make occasional changes to their inflation objectives, such as the ECB's clarification of its objective in May 2003 mentioned above. Likewise, even with pre-announced times to review the goals, changes have been made at other moments. For example, the Chancellor of the Exchequer Gordon Brown announced his intention to alter the Bank of England's inflation goal, changing the index and lowering the numerical target, in June 2003, just two months after releasing his latest remit.

5. Discussion of inflation and other objectives

In general, central banks that have set explicit inflation objectives have drawn clear links between their inflation targets and their policy actions in subsequent communication. Many do so in press releases or statements at the time a policy change is announced. Some even do so when policy remains unchanged (RBNZ, BoC). Communication strategies have changed over time and have tended to give a greater role to the inflation objective. For specific examples, please see Appendix 1.

Almost all of the central banks with inflation objectives face tradeoffs between their inflation objectives and other goals. Although some of the early adopters of these inflation objectives appeared to be single-minded in the pursuit of their inflation goals, usually at a specific horizon, most have evolved into so-called or self-described "flexible inflation targeters." By this is meant that in general, other goals—mainly output stabilization—are cited at times to justify deviations from price stability in the short run.

As shown in the last row of Table 1, in most cases, central banks with explicit inflation objectives also have mandated goals (sometimes secondary) to stabilize output or employment. Some also have goals to manage the value of the exchange rate, interest rates, or to maintain financial stability. Unlike inflation goals, none of these other goals is characterized with an explicit numerical target. The relative importance of these goals is not always clear: the mandates are phrased in different ways and are set down in a variety of documents. Sometimes the goals are specified in legislation, or in a treaty in the case of the ECB, other times in directives from the government or in other official documents.

Some central banks have relatively clear mandates for an output or employment goal. For

example, Norway's Regulation on Monetary Policy declares that the objective of monetary policy is to maintain the domestic and international value of the krone with the operational target of 2½ percent inflation, but the regulation also states that monetary policy should contribute to stable developments in output and employment. In Australia, the Reserve Bank Act requires the RBA's Board to stabilize the currency, maintain full employment, and contribute to the economic prosperity and welfare of the people of Australia. In New Zealand, the 1999 PTA for the first time included the statement that "[i]n pursuing its price stability objective, the Bank shall . . . seek to avoid unnecessary instability in output, interest rates and the exchange rate."

In contrast, other central banks have mandated objectives for output or employment that appear to be in some way secondary to inflation. However, many central banks in practice appear to be balancing output and inflation stabilization. For example, the Riksbank Act specifies two goals for monetary policy: maintaining price stability and a safe and efficient payments system. Other official documents indicate that the Riksbank also should support the goal of full employment, so long as achieving it does not conflict with attaining price stability.¹⁴ However, Riksbank officials publicly speak of balancing deviations of inflation from target against deviations of output and employment from potential.¹⁵ The treaty under which the ECB was established sets price stability as its primary objective, but also provides that "without prejudice to the objective of price stability," the ECB will also support "high level of employment" and "sustainable and non-inflationary growth." The Bank of England Act states that the goal of the MPC is "[to] maintain price stability and, subject to that, to support the economic policies of Her Majesty's Government, including its objectives for growth and employment." Some MPC members seem to have interpreted "subject to that" to mean, strictly, that they should not deliberately allow any short-run deviation of inflation from the target to pursue other objectives. Others argue for a more flexible interpretation.¹⁶ Former MPC member Charles Goodhart (2004) argues that ultimately the MPC will be shown to be a flexible inflation targeter, trading off inflation and growth in the short run in a manner similar to other central banks.

When explaining policy actions, central banks often cite output or employment in their reasoning, but how they talk about these goals varies. In general, central banks with clearer mandates to stabilize output treat this goal independently in their official statements at the time of monetary policy decisions. For example, in April 2001, the RBNZ stated, "The main reason

¹⁴ Bäckström (2001).

¹⁵ Deputy Governor Rosenberg (2004b): "Simplified, one can say that the Riksbank's task is to keep actual output as close to potential output as possible. The higher the long-term sustainable growth rate, the higher the actual growth rate can be without resource utilisation becoming so high that inflation takes off and the Riksbank is forced to intervene to subdue demand." Also, then-Deputy Governor Heikensten (2000): "the Riksbank considers developments in the real economy and tries, when making decisions, to avoid unnecessary disturbances and fluctuations in growth and employment."

¹⁶ Bean (2000), King (2002).

for cutting the OCR again is slowing growth in New Zealand's main trading partners. This slowdown in global growth will have an adverse impact on demand for our exports, and is likely to reduce inflationary pressures" In December 2001, the RBA lowered its policy rate saying that it would ". . . support growth in domestic demand, at a time when international conditions are weak, and will be consistent with achieving the inflation target over the medium term." The Norges Bank, in December 2003, lowered rates and said that it "weighed the objective of bringing inflation back to target and stabilising inflation expectations on the one hand against the risk that output growth may gradually become too strong on the other."

In cases where the role of the output stabilization goals is less clear, central banks often cite output developments to explain what will happen to inflation or imply that output stabilization is conditional on also meeting the inflation target. For example, the Bank of Canada in May 2001 noted that lowering its policy rate "will support aggregate demand in the economy consistent with keeping inflation close to the Bank's inflation-control target of 2 per cent over the medium term." In the United Kingdom in August 2005, the MPC eased policy stating that ". . . in the Committee's view, the slackening in the pressure of demand on supply capacity should lead to some moderation in inflation . . . a decrease . . . in the repo rate . . . was necessary to keep CPI inflation on track to meet the 2% target in the medium term." The ECB lowered rates in August 2001, noting that ". . . there are clear signals of lower inflationary pressures from the demand side . . . over time, the expected decline in consumer price inflation, to which the strengthening of the exchange rate has contributed, should support the growth of domestic demand." Finally, the Swiss National Bank in December 2001 noted that "economic outlook has . . . continued to deteriorate around the globe. In Switzerland, there are no signs that price stability might be jeopardised in the medium term. This development makes it possible to reduce rates again."

6. Horizon at which inflation is brought back to the target

Another aspect of the trade-off faced by central banks with explicit numerical inflation objectives is at what horizon to bring inflation back to its target. A more distant horizon may allow for greater consideration of other policy goals, such as output stabilization. One implication of the evolution of many central banks into flexible inflation targeters is that inflation objectives are currently treated as medium-term targets.

At least in a conceptual sense, all central banks characterize the horizon at which they hope to meet their inflation goals. As Table 1 shows, however, some of these characterizations are not specific. In New Zealand, the 2002 Price Target Agreement stated that the target should be met "on average over the medium term." Previously the horizon had been taken to be one year ahead. Some banks who adopted inflation objectives later, such as the Reserve Bank of

Australia and the European Central Bank, also adopted similar horizons at which to meet their objectives; the RBA says that it tries to hit its inflation objective “on average over the cycle.”

Other central banks stipulate a particular period over which they will try to bring inflation back to target. These specific intervals range from six to eight quarters at the Bank of Canada to three years at the Swiss National Bank, with the median interval at two years. In most cases, these periods are articulated solely by the central bank rather than stipulated by the government or as part of a joint agreement.

Recently a number of the central banks that specify a particular time frame have emphasized that their horizons may be nearer or more distant depending on the shocks hitting the economy and the need to meet other goals. In July 2004, the Norges Bank changed its target period from “about two years” to one-to-three years. In March 2005, the Riksbank pointed out that “Under very special circumstances, when inflation deviates substantially from target, there may be justification for allowing inflation to return to target beyond the normal two-year horizon.”¹⁷ Likewise, in November 2006 the Bank of Canada noted that “specific occasions may arise in which a somewhat shorter or longer time horizon might be appropriate.”¹⁸

For a couple of these banks, these shocks include, but are not limited to, the effects of movements in asset prices. The Bank of Canada further noted in its inflation target renewal that “. . . the longer-lasting nature of some shocks, such as large asset-price movements could, in some instances, suggest a longer horizon.” In September 2006, a Riskbank official said that concerns over the rate of increase in house prices played a role at the February 2006 policy meeting, when the committee tightened policy “despite the fact that the forecasted inflation path showed the rate as being at the lower edge of the target margin two years ahead, and low for the majority of the forecast period.”¹⁹

¹⁷ Sveriges Riksbank (2006).

¹⁸ Bank of Canada (2006)

¹⁹ Rosenberg (2006).

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Appendix 1: Recent Communications by Major Foreign Central Banks

The **RBNZ** tends to focus on inflation pressures with an occasional reference to the inflation target band in its statements explaining policy moves. For example, when increasing its official cash rate in October 2005, the Bank noted that “we see no prospect of easing in the foreseeable future if inflation is to be kept within the 1 per cent to 3 per cent target range on average over the medium term.” The Reserve Bank also talks about its inflation goal in its quarterly Monetary Policy Statements, which include its inflation forecast, and in press conferences. For instance, in August 2001, the RBNZ left its official cash rate unchanged, but at the release of the August monetary policy statement, Governor Brash said “reasonable estimates suggest that so far the ‘underlying trend in prices’ remains well within the target range and, on present assumptions, the CPI should track back to somewhere near the middle of our inflation target by mid next year.”

Recent statements by the **Bank of Canada** also focus on the inflation target. At its latest policy meeting on January 16, the Bank kept its target for the overnight rate at 4¼ percent and stated, “The Bank judges that at the end of 2006, the Canadian economy was operating at, or just above its production capacity [The outlook for CPI inflation is projected to] average just above 1 percent in the first half of 2007, returning to the 2 percent inflation target in early 2008. Core inflation should return to 2 percent in the first half of 2007 and remain there In line with the Bank’s outlook, the current level of the target for the overnight rate is judged, at this time, to be consistent with achieving the inflation target over the medium term.”

The **Bank of England** usually mentions where inflation stands relative to the 2 percent target and also provides some indication of the direction inflation is expected to go over the medium term in justifying its rate changes. For example, the latest rate hike on January 11, 2007 was accompanied by the following statement: “Sterling has risen and oil prices have fallen back. But the margin of spare capacity in the economy appears limited, adding to domestic pricing pressures. CPI inflation was 2.7% in November. It is likely that inflation will rise further above the target in the near term, but then fall back as energy and import price inflation abate the risks to inflation now appear more to the upside an increase in the Bank Rate . . . was necessary to bring CPI inflation back to the target in the medium term.” When it does not change rates, the MPC does not provide any explanation in its statement. However, a fuller description of the Committee’s thinking is provided in the minutes released around two weeks after the policy meeting. These descriptions usually make reference to the inflation target. For example, at the February meeting, some members argued that “a further rise in interest rates was required to return inflation to target.”

The **Riksbank**’s early press releases emphasized that inflation expectations were evolving favorably towards its price stability objective, indicated by periodic surveys or declines in long-

term interest rates. The inflation target itself was not mentioned in early press releases when the Riksbank was easing, but it was mentioned whenever policy rates were increased. Press releases at the time of the quarterly inflation reports always indicated whether inflation was expected to meet the target. Over time, policy statements have lengthened, providing more details on the Riksbank's outlook for growth, inflation, and interest rates. Like the BoE, the Riksbank also issues minutes that provide rationales for policy moves in terms of the inflation goal.

When the **RBA** changes its target for interest rates, its statements almost always mention the 2-to-3 percent target range. For example, on November 6, 2006, after deciding to increase policy rates, Governor Glenn Stevens announced, "The Board judged this to be an environment in which the risks of inflation exceeding 2-3 per cent over the medium term remained significant . . . the Board's judgement yesterday was that a somewhat more restrictive stance of monetary policy was required in order to moderate inflation over time, and thereby to secure sustainable growth." The RBA issues statements only when it changes rates.

Since October 2003, **Norges Bank** has released detailed statements explaining its decisions and its economic outlook. The most recent statement did not focus on the inflation target, chiefly because inflation has been undershooting it for some time, despite capacity and labor market pressures that convinced the Bank to hike rates in January 2007. Prior to October 2003, the Norges Bank issued statements that were relatively short and focused on the balance of risks to inflation. For example, in December 2001, Governor Gjedrem announced a rate cut and said that "according to Norges Bank's assessment, the probability that inflation two years ahead will be lower than 2½ percent is greater than the probability that it will be higher."

The **ECB** issues a short press release following each of the Governing Council's policy decisions and the President holds a press conference where he makes an introductory statement before taking questions. The statement summarizes the policy decision and the reasons underlying it, such as prospective economic growth, inflation and its risks, and money growth, as well as other topics. For many years, the euro-area inflation rate exceeded the ECB's objective of 2 percent, so the Governor needed to explain forces that were likely to bring inflation down.

The **SNB** also holds a press conference after some of its policy meetings, but it is unique in that it releases an inflation forecast with each meeting. These forecasts include a graph of the inflation forecast and the previous projection, as well as the reasons behind any rate change and a qualitative assessment of the future direction of monetary policy. However, the SNB usually does not make explicit reference to its numerical inflation objective.

During the period that the **Bank of Japan** maintained a policy of quantitative easing from March 2001 to March 2006, the Bank made reference to its attempt “to prevent a continuous decline in prices” or “to overcome deflation.” When the BoJ terminated quantitative easing in March, Governor Fukui laid out a new framework for the conduct of monetary policy, including clarifying Policy Board members’ understanding of price stability. On two occasions since then, when its target for the overnight call rate was raised 25 basis points last July and this February, the BoJ has made reference to this new framework in explaining its actions. The statements presented the change, the vote of each Policy Board member, the Policy Board’s outlook for economic activity, and an assessment of inflation. A much shorter press release is used when policy is unchanged and no explanation is provided.

Table 1: Features of Monetary Policy Frameworks with Explicit Numerical Inflation Objectives

	New Zealand	Canada	United Kingdom	Sweden	Australia	Norway	ECB	Switzerland	Japan
Date first issued	March 1990	February 1991	October 1992	January 1993	April 1993	March 2001	January 1999	January 2000	March 2001
Current target	1-3%	1-3% with 2% midpoint	2%	2% +/- 1%	2-3%	2.5%	Less than but close to 2%	Less than 2%	See "other features" below
Inflation measure	CPI	CPI; operational objective is CPI excl. 8 volatile components and indirect taxes	CPI (HICP)	CPI	CPI	CPI excluding energy and real taxes	Euro-area CPI (HICP)	CPI	CPI excluding fresh food
Policy horizon	Medium term	Usually 6 to 8 quarters	Informal 2-year	Usually 2 years	On average over the cycle	1 to 3 years	Medium term	3 years	Medium to long term
Other features	Governor could be dismissed if inflation performance inadequate; explicit escape clause	Persistent deviations outside range require additional discussion in Monetary Policy Report	Deviations of more than 1 percentage point lead to open letter to Chancellor	If outside range, additional communication required		Deviations of more than 1 percentage point to be explained in Bank's annual report			0-2% is consistent with the distribution of Board members' understanding of medium to long-term price stability.
Current target duration	Up to 2007	To end of 2011	1997 onward, reviewed yearly	1995 onward	Indefinite (with periodic review)	2001 onward	January 1999 onward	January 1999 onward	Reviewed yearly
Government involvement in establishment of ENPO	Originated with the government	Jointly announced by bank and government	Originated with the government. Later codified into law	Originated by bank. Later codified into law.	Initiated by bank. Later formalized by agreement between the Treasurer and the bank	Established by Royal Decree. Later modified slightly by bank	Originated by bank	Originated by bank	Originated by bank
Target set by	Minister of Finance	Minister of Finance & Governor of Bank of Canada	Chancellor of the Exchequer	Riksbank	Reserve Bank of Australia	Norges Bank & Government of Norway	European Central Bank	Swiss National Bank	Bank of Japan
Mandate	Price stability, avoiding unnecessary instability in output, interest rates and exchange rates	To promote the economic and financial welfare	Price stability and, subject to that, growth and employment	Price stability and financial stability	Stability of the currency, maintenance of full employment, economic prosperity and welfare	Maintain the domestic and exchange value of the krone, low and stable inflation, stable output and employment	Price stability and without prejudice to that, a high level of employment and sustainable growth	Price stability, while taking into account the economic situation	Price stability

Figure 1
Targeted Inflation and Foreign Central Banks' Inflation Objectives

