BANK OF CANADA

Monetary Policy Report

– May 1995 –

This year is the sixtieth anniversary of the Bank of Canada, which commenced operations on 11 March 1935. To mark the occasion, our cover features Canada's first silver dollar, struck in 1935 and featuring the evocative design of sculptor Emanuel Hahn.

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1. Introduction

This is the first in a series of semi-annual reports by the Bank of Canada on Canadian monetary policy.

Reports on monetary policy will appear every six months, in May and November.

The report reflects the framework used by the Bank in its conduct of policy. This framework includes: (i) a clear policy objective, (ii) a medium-term perspective (given the long lags for the full impact of monetary policy actions on the economy) and (iii) a recognition that monetary policy works through both interest rates and the exchange rate.

The ultimate objective of Canadian monetary policy is to promote good overall economic performance. Monetary policy can contribute to this goal by preserving confidence in the value of money through price stability. In other words, price stability is a means to an end, not an end in itself. The benefits of stable prices – or the costs that inflation imposes on Canadians – are discussed in detail in an appendix to this report.

Since 1991, the Bank has been committed to specific inflation-control targets along a path to price stability, and this commitment has begun to bear fruit.

The goal of monetary policy is to promote good economic performance through price stability.

The decline of underlying inflation to rates between 1 1/2 and 2 per cent during the last three years has been a key factor behind Canada's improved economic performance. The task ahead for monetary policy is to encourage sustained expansion at levels of activity that do not exceed the capacity of the economy to produce goods and services.

This means that as the remaining slack in the economy is absorbed, the Bank must ensure that monetary conditions (i.e., the combined influence of interest rates and the exchange rate on aggregate demand) are sufficiently tight to guard against a re-emergence of inflationary pressures. If spending levels were allowed to expand beyond the economy's production capabilities, inflationary pressures would mount, and the prospects for steady and sustained expansion would be cut short.

2. Inflation-Control Targets

The Bank is committed to achieving specific inflation-control targets.

In February 1991 the government and the Bank of Canada set out a path for inflation reduction. The goal was to gradually reduce inflation (as measured by the consumer price index or CPI) to the midpoint of a band of 1 to 3 per cent by the end of 1995. In December 1993, the government and the Bank agreed to extend the targets to the end of 1998 with the objective of continuing to hold inflation inside the band of 1 to 3 per cent, with a midpoint of 2 per cent. It was also agreed that a decision will be made by 1998 on a target range for the CPI that would be consistent with price stability.

The inflation-control target for year-end 1995 is 1% to 3%.

This report includes information received to 21 April 1995.

The targets make Bank actions clearer and the institution more accountable.

The inflation-control targets provide information on the specific objectives to which the monetary policy actions of the Bank of Canada will be directed over the medium term. This information should make the Bank's actions more readily understandable to the general public and to financial market participants. As well, the targets provide a better basis for judging the performance of the Bank of Canada, thereby improving its accountability.

The consumer price index is the basis for the targets. As the principal measure of the prices of goods and services purchased by consumers, it is the most relevant estimate of inflation for most Canadians. The CPI also has a number of practical advantages: it is available monthly, it is of high quality, it is published without long delays, and it is, for all practical purposes, never revised.

The targets relate to CPI inflation...

...but the Bank concentrates on the core CPI.

Although the targets are specified in terms of the total CPI, the Bank of Canada uses as a core measure the CPI excluding food, energy and the effects of indirect taxes. This is because there is a good deal of movement in the overall CPI caused by short-lived fluctuations in the prices of food and energy as well as by changes in indirect taxes. However, over longer periods of time the two measures tend to move in a similar fashion. Hence, achieving the target inflation path for the core CPI should in most cases bring about a similar path for the total CPI. In the event of persistent differences in the trends of the two measures, the Bank would adjust its desired path for the core CPI so that the total CPI would come within the target band.

Monetary policy actions work slowly, with the effects spread over one to two years. In meeting its inflation-control targets, the Bank of Canada must therefore conduct policy with a medium-term view to the future.

3. Recent Developments in Inflation

Judgments about what policy actions are needed to achieve the targets require regular reconsideration.

While the decision to focus monetary policy on price stability is fundamental, and therefore long-term, judgments about what policy actions should be taken require regular reconsideration. These judgments include an assessment of the economic factors affecting inflation, especially the strength of aggregate demand relative to aggregate supply. However, two other points need to be stressed before these factors are examined.

First, in analysing aggregate measures of inflation it is important to distinguish between movements in the general level of prices and movements in relative prices. Inflation exists when generalized increases in the prices of goods and services persist over time. Price stability means just the opposite – over time there should be no persistent increase in the average price paid for goods and services.[1]

1. This leaves aside the issue of measurement biases in an index of inflation. The CPI, for example, is susceptible to biases caused by the fixed composition of the CPI basket, the exclusion of new goods from the current basket, the changing quality of products and shifts in market shares between retail outlets with differing price strategies. However, estimates based on research at the Bank put the total bias of the CPI at something less than 0.5 per cent per year. See Allan Crawford, "Measurement biases in the Canadian CPI: A technical note," *Bank of Canada Review* (summer 1993).

Thus, both inflation and price stability are identified in terms of what is happening to the general, or average, level of prices. This does not mean that prices of individual items will not change. In both situations – generalized inflation or price stability – some prices go up relative to other prices and some go down. It is these relative movements in individual prices that signal the need to move resources into or out of production.[2]

Second, given the numerous factors and the lags involved in the inflation process, it is important to analyse more than one indicator of price change. In addition to analysing movements of the CPI, attention should be given to aggregate measures of producer prices. Prices that Canadian consumers pay and prices that Canadian producers receive can differ because not all Canadian-produced goods are consumed in Canada, and many goods consumed in Canada are produced elsewhere. Exchange rate movements and changes in indirect taxes can also affect aggregate consumer and producer price measures differently.

Inflation and the target band

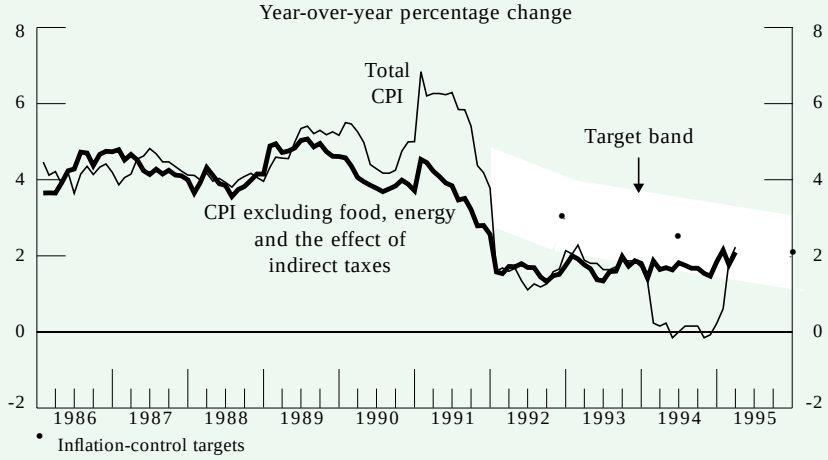
Inflation, as measured by the 12-month rate of increase in the core CPI, has been consistently in the lower part of the inflation-control band since early 1993. As of March 1995, core inflation was running at an annual rate of 2.1 per cent. The target band falls gradually from a range of 1 1/2 to 3 1/2 per cent in mid-1994 to 1 to 3 per cent at the end of 1995 (Chart 1).

Core inflation has been consistently within the Bank's inflation-control targets since early 1993.

Chart 1

Consumer Price Index

Year-over-year percentage change



While core inflation was relatively steady over the past year or so, the total CPI jumped sharply in February 1995 to 1.8 per cent, from close to zero over the previous twelve months. The difference between core

2. One of the benefits of a stable price environment discussed in the appendix is that relative price movements become more clearly identifiable because they do not become confused with a general increase in prices.

inflation and the total CPI in 1994 reflected the reduction of federal and provincial tobacco taxes early in the year. These tax cuts lowered the level of the total CPI by an estimated 1.3 per cent. The effect on the rate of inflation disappeared in February 1995. In addition, a partial reversal of these earlier cuts just prior to the February federal budget and higher gasoline taxes announced in the budget are estimated to have raised the level of the CPI by almost 0.2 per cent.

Because of the one-time nature of these indirect tax effects, the Bank has not had to react in terms of its monetary policy operations. If there had been evidence that these changes had affected underlying, or core, inflation, the Bank would have considered it necessary to respond.

For the balance of 1995, it appears that the year-over-year increase in the total CPI is likely to be somewhat higher than the core CPI because of higher food and energy prices. In March, the 12-month rate of increase in the total CPI was 2.2 per cent, compared with the core rate of inflation as noted above of 2.1 per cent.

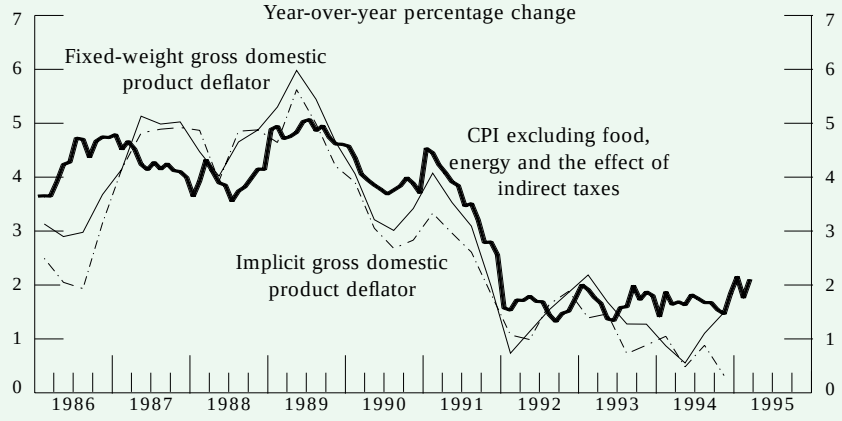
The Bank looks at other measures of inflation, in addition to the CPI.

The CPI is the most important measure of inflation, but other broad measures of inflation also indicate that inflation has remained low. The rate of increase of the gross domestic product (GDP) deflator averaged 0.3 per cent during 1994. The fixed-weight GDP deflator, which is another useful measure of underlying inflation, rose 1.5 per cent over the past year (Chart 2).

Chart 2

Broad Inflation Measures

Year-over-year percentage change



Factors at work on inflation

Inflation expectations have declined in line with progress made towards price stability.

The most important factors affecting inflation in the last year have been the excess capacity in product markets and slack in the labour market. As well, inflation expectations have diminished in response to the significant progress made towards price stability. At the same time, certain categories of price movements have had a significant effect on aggregate consumer and producer price measures. The two most important factors placing upward pressure on aggregate inflation measures have been commodity price increases and the effects on prices of the past depreciation of the Canadian dollar. There have also been declines in individual prices that have exerted downward pressure on aggregate measures of inflation. These have been most notable in the retail sector (as a result of heightened competition) and in computer prices.

i) Aggregate demand and supply

Exports led economic expansion in 1994...

The Canadian economy was considerably more buoyant during 1994 than had been expected at the start of the year, expanding by 5.6 per cent. Exports, particularly of manufactured goods, led the expansion, which was more broadly based than in the previous year, as increased capacity utilization led to more investment and strong employment gains. As well, higher commodity prices brought the resource sector back to pre-recession levels of activity. The associated increase in full-time jobs led to strong growth in consumption in the second half of the year, but in recent months the effects of higher interest rates have become apparent in reduced sales of homes and motor vehicles.

...an expansion that was more buoyant than expected.

With consumers spending less on big-ticket items, the pace of economic activity appears to have slowed in early 1995 compared with the second half of last year. However, indicators of exports, imports, investment, and manufacturing shipments and orders point to continued solid expansion. Based on the available information, and factoring in the impact of the rail strike, it appears that total output expanded by around 3 per cent in the first quarter.

Excess capacity remains in the Canadian economy and is a source of downward pressure on inflation.

Despite stronger activity during the past year, the Bank estimates that the Canadian economy still had excess capacity going into 1995, amounting to an output gap of about 2 1/2 per cent in the fourth quarter of 1994, down from 5 per cent a year earlier (Technical Box 1 and Chart 3).

Technical Box 1

Estimation of Potential Output

The level of potential output is unobservable. Traditional estimates either (i) choose a base period in which the economy was believed to be operating at capacity and assume that the level of potential output grew at a constant rate from then on, or (ii) assume a constant rate for the non-accelerating-inflation rate of unemployment (NAIRU) and convert the associated labour market gap into a measure of output. These measures provide useful benchmarks, but Canada's economic history suggests that they tend to produce cumulative forecast errors of inflation.

The Bank's current approach to estimating potential output focusses on estimating the trends in the average product of labour and in the supply of labour, and combining them to generate trend output. The approach begins with a technique used to measure trends called the Hodrick-Prescott filter. This filter is applied to the data, but the estimates of the trends are also adjusted based on certain labour market relationships. For example, rising inflation is associated with excess demand in labour markets, so the statistical procedure weights the data on employment in a manner that increases the likelihood of having trend labour supply below actual employment during periods of rising inflation and above it during periods of declining inflation. Other elements of economic structure are incorporated into the filter process, including an equation for unemployment that estimates a NAIRU on structural variables, a long-run relationship between real wages and the level of productivity, and Okun's law relating unemployment to output.

The resulting estimates of potential output are affected at the margin by cycles in actual output. In effect, the approach attributes some variability in the economy to supply-side disturbances and some to the demand side, unlike more traditional methods. As a result, estimates of the gap between actual and potential output for the recent period tend to be somewhat smaller than those using more traditional approaches. This method also produces a smaller output gap because it incorporates a judgment that the NAIRU has risen somewhat since 1990, mainly because of a substantial rise in payroll taxation.

This estimate of the output gap, which incorporates a wide diversity of information, explains the path of inflation reasonably well. It is expected that the methodology will be refined as additional elements of economic structure are added to the filter process.

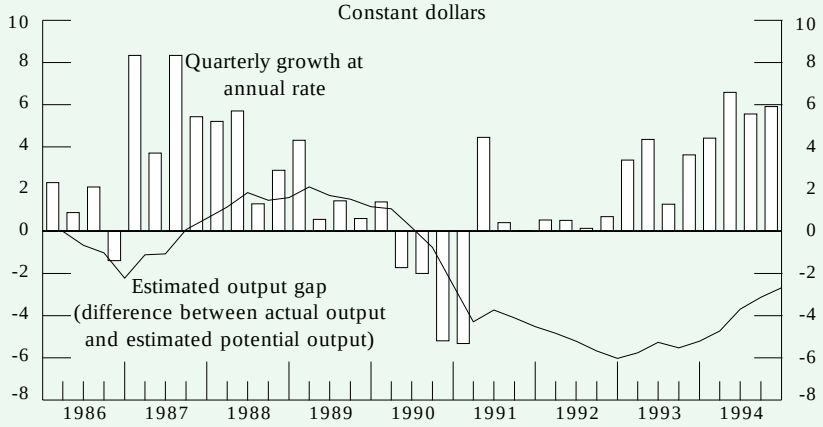
To project forward estimates of potential output, Bank staff develop a projection of trend labour supply based on an analysis of population growth, labour force participation and structural effects on the NAIRU. Trend total factor productivity is projected, taking account of likely cyclical effects and an assumed gradual convergence of productivity levels between Canada and the United States. The capital stock is a function of projected investment.

The Bank's approach incorporates more information than other methods. Still, the uncertainty associated with these measures is large – at least plus or minus 2 percentage points – implying that considerable care must be taken in interpreting them for policy purposes.

Chart 3

Gross Domestic Product

Constant dollars



ii) Exchange rate and commodity prices

The effect of the depreciation of the Canadian dollar on prices is potentially large. With the import content of the CPI estimated at about 20 per cent, the decline in the Canadian dollar over the past three years has had a significant impact. This effect may have contributed as much as 1 percentage point to the rise in the CPI during the past year.

The clearest example of the exchange rate effect can be seen in motor vehicles. However, it appears that prices of a number of other imported, or import-competing, consumer goods have only partially reflected the effects of depreciation. In most of these cases, increased competition in the retail and manufacturing sectors has resulted in downward pressure on prices (Technical Box 2).

A depreciating dollar and higher commodity prices have put upward pressure on aggregate inflation.

World commodity prices (quoted in U.S. dollars) have risen sharply in the past year. For Canadians, who are both major producers and users of raw materials, these price increases have been felt in a number of different ways.

The rise in commodity prices has been widespread across products (Chart 4). For Canadian producers the increases have been most pronounced in industrial materials. These prices, which had fallen to very low levels during 1991-92, rebounded sharply as the recovery in the world economy gathered momentum. Examples of large U.S. dollar price rises during 1994 include pulp (69 per cent), newsprint (19 per cent), and base metals like nickel (60 per cent), copper (67 per cent) and aluminum (70 per cent). The rise in the Canadian dollar prices received by Canadian commodity producers has been magnified by the depreciation of the Canadian dollar and has been reflected in the marked 9 per cent rise over the past year in the aggregate industrial product price index (Chart 5) as well as in the sharp rise in aggregate export prices.

Technical Box 2

Exchange Rate Movements and Consumer Prices

Ultimately, the effect of exchange rate movements on the aggregate price level depends on the policy of the monetary authorities and on the inflation expectations of private agents. In the first instance, however, one can usually observe the direct effects of exchange rate changes on import prices in the various categories of the CPI.

A rough calculation of the likely first-round effects of an exchange rate depreciation on the CPI may be obtained by taking the import share of the total index, which is about 20 per cent, and multiplying that by the total amount of depreciation. The actual relationship takes place gradually over time, however, making it difficult to isolate exchange rate effects with any precision. To get some idea of whether the typical amount of pass-through is occurring, one can look at the behaviour of various components of the CPI that have a relatively high import content.

The table below lists the components that make up about 85 per cent of the import content of the CPI excluding food and energy. In each case, the estimated import share of the category is applied to the total amount of exchange rate depreciation during 1992-94 (approximately 20 per cent) to calculate a rough expectation of the total exchange rate pass-through effect. This is compared with the actual amounts by which the component price indexes have changed over the same period. There are of course many other factors at work in the inflation process, including changes in foreign prices, trade liberalization, technological change and demand/supply conditions, so a direct correspondence cannot be expected to emerge between the two series. Nevertheless, wide discrepancies might contain useful information.

Potential Exchange Rate Pass-Through Effects

Cumulative percentage change, 1992-94

	Import share	Calculated effect	Actual price change
Motor vehicles	80.7	16.2	15.9
Furniture	29.6	5.9	3.3
Clothing	38.3	7.7	2.0
Household appliances	82.7	16.6	0.6
Reading material	61.5	12.4	-2.4
Home entertainment equipment	82.7	16.6	-5.4

These data suggest that circumstances may have been working to offset exchange rate pass-through in some sectors of the economy. It is difficult to determine whether this represents a postponement of price increases, in which case some catch-up might occur in the future as circumstances evolve, or a more permanent offset.

Chart 4

Bank of Canada Commodity Price Index

1982-90 = 100

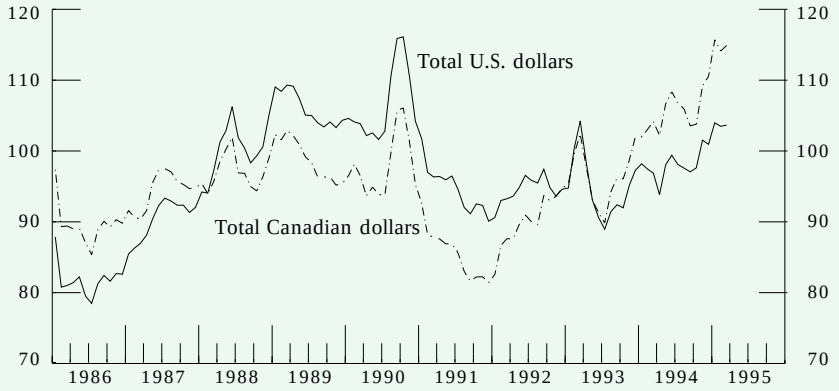
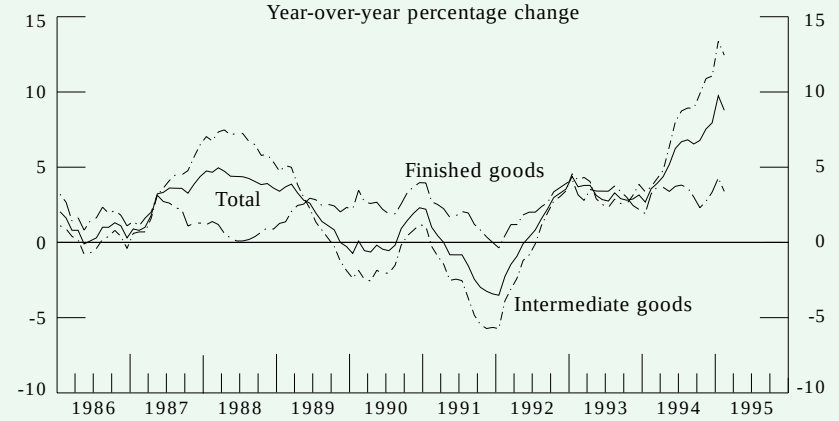


Chart 5

Industrial Product Price Index

Year-over-year percentage change



iii) Cost control and other factors

Wages have risen only 1% to 2% over the past year...

For domestic producers, these commodity price increases represent a significant rise in costs. However, economy-wide there have been major offsetting factors working to contain total costs and thus aggregate prices.

Wages, the largest component of total costs, have risen very moderately. Overall wage increases have fluctuated between 1 and 2 per cent during most of the past year. New wage settlements have been running just above 1 per cent in the private sector and zero to negative in the public sector.

...and productivity has increased.

Another important factor in overall cost control has been productivity gains. Since 1990 there has been considerable investment in new technology in Canada. This restructuring effort resulted from a combination of events, including a major deterioration in Canadian competitiveness

during 1987-90, increased global competition and the move to a low-inflation environment. The returns to restructuring are now showing up in the aggregate productivity data, although it is still too early to determine the extent to which recent productivity growth exceeds that of a normal economic recovery.

The result has been lower unit labour costs and increased profits.

The combination of rising productivity and moderate wage growth has led to steady declines in unit labour costs for more than a year (Chart 6). Profits have risen sharply, particularly in the resource and manufacturing sectors. As a result, the gap between the level of real wages and productivity that opened up in the early 1990s – a key factor in continuing efforts to hold labour costs down – has begun to close (Chart 7).

Chart 6

Unit Labour Costs and Labour Productivity

Year-over-year percentage change

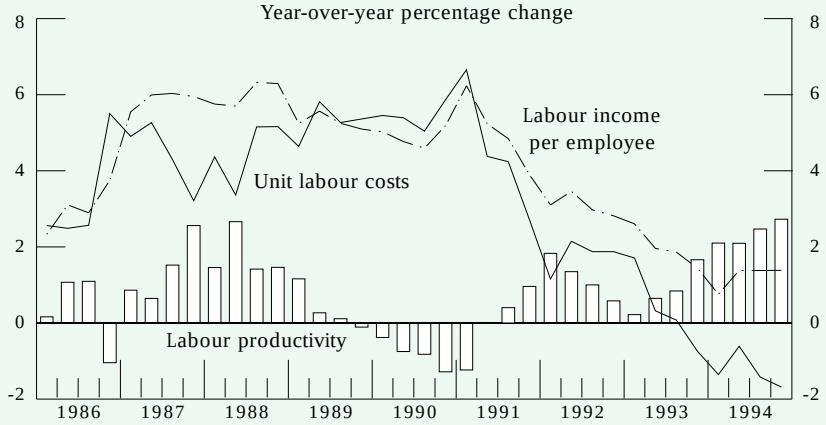
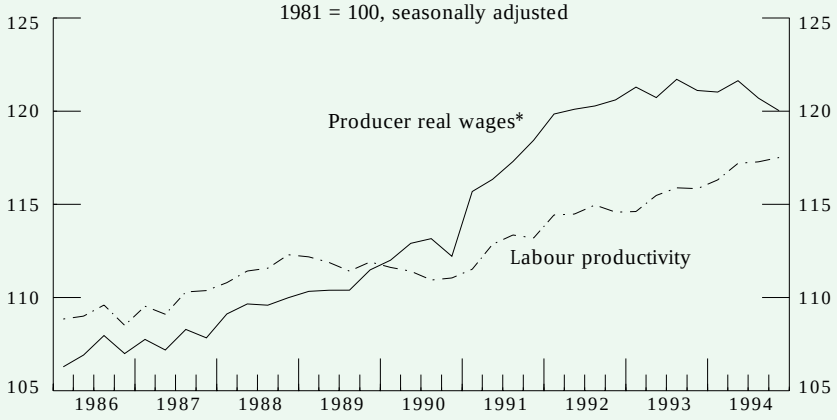


Chart 7

Real Wages and Labour Productivity

1981 = 100, seasonally adjusted



* Labour income per hour divided by the GDP deflator.

Finally, aggregate prices have been restrained by two other factors: lower housing prices and lower costs for machinery and equipment because of falling computer prices.

4. Achieving the Inflation-Control Targets

When monetary policy actions are taken in response to changing economic circumstances, the Bank uses the concept of monetary conditions to capture the influence of both short-term interest rates and the trade-weighted exchange rate on the economy. The monetary conditions index (MCI) constructed by the Bank combines both variables to provide a shorthand measure of the overall degree of tightening or easing of policy (Technical Box 3 and Charts 8-10).

The monetary conditions index provides a measure of the stance of policy.

While the Bank constantly reassesses the appropriate level of monetary conditions needed to achieve its inflation-control targets, its operations must sometimes give precedence to steadying nervous markets.

At times, monetary policy operations must give precedence to steadying nervous markets.

During the past year, financial market developments in Canada were strongly affected by nervousness and volatility in world financial markets, which began shortly after U.S. authorities started to raise interest rates in early February 1994. These external factors spilled over into Canada, where investors had already become increasingly concerned about the rising level of public debt and the political situation in Quebec. Throughout the spring, the dollar weakened and short-term interest rates rose sharply, leaving overall monetary conditions in Canada significantly tighter than at the start of the year.

Around midyear the Bank established an operational target range of 50 basis points for the overnight interest rate – a move designed to enhance the effectiveness and transparency of its operations in volatile markets (Chart 11). As markets stabilized during the summer months, the Bank lowered the range for overnight rates on three occasions, to encourage a decline in short-term rates. These actions were intended to reverse only part of the earlier tightening in monetary conditions, given the strengthening trend in the economy.

Changes in the operational target range for the overnight interest rate reflect policy actions.

In October and November, short-term interest rates began to move upwards again, led by further increases in U.S. interest rates. Initially, monetary conditions in Canada remained largely unchanged, as somewhat higher domestic interest rates were offset by a lower dollar. The Bank of Canada raised its overnight target range once in November.

In early December, investors again became worried about the possibility of further tightening by the Federal Reserve and its implications for Canada. In these circumstances, the Canadian dollar weakened further, short-term interest rates rose sharply and the Bank again adjusted its overnight target range upwards. Monetary conditions tightened, reversing the easing that had occurred around midyear. The Mexican currency crisis in late December added to the nervousness of international financial markets.

Technical Box 3

The Monetary Conditions Index

The monetary conditions index (MCI) is a weighted sum of the changes in the short-term interest rate (the 90-day commercial paper rate) and the G-10 trade-weighted exchange rate from a given base period. The Bank has been using the MCI as an operational target of policy for several years.[1] In an open economy like Canada's, which operates with a flexible exchange rate, monetary policy actions influence aggregate demand through both the interest rate and the exchange rate. Therefore, the central bank cannot ignore exchange rate movements when determining its policy stance.

The weighting for the interest rate versus the exchange rate is 3 to 1 and is based on a number of empirical studies that estimate the effect of changes in real interest rates and the real exchange rate on real aggregate demand over six to eight quarters. The relative weights mean that a 1 percentage point change (100 basis points) in the real interest rate is judged to have about the same effect over time on aggregate demand as a 3 percentage point change in the real effective exchange rate. Because of the lags in publishing the price indexes to calculate the G-10 real effective exchange rate, the Bank tends to focus on a nominal MCI over short horizons.

A change in the MCI simply gives a measure of the degree of tightening or easing in monetary conditions. No meaning should be attached to a particular level of the MCI since it is constructed as a change from an arbitrary base date (currently January 1987 = 0). While the MCI is better conceptually than short-term interest rates as an operational target, this does not imply that monetary policy operations can be tied to any simple mechanical rule related to the MCI. First, the MCI does not (nor do interest rates for that matter) provide a nominal anchor for policy. Second, desired changes in monetary conditions vary in response to movements in aggregate demand and supply. Consequently, the monetary conditions consistent with the target path for inflation control are constantly re-evaluated. For example, an increase in the relative prices of primary commodities produced in Canada tends to lead to an increase in aggregate demand and thus to an increase in the desired MCI.

It is important to note that on a day-to-day basis, the Bank does not try to maintain a precise MCI level by adjusting interest rates in response to every exchange rate wiggle. Only if the exchange rate moved to a new trading range would the Bank try to offset its effect on aggregate demand by encouraging an offsetting movement in interest rates. In addition, there are occasions when Bank actions cannot be devoted to achieving the desired MCI because of the need to cope temporarily with disorderly markets.

1. An operational target is a variable that the central bank can influence fairly directly when it changes the setting of its instrument variable. In Canada, the instrument is the size of the central bank's balance sheet.

Monetary conditions tightened in late 1994...

Downward pressure on the Canadian dollar intensified in early January 1995, and short-term interest rates came under sharp upward pressure. Primarily to calm markets, the Bank raised its operational target range for the overnight rate five times between early January and late February. These actions helped to steady the dollar, which in turn helped ease pressures on interest rates. The positive reaction by financial markets to the measures contained in the federal budget also provided an important steadying influence.

Chart 8

90-Day Interest Rates – Canada and the United States

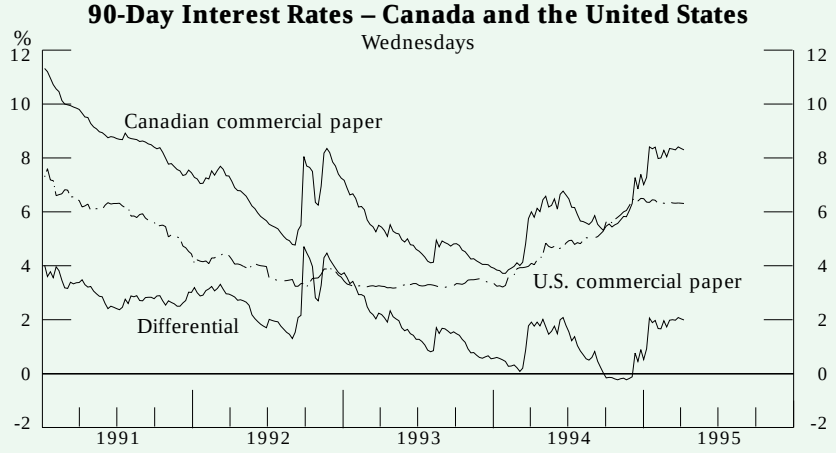
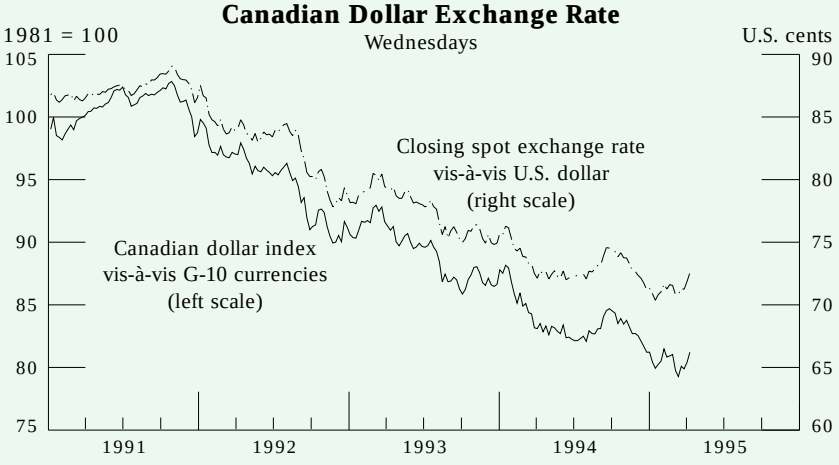


Chart 9

Canadian Dollar Exchange Rate



...and further in the first quarter of 1995.

During the first quarter it also became increasingly apparent that the momentum in the economy was still stronger than expected and, with the degree of slack diminishing rapidly, some tightening in monetary conditions was warranted on that score. By March, monetary conditions were about 1 1/2 percentage points tighter on average than in the second half of 1994 and some 2 percentage points tighter than a year earlier. By mid-April, monetary conditions had tightened somewhat further because of a firming in the Canadian dollar.

Chart 10

Monetary Conditions Index

Wednesdays, January 1987 = 0

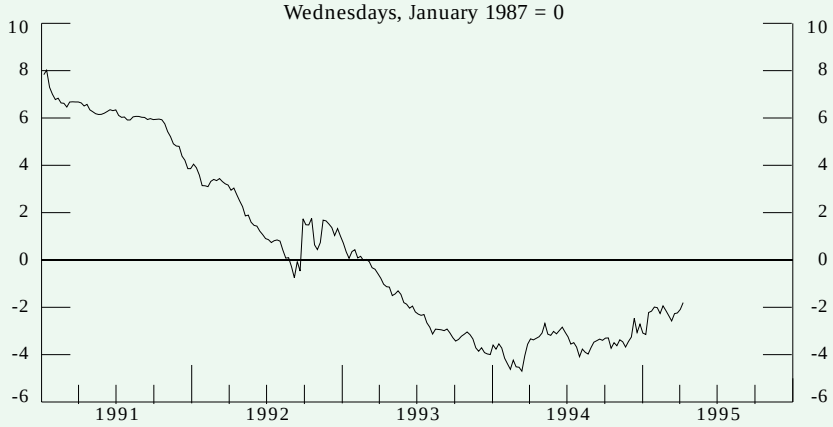
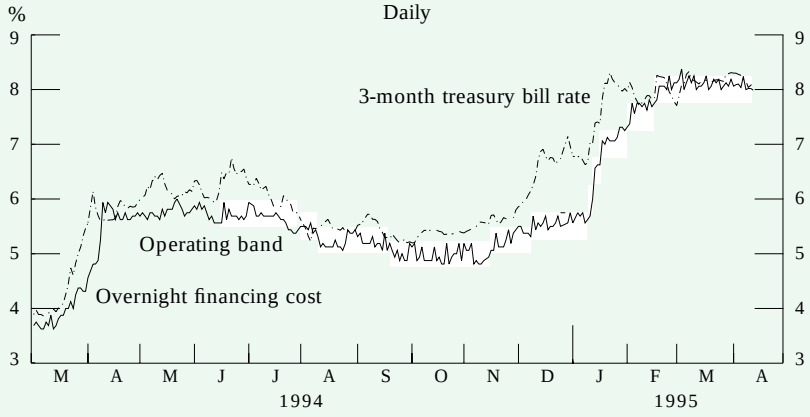


Chart 11

3-Month Treasury Bill Rate and Overnight Financing Cost

Daily



5. The Outlook for Inflation

In assessing the outlook for inflation, the Bank must consider various factors, including the implications of current monetary conditions for the future course of aggregate demand.

Aggregate demand and supply

The most important element in Canada's external economic environment is the U.S. economy, which grew by 4 per cent during 1994. It is the Bank's view that the U.S. economy is in a state of excess demand, although there is little evidence of increased inflationary pressures in broad measures of prices and production costs. The Federal Reserve has raised short-term interest rates to avoid the buildup in inflationary pressures that could result if the economy continued to expand at a pace that maintains or adds to excess demand. The Federal Reserve's actions appear to be slowing the rate of expansion to a more sustainable pace.

The external economic environment remains positive...

Overseas, economic recovery is expected to remain relatively robust. Output in the four major European countries, which rose by an estimated 3 per cent during 1994, may increase by a similar rate this year. The situation in Japan is less certain, following the earthquake in early 1995 and the recent strength of the yen. Nonetheless, it appears that output in Japan should be up this year, albeit at a modest rate.

Given a favourable outlook for the U.S. and overseas economies, it is also expected that commodity prices will remain firm. Historically, the average price of commodities exported by Canada has tended to fluctuate in line with the world business cycle. However, some prices have reached levels where it has become profitable to bring new sources of supply on stream.

...while domestic demand looks less robust.

Overall, external demand is expected to remain a strong positive factor for the Canadian economy. In contrast, domestic demand is likely to be held back by the recent rise in interest rates and by general government restraint.

The implications of federal and provincial budgets for aggregate demand are an important consideration in the conduct of monetary policy. Specifically, the magnitude and timing of fiscal policy actions affecting total demand in the economy must be considered in determining the appropriate path of monetary conditions. In the case of the recent federal budget, the policies announced stretch out and build up over several years.

Consideration of all these factors suggests that total demand will continue to expand through 1995 and take up slack. How much slack will remain at year-end is difficult to gauge, because of uncertainties in estimating both potential output and the strength of demand.

Recent private sector forecasts that have incorporated the effects of the February federal budget suggest that total demand will expand by 3 1/2 to 4 1/2 per cent in 1995. Given more momentum than generally expected in the economy and the Bank's estimate of close to 3 per cent growth in potential output for 1995, a further significant closing

While the output gap should close further during 1995, it will continue to put downward pressure on prices.

of the output gap by year-end seems likely. As noted earlier, the Bank's estimate of the output gap at the end of 1994 was 2 1/2 per cent.

This analysis indicates that the downward pressure that has been exerted on prices by excess capacity in product markets will persist through 1995, but to a lessening degree. Similarly, labour market conditions will continue to moderate wage and cost pressures.

Exchange rate effects

Past exchange rate depreciation risks putting further upward pressure on prices.

A major source of uncertainty for inflation is the effect of past exchange rate depreciation. For the immediate future there seem to be two possibilities. One, assuming that all the impact on prices from past depreciation has occurred and that there is no further depreciation, the effects on the 12-month rate of increase of the CPI from the decline in the Canadian dollar would begin to lessen during 1995. Two, if demand conditions had delayed pass-through from the past depreciation, then the recent strengthening of demand could result in higher prices even in the absence of further depreciation. In the context of this second possibility, the fact that the economy is now operating with significantly less slack reduces the likelihood of offsets through further cost reductions. One possible offsetting factor could be still more competition and restructuring in the retail sector.

On balance, there would appear to be some risk that upward pressure from past exchange rate movements could result in the rate of increase in core CPI rising temporarily above the midpoint of the target band during 1995.

Measures of inflation expectations

Inflation expectations appear consistent with the Bank's inflation-control targets.

Expectations are also an important component in the outlook for inflation. Eighty-nine per cent of respondents in the latest quarterly survey of Canadian business attitudes conducted by the Conference Board of Canada expected inflation to be in the 1 to 3 per cent range over the near term. In the Conference Board's latest *Quarterly Survey of Forecasters*, it was expected that CPI inflation would be between 1 3/4 and 2 1/2 per cent for 1995, with an average of 2 per cent. The Board's latest compensation survey also points to little change in aggregate wage increases this year.

One measure that is sometimes used to calculate long-term inflation expectations is the difference between yields on government 30-year conventional and real return bonds (Chart 12). On this basis, inflation over the long term is expected to be close to 4 per cent. While this is down from 4 3/4 per cent in mid-1994, it is up from 3 1/4 per cent in mid-1993. It is difficult, however, to know how accurately this measure captures true inflation expectations. The market for real return bonds is small, and this measure also captures a premium for inflation uncertainty.

Other indicators

The monetary aggregates provide important information as indicators of near-term economic developments.

Monetary aggregates support an outlook of low inflation.

The most useful monetary aggregate for forecasting inflation one or two quarters ahead is the broad aggregate M2+. Even allowing for the recent substitution of deposits into longer-term mutual funds, the Bank's indicator model for inflation using M2+ predicts core inflation of around 1 per cent or less for the next two quarters (Chart 13).

The rate of increase of real M1 (the narrow monetary aggregate, M1, deflated by prices) provides useful information on future output growth. This indicator points to continued solid expansion of the economy, but at a rate below that recorded during 1994.

Chart 12

30-Year Bond Yields

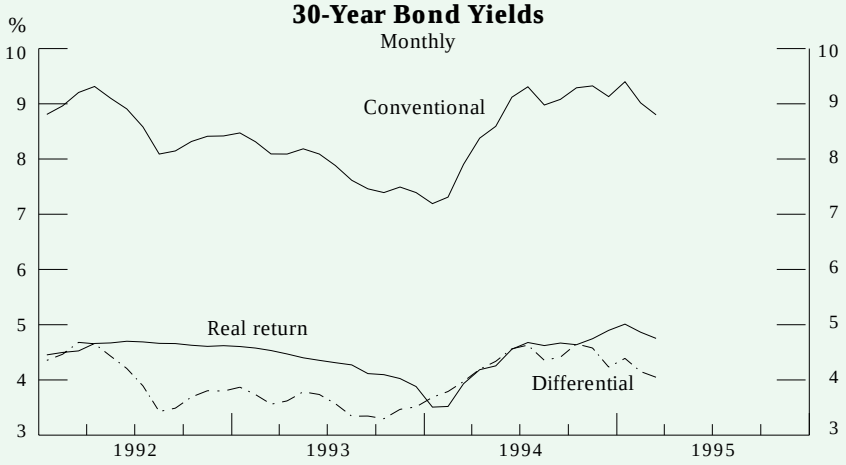
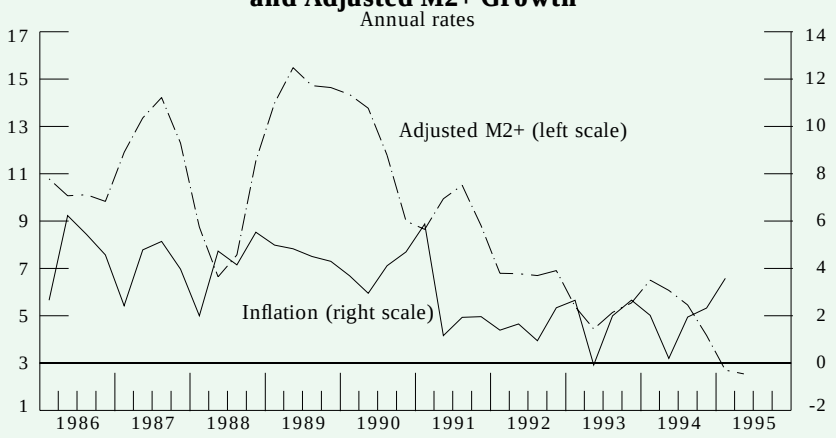


Chart 13

Quarterly Inflation (Based on Core CPI) and Adjusted M2+ Growth*



* Three-quarter growth of M2+ plus Canadian dollar mutual funds at financial institutions, one quarter earlier.

6. Conclusions

Taking all factors into account, the current outlook is consistent with the Bank's inflation-control targets.

A low level of inflation for the past three years has resulted in a significant downward adjustment of inflation expectations in Canada. This progress towards price stability is in turn providing an important underpinning for good economic performance. Nonetheless, risks remain.

Over the near term, it appears that pressures from past exchange rate depreciation could move core CPI inflation into the upper half of the target band. To the extent that these pressures materialize, the concern for monetary policy is that they be temporary in nature and not generate expectations of future inflation pressures.

Beyond the short term (through year-end 1995 and into 1996), the main concern is proper gauging of the speed and extent of closure in the output gap. In the past, the momentum of the economy has often been underestimated at this point in the cycle.

When all of this is taken into account, the current outlook for inflation is consistent with the Bank's inflation-control targets.

This is a report of the Governing Council of the Bank of Canada: Gordon Thiessen, Bernard Bonin, Charles Freedman, Paul Jenkins, Tim Noël and Sheryl Kennedy.

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Appendix

THE BENEFITS OF PRICE STABILITY

(Extract from the 1990 Bank of Canada annual report)

The first section of this report emphasized the fundamental point that if our nation's economy is to perform well, its citizens need to have confidence that the money they use will hold its value. And money will only retain its value if the general level of prices remains stable – in other words, is not subject to chronic inflation. The view that inflation brings benefits to the economy in the form of higher employment has been discredited by the events of the 1970s and 1980s. What is less widely recognized is that inflation carries with it costs that are widespread and pervasive. Inflation creates increased uncertainty about the future, which makes it much more difficult for everyone to make good economic decisions. It also causes households and businesses to divert substantial amounts of time and money to try to shield themselves from the effects of rising prices. But not everyone is successful, and the inflationary process is inequitable and socially divisive. These are costs that can be avoided if monetary policy is successfully directed to achieving and maintaining price stability. This section reviews in more detail the costs that inflation imposes on the economy.

Inflation creates uncertainty about the future

In a monetary economy, decisions to buy or sell, to borrow or invest are based on prices – both current prices and the prices expected to prevail in future years. In other words, prices permit comparisons of the current and expected future values of the wide array of goods and services found in different markets, providing workers, managers, savers and investors with the information and incentives to undertake economic decisions. Inflation creates uncertainty, which distorts and confuses that information.

Take for example a decision by a business to build a new plant. Such a decision has to take into account not only the cost of funds and the prices of labour and materials to build the plant, but also the prices expected in the future for the output of the plant and for the labour and materials to produce that output. The future is always uncertain, but the uncertainty is magnified when prices are rising, since inflation is seldom stable and predictable. Inflation makes it much more difficult to make good investment decisions.

Moreover, during inflation, prices do not respond identically to the excess demand pressures. These differing movements in prices are easily misread, and exaggerated expectations frequently develop about the likely further increases in the prices of products that are already rising most rapidly. One result is periodic bouts of over-investment in these products. For example, it is the prices of primary commodities and real estate that

have typically responded the most quickly and vigorously during inflationary periods. The burst of investment in developing new sources of primary commodities and in acquiring existing producers of resources during the late 1970s, and the construction boom in condominiums and commercial buildings in some centres during the late 1980s are graphic illustrations of the problem of over-investment in response to the exaggerated expectations to which inflation gives rise.

The costs of having to cope with inflation

As inflation becomes entrenched, businesses and individuals find that they have to make expenditures of both time and money to deal with its effects. This goes far beyond the need for more frequent revision and reissue of price lists and catalogues. For example, contracts of all sorts become shorter in term so that the parties are not locked into a situation where they can be hurt by unexpected inflation, and this means more effort must be devoted to negotiating contracts. Buyers have difficulty in obtaining guaranteed prices of products for future delivery. Investors become concerned about hedges against inflation rather than about productive investments. At the peak of inflation in 1980-81, investors turned in large numbers to assets such as real estate, gold and silver, precious gems and works of art, either to protect themselves against inflation or to try to benefit from it.

Financial contracts for instruments such as deposits, loans and security issues have been particularly affected by the concerns about inflation. The average term of such contracts has shortened dramatically since the early 1970s when inflation became a more persistent and serious problem. The long-term corporate bond market has contracted and 25-year residential mortgages have become virtually unavailable. Too many savers were caught by the rise in inflation during the 1970s and are no longer willing to provide funds at fixed interest rates for extended periods. As a result, such long-term funds are no longer as readily available to private borrowers wishing to invest in long-term assets such as housing or production facilities.

Large and frequent users of financial services have increasingly resorted to some very sophisticated techniques to limit their exposure to inflation-related risks. Examples include interest rate and currency swaps as well as futures and options contracts. The diversion of productive resources to the financial sector in an attempt to provide shelter from the effects of inflation has been substantial.

To attract funds, financial institutions and markets need to compensate savers for inflation. Interest rates therefore are higher by an inflation premium that savers demand as an offset for the declining value of their money. But since future inflation is highly uncertain, interest rates in countries with a history of inflation also carry a further premium to cover the risks caused by uncertainty about inflation. As a result, it is more costly for borrowers to obtain funds to carry out their spending plans.

As well, when high inflation requires a high interest premium to compensate lenders for the eroding value of a loan, borrowers are effectively

forced to repay their loans much more rapidly than when prices are stable. With mortgage loans, for example, this forced repayment can push homeowners into financial difficulty, even when house values are rising significantly in response to inflation, because the inflation premium embodied in mortgage rates makes it difficult for them to manage their monthly payments.

While savers may receive compensation through interest rates for the fact that inflation undermines the value of their savings, they are required to pay tax on the whole of their interest income. With inflation at 4.5 per cent, for example, a saver with a 40 per cent marginal tax rate, who earns just under 5.5 per cent after tax on a 9 per cent term deposit, is left with a return of less than 1 per cent after inflation. The decline in the effective return on savings during periods of inflation has had negative effects on the incentive to save. And the interaction of inflation with a corporate tax structure that was similarly designed for a world with stable prices has been a significant distorting influence on the behaviour of corporations.

Equity and fairness

The costs of inflation do not fall equally on the population. Some individuals and businesses are better placed than others to protect themselves against inflation, but there is also a good deal of chance involved. Frequently, it is the least sophisticated parts of our economic society that lose out when inflation takes hold. The most widespread examples of inflation losses relate to fixed retirement pensions. At 4.5 per cent inflation, such pensions will lose half their value in just over 15 years. People who gain from inflation, whether because of their ability to invest in assets that benefit from inflation or by chance, do so only at the expense of others in the community. These gains do not reflect reward for greater effort or contributions to productivity. As a result, inflation leaves a sense of great unfairness in a society, and it undermines the sense of equality of opportunity that is at the base of a successful market economy.

"Living with inflation" is no answer

One solution that has been proposed to deal with this unfairness, while at the same time avoiding the effort and discipline that is required to return to price stability, is to adjust our economic arrangements to try to live with inflation. The idea is to protect individuals against losses from inflation through indexing all types of incomes and payments. The authorities would aim at stabilizing the inflation rate and, it is contended, the economy would readily adjust to that stable rate, and the costs of inflation would be avoided.

The experience of Canada in dealing with inflation since the early 1970s is a good indication that an economy as complex as ours does not move easily or quickly to adjust to inflation. Clearly, the costs of changing our institutions in order to live with inflation are high. It is not just a matter of indexing incomes. Major changes would be required not only in the personal and corporate tax systems but also in legal arrangements,

accounting standards and many other aspects of economic life. It is a telling fact that after 20 years during which inflation averaged 7 per cent, most institutional arrangements have not adapted to take account of inflation.

But even if the institutional changes were made, living with inflation would not be a credible policy. By seeking to stabilize the inflation rate at its current level, the authorities would demonstrate their unwillingness to take the actions required to combat inflation. It is unlikely therefore that anyone would believe that if some adverse development suddenly pushed inflation up to a higher level, the required anti-inflationary actions would be taken. Monetary policy aimed at stabilizing inflation at a given level would constantly be battling against such scepticism. Countries that have gone furthest in indexing their economic systems have typically found themselves facing higher and higher rates of inflation that have put at risk the entire institution of money. A policy of tolerating inflation systematically undermines the capacity of a country to produce good economic performance.

* * *

To avoid the burden that inflation imposes on the economy requires a monetary policy that is firmly directed to reaching and maintaining price stability. It is only with stability in the general price level that a sound basis can be provided for investment and lending decisions and the most effective use will be made of the economy's resources. At the same time, the extensive effort and resources devoted to coping with inflation can be put to more productive use and the unfairness to those who cannot protect themselves from inflation will be eliminated.