The Canadian Experience with Targets for Inflation Control

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L'auteur commente l'expérience vécue par le Canada dans la poursuite de cibles pour la maîtrise de l'inflation au cours des années 1990. Dans un premier temps, il dresse un sommaire de l'évolution des cibles en matière d'inflation par rapport à d'autres approches qui s'offrent aux responsables de la politique monétaire. Par la suite, il souligne les principaux avantages que présentent des cibles explicites pour la maîtrise de l'inflation — lesquels vont bien au-delà des avantages reconnus d'un bas taux d'inflation. Parmi ceux-ci, la transparence accrue et l'amélioration de l'obligation de rendre compte de sa gestion ainsi que l'amélioration du processus de prise de décision à la Banque sont plus particulièrement mis en lumière. L'auteur avance également que les cibles peuvent s'avérer utiles lorsqu'il faut affronter les chocs de demande ou d'offre, car elles permettent de réduire les fluctuations déstabilisatrices. Les principales critiques à l'encontre de cibles d'inflation établies à un bas niveau (qui concernent la rigidité des salaires, l'impossibilité d'avoir des taux d'intérêt négatifs et les craintes de déflation) sont également analysées. Quoiqu'il soit trop tôt pour tirer des conclusions définitives, l'auteur considère que la poursuite de cibles en matière d'inflation favorise la prise de décisions plus judicieuses dans la conduite de la politique économique, une meilleure tenue de l'économie à long terme, et un renforcement de l'obligation de rendre compte pour les banques centrales indépendantes.

This article reflects on Canada's experience with inflation targeting in the 1990s. The discussion opens with a synopsis of the evolution of inflation targets against a backdrop of other monetary policy approaches. The author then proceeds to outline the main advantages of explicit inflation targets — advantages that go beyond the well-known benefits of low inflation. Increased transparency and accountability, and an improvement in the Bank's internal decision making, are highlighted in particular. It is also argued that inflation targets provide a useful mechanism for dealing with demand and supply shocks in a way that reduces disruptive fluctuations. The major criticisms of targeting low rates of inflation (related to wage rigidity, a zero floor on nominal interest rates, and concerns about deflation) are also examined. Although it is too early for definitive conclusions, the author's view is that inflation targets lead to better policy decisions, better economic performance over time, and greater accountability for autonomous central banks.

It is an honour to have been asked by the School of Policy Studies to deliver the 1998 J. Douglas Gibson Lecture. As an economist who worked as a banker for most of his career, Douglas Gibson brought an interesting perspective to public policy issues, to the relationship between government and business, and to the contribution of outside economists to government policies. I noted with particular interest a comment by Gibson in his 1981 essay in honour of John Deutsch. He points out that few

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academic economists in Canada up to that time "appeared to appreciate the destructive influence of inflation on the economy and on society" (Gibson 1981). That comment provides a convenient link to my topic for this year's Gibson Lecture. What I propose to do is to reflect on Canada's experience using explicit targets aimed at low rates of inflation as the focus for conducting monetary policy.[1] But let me first set the scene by putting the inflation targets in the context of various approaches to monetary policy.

With the sharp rise in worldwide inflation in the 1970s, the costs of inflation became more and more evident. Consequently, central banks increasingly focused their attention on how to get inflation down and keep it down. One lesson that came out of this period was the importance of having some sort of "nominal anchor" to ensure that monetary policy does not lose sight of the objective of inflation control, given the long lags in the operation of monetary policy (see Bouey 1982).

The traditional nominal anchor for small countries has been a fixed exchange rate that links the currency of the small country to that of a larger trading partner that has been successful in controlling inflation. Among the larger countries, many central banks turned to monetary aggregates as an intermediate target for monetary policy around the mid-1970s as relatively high inflation became entrenched in the world economy. Subsequently, with inflation and inflation expectations persisting at uncomfortable levels in many countries during the 1980s, the policy innovation in the early 1990s was the introduction of explicit inflation-control targets in eight countries.[2]

The main factor that countries choosing to use explicit inflation-control targets have in common is a history of higher-than-average inflation. In some cases, they had previously used monetary aggregates and/or a fixed exchange rate without success or with only limited success. And, unlike countries with a history of relatively low inflation (such as the United States, Germany, and Japan), the history and consequent problems of policy credibility in inflation-targeting countries meant that they were unable to rely upon a general qualitative commitment to low inflation.

The key objectives of Canada's inflation targets, when they were originally announced in 1991, were to prevent inflation from accelerating in the short run in the face of the introduction of the new Goods and Services Tax (GST) and a sharp rise in oil prices and, in the longer run, to bring inflation down to a level consistent with price stability. Over time, the importance of other favourable characteristics of inflation targets as a permanent operating framework for monetary policy has become increasingly apparent to us at the Bank of Canada. The most notable of these characteristics are increased transparency, better accountability, improved internal decision making, and a mechanism for responding to demand and supply shocks that reduces potential fluctuations in output.

I would not argue that explicit inflation targets are the only way to achieve good macroeconomic results. Indeed, the worldwide reduction of inflation in the 1990s across countries with different frameworks for monetary policy clearly indicates that there are a number of ways to achieve low inflation. Rather, I will argue that explicit inflation targets bring a discipline to monetary policy that is helpful in providing a more stable and predictable environment for the economic decisions of businesses and individuals. Moreover, I believe that the benefits of the clear operating framework provided by such targets will make them increasingly attractive in democratic societies that demand accountable public institutions.

I begin this paper with a brief history of inflation targets in Canada and go on to an assessment of the performance of the Canadian economy during the period in which inflation targets have been in place. I then turn to a discussion of the favourable characteristics of inflation targets, over and above achieving a low rate of inflation. After examining the main criticisms of explicit targets for low inflation, I offer some concluding remarks about the contributions that the targets have made to the conduct of monetary policy in Canada over the last eight years.

A Brief History of Inflation Targets in Canada

In response to the persistence of high inflation during the 1970s, the Bank of Canada adopted a narrowly defined monetary aggregate (M1) as a target in 1975. When this aggregate became increasingly unreliable and turned out not to have been all that helpful in achieving the desired lessening of inflation pressures, it was eventually dropped as a target in 1982. Subsequently, the Bank embarked on a protracted empirical search for an alternative monetary aggregate target, but no aggregate was found that would be suitable as a formal target. Thus, from 1982 to 1991, monetary policy in Canada was carried out with price stability as the longer-term goal and inflation containment as the shorter-term goal, but without intermediate targets or a specified path to the longer-term objective.

In February 1991, explicit targets for reducing inflation were introduced through joint announcements by the Bank and the federal government.[3] These announcements confirmed price stability as the appropriate long-term objective for monetary policy in Canada and specified a target path to low inflation. The first guidepost was set for the end of 1992 at a target rate of 3 percent for the 12-month increase in the consumer price index (CPI). This was to be followed by a reduction to 2.5 percent for mid-1994 and to 2 percent by the end of 1995. These targets had a band of plus and minus one percentage point around them. The announcements specified that after 1995 there would be further reductions of inflation until price stability was achieved.

At the time the targets were announced, there was upward pressure on prices in Canada from two major shocks — the sharp rise in oil prices following the Iraqi invasion of Kuwait and the effect on the price level of replacing the existing federal sales tax at the manufacturers' level by the broader-based GST. These shocks had led the Bank and the government to be concerned about a deterioration of inflation expectations and the possibility of additional ongoing upward pressure on wages and prices. The fact that Canada had recently gone through a period of inflationary pressure induced by excess demand added to those concerns. By providing a clear indication of the downward path for inflation over the medium term, the key near-term aim of the targets was to help firms and individuals see beyond these price shocks to the underlying downward trend of inflation at which monetary policy was aiming, and to take this into account in their economic decision making.

In the longer term, the inflation-reduction targets were designed to make more concrete the commitment of the authorities to the goal of achieving and maintaining price stability. In addition, by providing information on the specific objectives to which the Bank's monetary policy actions would be directed, the targets were intended to make those actions more readily understandable to financial market participants and to the general public. In this way, the targets would provide a better basis than before for judging the performance of monetary policy.

In December 1993, on the occasion of the announcement of my appointment as governor, the Bank and the minister of finance issued a joint statement on the objectives of monetary policy. In this statement, the newly elected government and the Bank recommitted themselves to price stability as the goal of monetary policy. It was also agreed that the 1- to 3-percent target range for inflation would be extended through 1998, and that a decision on the definition of price stability would be postponed. There were two reasons for this extension. First, because it had been a long time since Canada had had low rates of inflation, it was felt that more experience in operating under such conditions would be helpful before a long-term objective was set. Second, since inflation had dropped rather dramatically and unexpectedly during 1991, it was unlikely that Canadians had completely adjusted to the improved inflation situation. More time was therefore needed to make that adjustment before announcing any further changes to the target.

In February 1998, the government and the Bank announced that the 1- to 3-percent target range would be extended again, this time to the end of 2001. This extension reflected the fact that the economy had not yet reached full capacity in the current cyclical upswing. It would, therefore, be helpful to have the economy demonstrate more fully its ability to perform well under conditions of low inflation before determining the appropriate long-run target consistent with price stability. The government and the Bank now plan to determine this long-run target before the end of 2001.

Inflation Targets and Economic Performance in Canada

What did we expect in the way of economic performance from the inflation targets? First, we expected a lower rate of inflation and reduced inflation expectations. Second, the achievement of a lower inflation rate and the commitment embodied in the targets to maintain that lower inflation rate were expected to result in lower interest rates. Third, with lower inflation, we anticipated that the economy would function more efficiently and without the sharp fluctuations caused by inflationary booms and subsequent recessions.[4]

What has the outcome been thus far?

Figure 1 shows the rate of inflation over the period of inflation targets. Following the initial announcement of the targets in February 1991 (when the 12-month rate of increase in the total CPI was at 6.8 percent), inflation fell rapidly. Indeed, for much of 1992 it was below the bottom of the target range. Since then, with the exception of a brief period in 1995, the trend of inflation has been in the lower half of the target range.

The speed of the decline in inflation during 1991 was surprising. It reflected a much more severe economic slowdown than either the Bank or most other forecasters had expected. In part, the depth of the 1990-91 recession was due to international factors, such as lower-than-expected growth in the United States and an unexpectedly sharp decline in raw materials prices. But in Canada, it also reflected the unwinding of distortions in asset prices and debt accumulations associated with the preceding period of inflationary pressures.

It is unlikely that the 1991 announcement of the path for inflation reduction had a significant immediate impact on the expectations of individuals, businesses, or financial market participants. On balance, I think that it is the low realized trend rate of inflation in Canada since 1992 that has been the major factor in shifting expectations of inflation downwards. But the targets have probably played a role in convincing the public and the markets that the Bank would persevere in its commitment to maintain inflation at the low rates that had been achieved. Moreover, there are some recent indications that the 2 percent mid-point of our target range is becoming an important anchor for current expectations and for long-range corporate planning.

If we examine interest rates and the growth of output and employment over the period of inflation targets, the first point to note is that the recovery from the 1990-91 recession was less vigorous than typical in the postwar period. The growth of domestic demand, in particular, was subdued until mid-1996 (see Figure 2). Moreover, the economic expansion in Canada was considerably less robust than that in the United States. While some observers have attributed the sluggishness of the recovery to the adoption of inflation targets and the associated conduct of monetary policy, this criticism overlooks the major restructuring that took place in Canada in both the private and public sectors over this period.[5] Whereas the United States had undergone a period of intense private sector restructuring starting in the mid-1980s, the corresponding Canadian restructuring did not take place until the first half of the 1990s. At about the same time, after two decades of continuous fiscal deficits and public sector debt accumulation in Canada, unprecedented corrective

FIGURE 1
Consumer Price Index in Canada, Monthly, Year-Over-Year Percentage Change

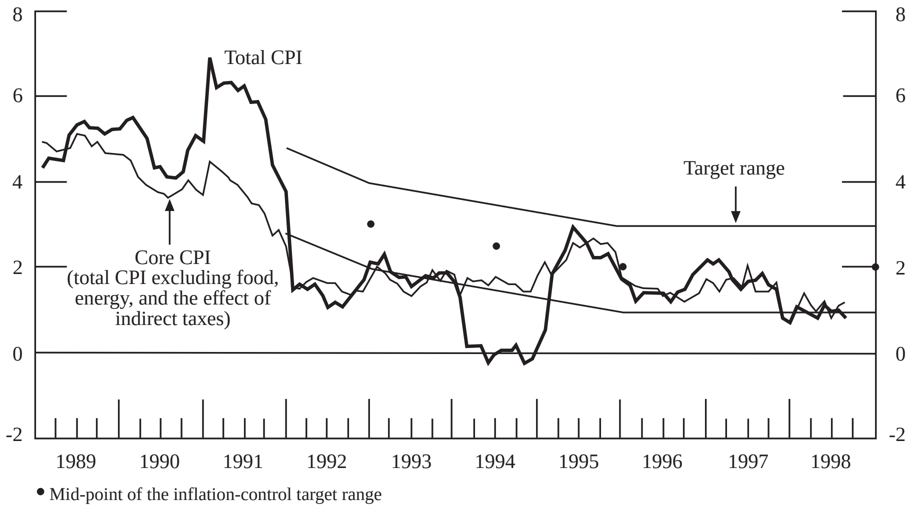
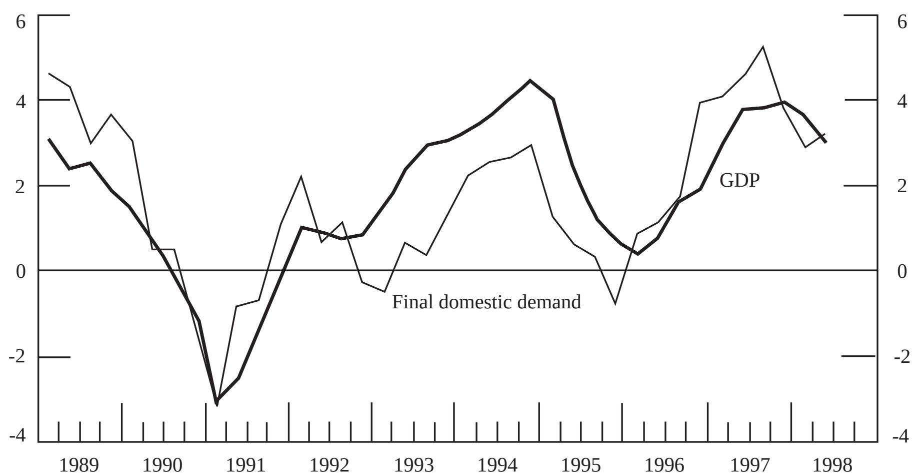


FIGURE 2
Output and Final Domestic Demand in Canada, Volume, Year-Over-Year Percentage Change



actions were required to put public finances onto a sounder path.

Both sets of actions were essential to move Canada toward a better-functioning economy. The short-run consequences, however, included a weak employment situation and an associated lack of consumer confidence. And these resulted in sluggish domestic demand and a weaker-than-expected recovery in the Canadian economy.

Monetary conditions were easing through much of this period.[6] However, for quite a long time the Bank was unable to provide as much monetary stimulus as it would have liked because of fiscal, political, and international developments that, at times, caused financial markets to be nervous and volatile. It was only after 1995, with improved credibility on the fiscal front and subsequent to the Quebec referendum campaign, that the Bank was able to achieve a durable reduction in short-term interest rates. As the credibility of both monetary and fiscal policy improved, Canadian interest rates across the maturity spectrum moved to levels below comparable interest rates in the United States. In response to easier monetary conditions, domestic demand in Canada recovered, with a strong expansion beginning in mid-1996 and continuing through 1997.

One of the main conclusions that I would draw from the Canadian experience of the 1990s is that, while low inflation is necessary for good economic performance, it is not sufficient by itself. While monetary policy was able to achieve a rate of inflation that was within the target range for most of the period, other factors also played an important role in determining interest rate movements and output and employment growth.

Does the important role played by non-monetary factors mean that the inflation targets and the low rate of inflation were not helpful? Not at all. The ability of businesses to undertake a major restructuring was greatly enhanced by the stable low-inflation environment. And while fiscal and political uncertainty resulted in appreciable financial market volatility, as well as vulnerability to external shocks in the period before 1996 (Clinton and Zelmer 1997), I believe that the situation would have been considerably worse without the anchor provided by low inflation and the inflation targets. And, in conjunction with improved fiscal policy, they have facilitated better economic performance in the more recent period and have allowed us to weather the current international financial problems with fewer difficulties than before. Targets should continue to provide a sound foundation for good economic performance and for coping with the international shocks that are bound to hit us from time to time.

Increased Monetary Policy Transparency and Accountability

When the government and the Bank agreed on the initial targets in 1991, the main concern was to lay out a path for the reduction of inflation on the way to price stability. Despite the emphasis that the Bank had for some years placed on price stability as the objective of monetary policy (see Bank of Canada 1987; and Crow 1988), the period over which the objective was to be achieved was a source of uncertainty among the public. Thus, one of the key benefits of the targets was expected to be increased transparency with respect to the objective of monetary policy, leading to a reduction of public and financial market uncertainty.

The announcement in 1991 also noted that the targets should provide a better basis for judging the performance of monetary policy. Criticisms of monetary policy had often implicitly assumed that the Bank should be pursuing policy objectives other than price stability. By setting out a clear objective, and with the commitment of the government to that objective, the Bank hoped that future public assessments of monetary policy performance would focus more clearly on its record of achieving price stability.

There is no question that explicit targets for inflation control make the objective of monetary policy more transparent and provide a better basis than before for holding the central bank accountable for its conduct of monetary policy. I have not tried to pull together evidence that, with a clearer objective, public commentary on monetary policy since 1991 has involved fairer assessments of the performance of the Bank of Canada. And it is difficult to demonstrate conclusively that, overall, financial and economic uncertainty in Canada have been less than they would have been without targets. Nonetheless, it is my qualitative assessment that those improvements have taken place.

And the targets have certainly had a major impact on the Bank itself.

With respect to transparency, we found that explicit targets provided a strong incentive that encouraged us to become more forthcoming about how we would operate to achieve those targets. As I have discussed elsewhere (Thiessen 1995), we have taken initiatives to explain more fully our assessment of economic developments and our outlook for output and inflation. We have clarified how we make judgements about the actions needed to achieve the inflation target, and how we operate in markets to implement those judgements.

Moreover, the Bank's senior staff now spends much more time than before on public explanations and discussions across the country about monetary policy and central bank operations.

All these initiatives were designed to make the implementation of monetary policy and the achievement of the targets more effective.

Explanations and discussions are also part of the process whereby the Bank accounts to the public for its actions. Accountability implies that the central bank must either achieve the target or explain what unanticipated events caused it to miss the target and what it is doing to rectify the situation. Thus, we have a strong incentive to ensure that the public is well informed about the circumstances that could affect our achievement of the objective.

It is not surprising that in some countries inflation targets and increased autonomy for the central bank have gone hand in hand. An autonomous central bank has traditionally fitted somewhat awkwardly in a democratic society (see Rasminsky 1966). However, once targets are set and the central bank is charged with achieving those targets, it is much more feasible for Parliament and the public to hold the managers of monetary policy to account for their performance.

In Canada, no new arrangements for central bank accountability have been put in place since 1991. But in fact the existing arrangements have adapted quite well to an inflation-targeting environment. The *Bank of Canada Act* gives the Bank's Board of Directors the responsibility for ensuring that the institution is well run.[7] This includes assessing the performance of the governor and of the other members of the Governing Council, who are responsible for managing the Bank.[8]

The inflation targets have made those performance assessments more straightforward. When it comes to monetary policy — the Bank's most important responsibility — there is now a clear measure of what constitutes successful performance.

The second part of the accountability arrangement for the Bank of Canada is the directive power given to the minister of finance under section 14 of the *Bank of Canada Act*. With the new practice of agreed targets between the Bank and the minister, the directive power, which has never been used, now seems even less likely to be used. Nonetheless, if there were a fundamental disagreement on the targets when they come up for renewal, the minister could impose his will via a directive. That would likely lead to the governor's resignation; and a new governor, who was prepared to accept the desired targets, would have to be chosen.[9]

As long as no directive is in force, the Bank must take full responsibility for its monetary policy actions. However, this directive power implies that the minister must also take a broad, ultimate responsibility because he has the power to change monetary policy. Quite evidently, this is a power to be used only in extreme circumstances. Nevertheless, this arrangement defines the nature of the Bank's relationship to the minister of finance in the area of monetary policy.

In today's world, the accountability of public institutions goes beyond traditional legislated arrangements. In democratic societies, the general public now demands much more information and an accounting of performance from public institutions. Here again, by establishing a clear performance objective, the inflation-control targets have made it easier for the Bank to account for its stewardship to Parliament and the general public.

Improved Internal Decision Making

The explicit target for policy and the associated increase in transparency and accountability of the Bank of Canada have also had an impact on our internal decision-making processes.

Other central banks that have adopted inflation targets have also noted the improvement in the process of internal decision making that has resulted (Haldane 1995). The improved decision making can be attributed largely to the focus on a clear objective and the consequent need to develop a robust framework that maximizes the likelihood of realizing that objective in the light of the long lags between monetary policy actions and their effects on inflation.

The inflation-targeting framework typically has a number of components — a procedure for projecting the future rate of inflation, a set of quantitative estimates of the relationships that link the central bank actions and the rate of inflation, and the development of information variables that provide early warning to the authorities that economic and financial events are, or are not, proceeding in line with the inflation outlook.

In Canada, the policy process works as follows. The Bank makes a projection of inflation one to two years ahead. This is based in large part on our assessment of international and domestic economic developments and their implications for the path of real output in the Canadian economy relative to potential output. In this framework, minimizing the difference between the projected rate of inflation six to eight quarters in the future and the target rate becomes the effective intermediate objective for monetary policy (Svensson 1997). A full projection is undertaken every quarter, reassessed mid-quarter, and carefully monitored in between. The idea is to re-examine the scenarios on which policy actions are based as new information becomes available. In this context, I would note that we are very aware of the uncertainty surrounding both the projection and the transmission mechanism that links our actions to demand and inflation.[10]

While it is still early to offer any definitive judgements, I would suggest that so far one of the most important results of the targets has been an increase in the internal discipline of the policy-making process. The Bank's commitment to the targets and the need to explain and justify any inability to meet the targets have resulted in a better-focused internal debate on the appropriate policy actions to take and has probably reduced the likelihood that decisions to take such actions will be put off.

The Response to Demand and Supply Shocks under Inflation Targeting

In addition to their positive effects on transparency, accountability, and decision making, the inflation targets also provide a mechanism that helps monetary policy to deal with demand and supply shocks in a way that reduces economic fluctuations.

If the inflation forecast suggested that aggregate demand was expanding at an unsustainable rate and would be pressing on capacity so that the trend of inflation would likely go through the top of the target range, the Bank would tighten monetary conditions to offset the demand and inflationary pressures. Conversely, if demand was weak relative to capacity and the trend of inflation looked likely to move below the bottom of the range, the Bank would ease monetary conditions, thereby providing stimulus to the economy and reducing the downward pressure on inflation. By operating in this way, the Bank effectively reduces the magnitude of the fluctuations in real output and income that are inherent in a market-based economy. Because of this economic-stabilizer characteristic of targets in response to demand shocks, and the helpful role of the top and bottom of the range in communicating the way in which the Bank responds to such shocks, the Bank has recently been giving more emphasis to the target range than was the case initially.

Moreover, to the extent that explicit targets and their successful achievement give Canadian monetary policy more credibility, the Bank of Canada has more potential room for manoeuvre in dealing with demand shocks. For example, following an upward demand shock, policy credibility can give the Bank more room to see how large and how long-lived the shock is likely to be and how much pressure it seems to be putting on the economy's capacity to produce. The Bank will have this greater latitude only insofar as inflation expectations are more firmly anchored by the targets and are not dislodged by a delay in responding to a shock.[11]

Inflation targets have also turned out to be helpful in dealing with certain types of supply shocks. For temporary shocks to food and energy prices, our operational focus on a core rate of inflation (the CPI excluding food, energy, and the effect of changes in indirect taxes) makes it clear that the focus of monetary policy is on the trend of inflation and not on such temporary fluctuations.

Removing indirect taxes from our core measure of inflation implies that the Bank will accommodate first-round effects of tax changes on the price level. However, we have also made it clear that we would not accommodate any ongoing inflation effects that might come from attempts to adjust salaries and wages to seek compensation for tax increases.

Another type of supply shock that may become relevant in the period ahead is the possibility that the widespread restructuring that we have seen in the Canadian economy, along with new technology and high levels of business investment, will lead to growth rates and levels of potential output higher than currently estimated on the basis of past experience. In such an event, the economy will be able to expand faster and operate at higher levels of output than previously thought without generating inflation pressures.

A credible inflation target can help the Bank probe to find out where the limits of potential output really are. Consider a case where inflation remains under downward pressure even as the economy operates at levels of activity that the Bank believes to be consistent with full capacity. The risk of having inflation go below the target, and the accountability issues that this would raise, should ensure that the Bank will not make persistent errors in underestimating potential output (Thiessen 1997).

This operational framework should help to make clear to Canadians that a monetary policy focused on inflation targets does not ignore fluctuations in employment and output, or result in a persistently underperforming economy.

Some Criticisms of Targeting on Low Inflation

Let me now turn to the main criticisms that have been levelled at the Bank's targets for low inflation. They are: the possibility of downward rigidity in nominal wages; the floor of zero on nominal interest rates; and a concern about deflation. You will note that none of these criticisms is directed at inflation targeting as such, but at the choice of a target for inflation control that is very low.

• *Wage rigidity*

Are wages rigid to the degree that they would be slow to decline even in the face of slack in the labour market? And what are the implications of such a situation for the working of the economy and for monetary policy? In other words, is some level of inflation needed to "grease the wheels" of the economy and eliminate the potential effect of such rigidity? (See Fortin 1996; and Akerlof *et al.* 1996).

The evidence thus far, although still fragmentary, suggests that wages can and do decline (see Crawford and Harrison 1997). It is also worth emphasizing that with positive productivity growth, the average wage will normally rise over time even in an environment of stable prices. In such circumstances, unchanged nominal wages will enable a decline in unit labour costs equal to the rate of productivity growth, if such a decline is needed.

Furthermore, the resistance to downward adjustments of nominal wages that built up during the period of high inflation is likely to lessen as the public becomes accustomed to low inflation. Given that the behaviour of nominal wages adjusted to the period of high inflation starting in the 1970s, I see no reason why it will not adjust equally to the current period of low inflation. Indeed, there is now some evidence, in Canada and in other low-inflation countries, of an increase in the relative importance of variable pay schemes (bonuses, etc.) as opposed to increases in base wage rates (Crawford and Harrison 1997). If sustained, this development would help to increase wage flexibility.

As I have said in the past, I have a great deal of difficulty with the idea that wage earners in Canada are subject to a permanent money illusion that can, and should, be exploited by the monetary authority (see Thiessen 1996-97).

• *How can monetary policy be eased when inflation is very low and interest rates are close to zero?*

One of the criticisms of the goal of price stability, or a very low inflation rate, is that it rules out using negative real interest rates (i.e., interest rates lower than the rate of inflation) to provide stimulus to the economy should this become necessary. This line of argument implies that one should avoid targeting a very low rate of inflation because of the added flexibility that the possibility of having negative real interest rates gives to policymakers at a time of economic weakness (Summers 1991, pp. 627-28; Konieczny 1993, pp. 7-11; Black *et al.* 1997, pp. 320-25).

In assessing this criticism, it is important to remember that the achievement of price stability is likely to lead to a lessening in the amplitude of business cycle fluctuations. In the postwar period, deep recessions (of the sort that might, in extreme cases, call for negative real rates) have typically been preceded by periods of strong inflation pressures. These pressures resulted in significant economic distortions, which, in turn, affected the depth of the subsequent downturn. In the absence of such inflationary distortions, the downturns are likely to be much milder. Hence, there is less likelihood that a period of negative real interest rates would ever be called for.

Moreover, while nominal short-term interest rates cannot be less than zero, it is worth underlining that a near-zero nominal rate will still imply a real interest rate that is appreciably below its equilibrium value and will provide considerable stimulus to the economy.

Finally, in a small open economy with a flexible exchange rate regime, monetary conditions can become easier as a result of both interest rate and exchange rate movements. Even if there were only limited easing possible via the interest rate, there could still be a sufficient adjustment of monetary conditions to support a recovery and avoid having inflation persistently below the target range.

• *Is there a "deflation" problem?*
Some critics have suggested that targeting a low inflation rate, such as the present 1- to 3-percent range, raises the potential problem that a negative shock could readily push Canada into deflation (Bernanke and Mishkin 1997, pp. 17-18).

The first point to clarify is that what is relevant here is a decline in the general level of prices of goods and services, not in asset prices as some people seem to think. Furthermore, the use of the term "deflation" to describe a small decrease in prices for a short period of time, rather than a period of sustained price declines, can be very misleading. In Canada, the term deflation is associated in the public mind with the depression of the 1930s, when prices fell more than 20 percent over a four-year period.

The concerns about persistent deflation are that households will decide to defer consumption expenditures in the expectation that prices will be significantly lower in the future than at present and that the economy will enter into a debt-deflation spiral. Such responses are highly unlikely in the case of small price declines over short periods of time. The fact that under inflation targeting the authorities are committed to bringing the rate of change in prices back inside the target range would reduce even further the likelihood that deflationary expectations would take hold in such circumstances.

I would contend that inflation and deflation are equally to be avoided. Both imply increased uncertainty for economic agents, and both have negative implications for economic performance. That is why the Bank treats the risk of inflation moving above the top or below the bottom of the range with equal concern.

Concluding Remarks

It is too early to be able to draw very strong conclusions about the impact of inflation targets on actual economic performance in Canada. We really do require a longer period of time for targets to demonstrate their ability to deal successfully with the peak of an economic upturn without the trend of inflation moving persistently outside the target range.

Nonetheless, some conclusions can be drawn at this point. In Canada, inflation has remained within the target range for most of the period in which targets have been set. Because of this, the outlook for inflation has, in recent years, been more stable and predictable than at any time since the 1960s. And, consequently, most nominal interest rates have been lower than at any time since the 1960s.

It would appear that business investment in Canada has been encouraged by the low interest rates and stable inflation outlook. Among individuals, stable inflation has encouraged both savers and borrowers to move further out along the maturity curve. This provides greater security for these individuals — a benefit that is particularly important for those who are not expert in, or do not wish to devote a great deal of time and energy to, financial matters.

A common criticism of inflation targets in Canada is that the United States has managed to achieve better output and employment performance since 1991, with an inflation rate that is currently only one percentage point higher than in Canada. However, as I have argued in this paper, there have been a number of factors at work that account for differences in economic performance between Canada and the United States, of which the most important probably were fiscal policy and the resulting higher public debt levels in Canada.

I would add that monetary policy credibility has been less of a problem in the United States than in Canada. To an important extent, this reflects the somewhat lower average US inflation rate from the early 1970s to the beginning of the 1990s. It also reflects the fact that the US dollar is the major international reserve currency, and for that reason there is strong ongoing demand to hold US dollar-denominated assets that does not exist for Canadian-dollar assets. In these circumstances, the commitment provided by inflation-control targets will be far more useful in attracting and holding investors to a relatively small, open economy like Canada's than to the United States.

However, I would argue that the transparency and accountability of monetary policy and the resulting discipline on central bank decision making that the targets encourage would be good for any country. And the greater predictability of the inflation outlook under a targeting regime should contribute to good long-term economic performance everywhere. Moreover, the automatic-stabilizer feature of targets should reassure those who worry that the central bank is overly concerned about inflation to the exclusion of the real economy.

Finally, I would argue that transparency and accountability give autonomous central banks legitimacy in a democratic society. Since I am persuaded that central bank autonomy provides the strongest guarantee of having a low-inflation monetary policy over time, I believe that it is important to ensure that such autonomy remains acceptable in democratic societies. Only with explicit performance targets will accountability arrangements be truly effective.

Inflation-control targets are by no means a miracle solution for monetary policy. But I believe that they provide a framework that leads to better policy decisions, better economic performance over time, and a more accountable, and therefore more sustainable, position for autonomous central banks.

Notes

[1]Broad assessments of the experience to date with inflation targeting in industrial countries can be found in Almeida and Goodhart (1998) and Bernanke *et al.* (1998). Individual country experiences can be found in Leiderman and Svensson (1995). For an assessment of the potential advantages and disadvantages of inflation targeting in developing countries, see Masson *et al.* (1997).

[2]New Zealand, Canada, the United Kingdom, Sweden, Finland, Australia, Israel, and Spain adopted inflation targets in the first half of the 1990s.

[3]The government's announcement came as part of its annual budget, while the Bank issued a press release and a background note setting out practical details regarding the operation of the targets. A discussion of some of the practical issues surrounding the operational use of the targets can be found in Freedman (1995).

[4]See Bank of Canada (1991) on the benefits of price stability.

[5]This critique of Bank policy can be found in Fortin (1996). A detailed response can be found in Freedman and Macklem (1998).

[6]The concept of monetary conditions includes movements in short-term interest rates and in the exchange rate, the two channels through which monetary policy operates. See Freedman (1994) and Thiessen (1995).

[7]The directors of the Bank are appointed by the government for three-year terms. By tradition, there are two directors from Ontario, two from Quebec, and one from each of the other provinces.

[8]The Governing Council is composed of the governor, the senior deputy governor, and the four deputy governors.

[9]In addition, if the minister decided that the actions that the Bank was taking to achieve the agreed targets were inappropriate, he could use the directive power. Once again, this would be an expression of non-confidence, which would probably lead to the governor's resignation and replacement.

[10]For a detailed discussion of the Canadian framework for making policy, see Duguay and Poloz (1994) or Longworth and Freedman (1995). See Haldane (1995) for descriptions of the policy frameworks of those countries using inflation targeting as the basis of their policy. For a discussion of the uncertainty surrounding the transmission mechanism, see Thiessen (1995).

[11]See Freedman (1996). The ability of the US monetary authorities to adopt a wait-and-see position in response to shocks in recent years is closely related to the very high degree of credibility that the Federal Reserve has achieved.

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