BANK OF CANADA

Monetary Policy Report

– May 1996 –

The silver dollar featured on the cover commemorates the Griffon*, the first ship to sail the Great Lakes above Niagara Falls. Built as a commercial vessel by the explorer René-Robert Cavelier, sieur de La Salle, the* Griffon *sailed under his command to Michilimackinac and Green Bay but was lost in a storm on its return voyage.*

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"The focus of Canadian monetary policy is on price stability. However, the Bank of Canada does not pursue price stability for its own sake but rather as a means of contributing to a well-functioning, productive economy, capable of providing Canadians with a rising standard of living."

— Gordon Thiessen

Speech given at *The World in 1996 Conference,* 19 January 1996

1. Introduction

The six months since the last Report *have been characterized by downward pressure on the trend of inflation.*

This *Report* presents the Bank of Canada's assessment of the trend of inflation in Canada and explains the monetary policy actions deemed necessary to keep inflation within the Bank's inflation-control target range.

Downward pressure on inflation over the last six months has warranted an easing in monetary conditions, which the Bank encouraged through reductions in its operating band for overnight interest rates. These actions have been taken against a favourable backdrop of improving financial market sentiment that reflects both progress on the fiscal front domestically and global reductions in short-term interest rates.

The Bank has nevertheless proceeded at a measured pace in its policy actions, given that short-term interest rate differentials against the United States were narrowing and have recently turned negative. Moreover, financial markets remain wary about the high public sector debt levels in Canada and about the political situation in Quebec.

2. Inflation-Control Targets

The inflation-control target range is set at 1% to 3% until 1998.

In December 1993, the federal government and the Bank of Canada set a target path for inflation extending from the end of 1995 to the end of 1998. The objective is to keep inflation inside a range of 1 to 3 per cent during that period. By 1998, a decision will be taken on a future target range that would be consistent with price stability.

The inflation-control targets are specified in terms of the consumer price index (CPI). The Bank focusses on the CPI excluding food, energy and the effect of indirect taxes because there is a good deal of transitory movement in CPI inflation caused by fluctuations in the prices of food and energy, as well as by changes in indirect taxes. This measure is referred to as the *core* CPI. Over longer periods of time, the measures of inflation based on the total CPI and the core CPI tend to follow similar paths. Therefore, achieving the target path for core CPI inflation should eventually lead to similar movements for total CPI inflation. In the event of persistent differences between the trends of the two measures, the Bank would adjust its desired path for core CPI inflation so that total CPI inflation would come within the target range.

This Report *includes information received to 23 April 1996.*

3. Recent Developments in Inflation

The Bank promotes a rate of monetary expansion consistent with its inflation-control target range.

Over time, inflation results from excessive monetary expansion, although the lags between money supply growth and inflation can be long and difficult to predict. The monetary transmission mechanism involves a series of relationships, beginning with the Bank's influence on overnight interest rates and ending with the ultimate impact on inflation. Through its actions, the Bank promotes a rate of monetary expansion consistent with its inflation-control target range, which in turn should foster sustained economic expansion.

Monetary policy must focus on the factors influencing the trend of inflation six to eight quarters into the future.

Monetary policy actions must thus be forward-looking, focussing on the factors that will influence the trend of inflation six to eight quarters into the future. Developments in inflation over the past year have clearly illustrated the need to distinguish between fundamental supply/demand factors that drive inflation over time and transitory factors that do not have a permanent effect. Measures of inflation rose through the first half of 1995 as a result of both exchange rate and commodity price effects on consumer prices. However, as predicted in earlier issues of this *Report*, these transitory disturbances have had little effect on the trend of inflation. Thus, as these effects have diminished, measured inflation has fallen back and the excess supply situation in the economy has again become the primary factor affecting the rate of inflation.

Inflation and the target range

Core inflation, after remaining in the upper half of the target range through most of 1995, has recently fallen back into the lower half of the range.

As anticipated in the last *Report*, the 12-month rate of increase in the core CPI has recently moved into the lower half of the target range. However, the speed at which inflation has declined was somewhat faster than expected, partly as a result of discounting by retailers in response to weak consumer demand. As of March 1996, core inflation was down to a 12-month rate of 1.5 per cent, compared with a high of 2.7 per cent reached in May 1995 (Chart 1). The 12-month rate of increase in the total CPI was 1.4 per cent, down from a peak of 2.9 per cent in May 1995.

Other broad measures of inflation also declined in the second half of 1995.

Other broad measures of price inflation also fell back in the second half of 1995. The rate of increase in the fixed-weight GDP deflator was 2.2 per cent in the fourth quarter of 1995 on a year-over-year basis, compared with 2.7 per cent in the second quarter of 1995 (Chart 2). The year-over-year rate of increase of the chain price index[1] for GDP excluding inventories — a measure of price changes that adjusts for shifts in the composition of spending — also declined over the same period.

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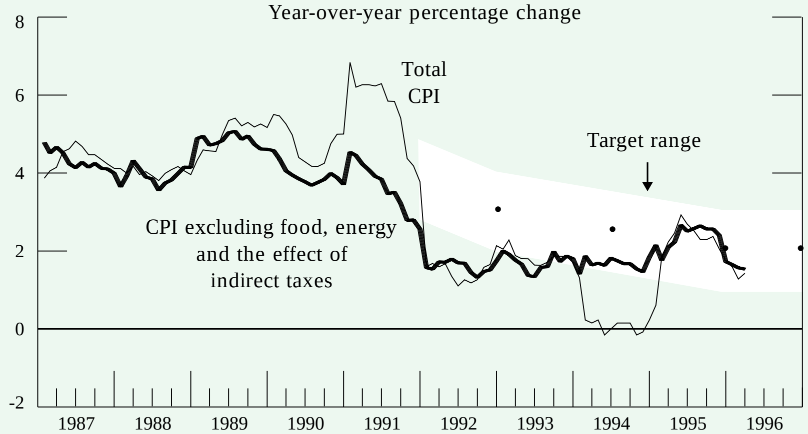
1. The chain price index for GDP, excluding inventories, weights quarterly price changes by the dollar value of expenditure components in the previous quarter.

Chart 1

Consumer Price Index

Year-over-year percentage change

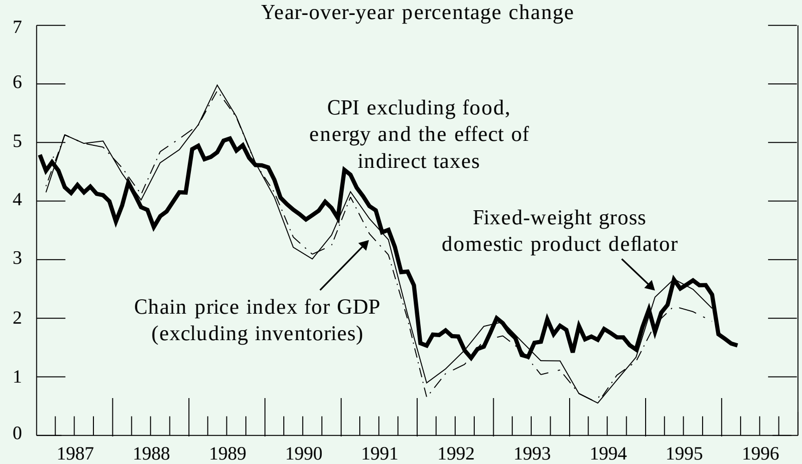


• Midpoint of the inflation-control target range

Chart 2

Broad Inflation Measures

Year-over-year percentage change



Factors at work on inflation

Excess capacity in product markets and slack in labour markets continued to place downward pressure on inflation over the past six months. At the same time, the upward pressure on the inflation rate from both commodity price increases and the past depreciation of the Canadian dollar lessened.

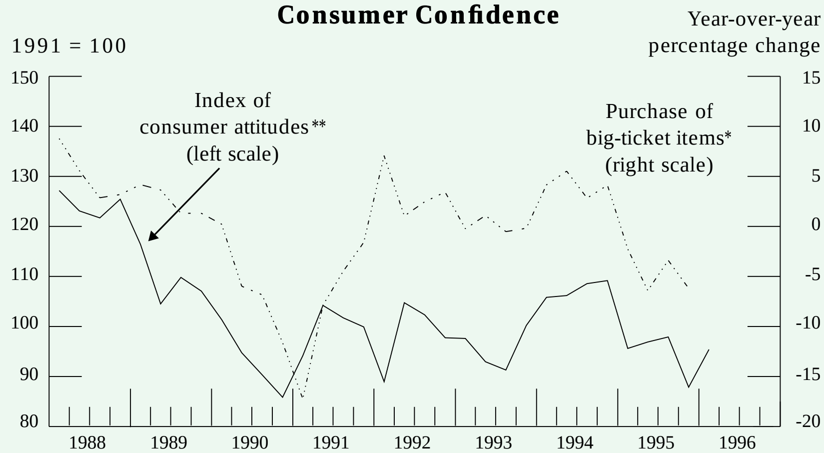
Aggregate demand and supply

The pickup in economic activity during the second half of 1995 was weaker than expected.

After levelling off during the first half of 1995, economic activity in Canada edged up somewhat in the second half. Although the last *Report* suggested that only a modest pickup in growth could be expected in the third quarter, the anticipated further strengthening towards year-end did not materialize. One factor contributing to this outcome was a further weakening in economic confidence among households, which resulted in households reducing their spending in spite of significantly lower interest rates (Chart 3 and Technical Box 1).

Chart 3

Consumer Confidence



* Expenditures in constant dollars on consumer durables plus housing
** *Source*: Conference Board of Canada

Technical Box 1

Consumer Confidence

Consumer confidence (as measured by the Conference Board's index of consumer attitudes) fell considerably during 1995. It was particularly affected by a sharp increase in uncertainty regarding job prospects, given sluggish employment growth for much of 1995, and by the increasing concern of households about their financial situations.

For a growing number of households, employment uncertainty has risen in the context of fiscal restraint and the associated downsizing and reorganizing of the public sector. At the same time, restructuring and lay-offs in the private sector have continued, particularly in industries that were formerly insulated from competition by regulations or trade barriers.

A number of factors likely contributed to the worsening financial situations reported by households. Real personal disposable income per worker continued to decline, as growth in income remained weak. Furthermore, the upward spikes in interest rates in both 1994 and 1995 made households feel more vulnerable to major fluctuations in financial markets. And the higher rates, in conjunction with an increase in the ratio of household debt to personal disposable income, caused the debt-service ratio to rise through most of 1995. A further reduction in housing prices in 1995 may also have contributed to a heightened sense of financial insecurity. Finally, there may have been growing concern about the future of public pension plans.

Given these developments, consumers felt that it was not a good time to make major purchases. Indeed, in 1995, consumer expenditures on big-ticket items such as homes, motor vehicles and furniture fell considerably.

There are, however, a number of factors that are expected to improve consumer confidence and lead to renewed growth in household spending in coming months. A continuation of the solid employment gains in the private sector seen between December and March, especially if they increasingly represent new full-time positions, would reduce employment uncertainty. The net decline in interest rates since October will contribute to lower debt-servicing costs and should improve the financial situations of many households. The increased wealth associated with lower interest rates and higher stock prices should also encourage consumption. Indeed, there are already indications that household outlays, particularly on housing, began to rebound in the first quarter.

Activity in the second half of 1995 was also held back by a substantial reduction in inventory accumulation following the buildup of stocks in the first half of the year. On balance, after several years of strong growth, business fixed investment showed little change over this period.

In marked contrast to declining domestic demand in the second half of 1995, exports increased sharply as growth in the U.S. economy picked up. Increased activity in the U.S. housing and automobile markets, together with continued strong demand for investment goods, helped stimulate demand for Canadian exports. Export demand might have been even higher had it not been for sluggish growth in overseas economies and some temporary weakness in the U.S. economy towards year-end.

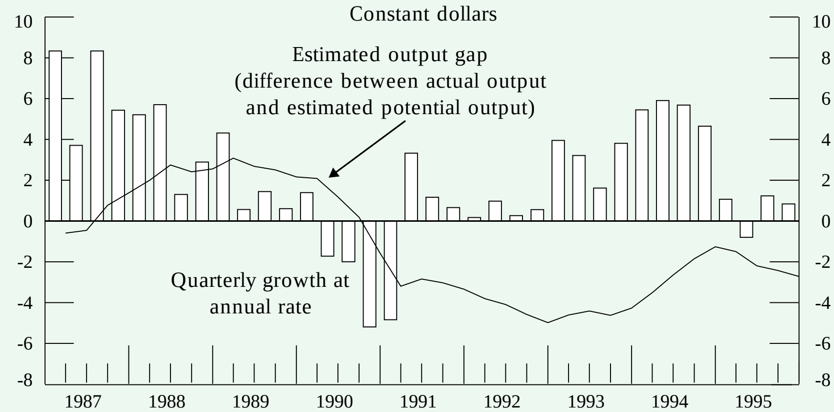
Slow aggregate demand growth contributed to a widening of the gap between actual and potential output.

The slow growth in aggregate demand in the second half of 1995 has led to an increase in excess capacity, implying increased downward pressure on the trend of inflation. However, there is evidence that aggregate supply in recent years has been lower than previously estimated because of a reduction in the trend rate of labour force participation (Technical Box 2). This has led the Bank to lower its estimate of the level of potential output by about 1 per cent since the last *Report*. The Bank now estimates that the output gap widened to between 2 1/2 and 3 per cent at year-end, up from between 2 and 2 1/2 per cent at midyear (Chart 4).[2]

Chart 4

Gross Domestic Product

Constant dollars



2. See the discussion of the Bank's methodology for estimating potential output in the May 1995 *Monetary Policy Report* (Technical Box 1, page 8).

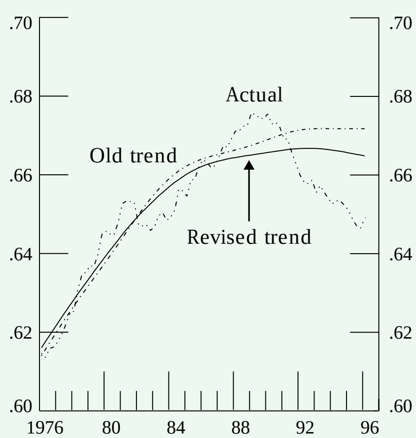
Technical Box 2
Labour Force Participation

The labour force participation rate[1] fell from about 67 1/2 per cent at the start of 1990 to about 64 1/2 per cent at the end of 1995. Although the participation rate has had a tendency to decline in recessions or periods of slow growth and to rise faster than the trend during periods of strong growth, the current decline has been unusually pronounced and prolonged. The relatively weak growth in employment may have discouraged more people from looking for work than would be normal at this point in the cycle.

The cyclical rebound in the participation rate is, however, likely to be more modest than previously expected, since a number of developments suggest that the trend participation rate may be lower than estimated earlier. These developments include the flattening out of the participation rate of women 25 years and over, the continued rising trend in school enrolment rates for people under 25 (the group with the sharpest decline in participation rate) and the increase in early retirements. While these developments may have been affected by cyclical factors, they also reflect more persistent forces. For example, an increasing number of jobs require greater skills, a fact that is likely behind the rise in school enrolment rates for those under 25. Over time, these higher skill levels should tend to raise the economy's capacity to produce goods and services, but the immediate effect of the lower participation rate is to reduce potential output.

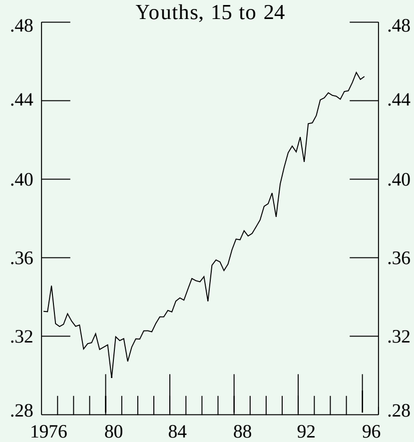
The more modest cyclical rebound in the participation rate, all else being equal, would imply a somewhat faster decline in the unemployment rate.

Participation Rate



School Enrolment Rates

Youths, 15 to 24



1. The percentage of the population 15 years of age and over who have jobs or are looking for jobs.

The exchange rate and commodity prices

Exchange rate effects on inflation have diminished considerably over the past six months.

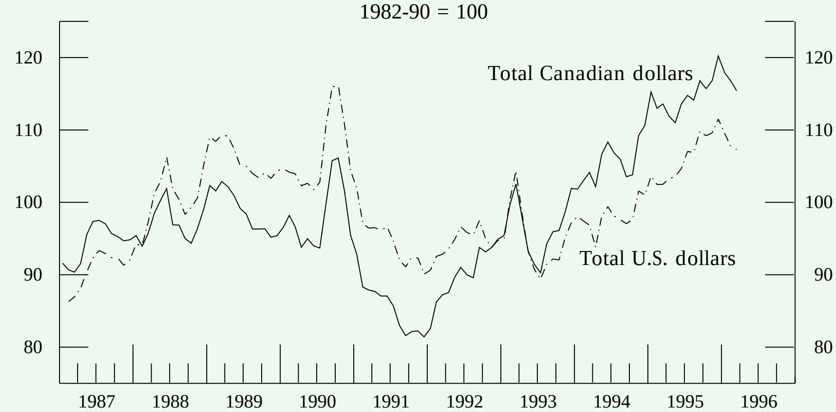
Given the weight of imported goods in the average consumer basket in Canada, exchange rate movements typically feed through to core CPI by a factor of about one-fifth. Most of this adjustment normally takes place within two years after a change in the exchange rate. Accordingly, the impact on inflation of the major depreciation of the Canadian dollar (which was largely over by mid-1994) has diminished appreciably over the last six months. At the recent peak in measured inflation in May 1995, this effect was estimated to have accounted for over 1 percentage point of the core inflation rate of 2.7 per cent. This exchange rate effect is estimated to have fallen to about 0.5 percentage points in March 1996.

The decline in this effect has been clearly evident in the prices of motor vehicles, where the year-over-year rate of increase in Canada over that in the United States fell from 2.9 percentage points in January 1995 to 2.1 percentage points in February 1996. Increased competition and the effects of past improvements in productivity in both the retail and the manufacturing sectors have also put downward pressure on the prices of various imported and import-competing goods in recent months.

Chart 5

Bank of Canada Commodity Price Index

1982-90 = 100



The impact of past commodity price increases on inflation, at both the producer and consumer levels, is also diminishing.

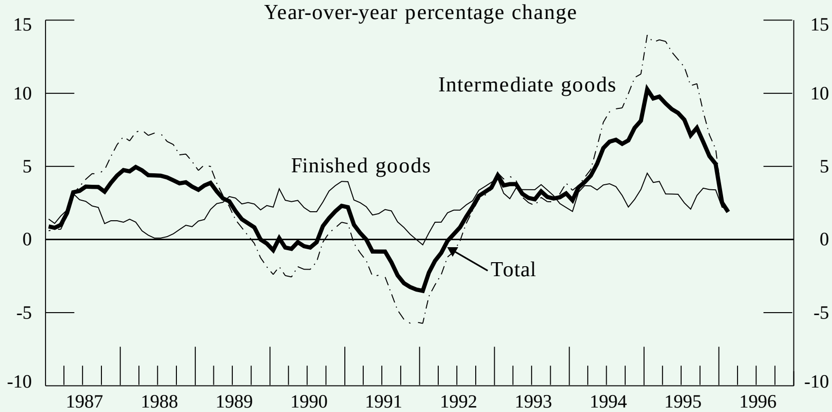
World commodity prices (quoted in U.S. dollars) have on average remained at relatively high levels since last October (Chart 5). Price increases have been most pronounced for natural gas, crude oil, grains and lumber. Both natural gas and crude oil prices have risen considerably following colder-than-normal weather in much of North America and Europe. Crude oil prices have also been under considerable upward pressure because a resumption of petroleum sales by Iraq is unlikely in the near term. Lumber prices have recovered following improvements in the U.S. housing market and in anticipation of an agreement to tax Canadian exports to the United States if they exceed prescribed limits. Grain prices have continued to increase as a result of firm world demand and adverse growing conditions in the United States. In contrast, the prices of most industrial materials have fallen because of weakening demand (given only moderate world output growth as well as efforts by users to reduce stocks) and substantial increases in supplies. Declines have been most pronounced in the case of pulp, where prices have fallen by more than 50 per cent from the peak in late 1995. The weakening in industrial materials prices received by Canadian commodity producers has been reflected in a marked deceleration in the year-over-year rise in both the aggregate industrial product price index (Chart 6) and aggregate export prices.

The impact of past commodity price increases continues to show up in selected consumer prices, with the clearest examples being the substantial price increases for both paper supplies and reading materials. However, here again, the impact on core inflation appears to be decreasing from a peak of about half a percentage point observed in the fall of 1995.

Chart 6

Industrial Product Price Index

Year-over-year percentage change



Cost control and other factors

A combination of sluggish demand in the second half of 1995 and fiercely competitive markets has maintained the pressure on producers to control costs and to raise productivity. Overall, cost increases have been low.

Wage increases in 1995 picked up a little in the private sector but remained moderate overall.

Wages, the largest component of total costs, continued to rise at a very moderate pace during 1995, with wage settlements averaging 1.4 per cent in the private sector and 0.6 per cent in the public sector. (The average settlements in the second half of the year were similar to those in the first half.) For the private sector, this represented a slight increase over the average in 1994, but in many cases wage increases have followed earlier substantial productivity gains. The unemployment rate has remained almost unchanged over the past six months, as encouraging gains in aggregate employment levels have been matched by similar increases in the labour force.

Productivity (output per person-hour) was virtually unchanged last year, after impressive gains in 1993 and 1994. The lack of growth in

Chart 7

Unit Labour Costs and Labour Productivity

Year-over-year percentage change

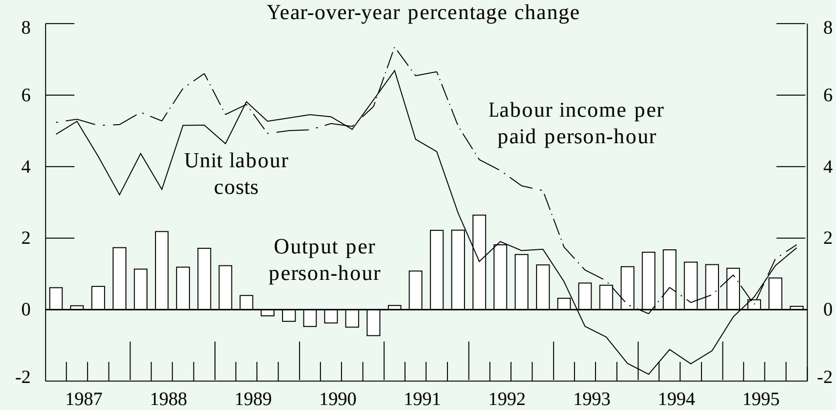


Chart 8

Real Wages and Labour Productivity

1981 = 100, seasonally adjusted

* Labour income per person-hour divided by the GDP deflator

With lacklustre output growth, gains in productivity stalled and unit labour costs rose.

productivity in the second half of 1995 resulted partly from the largely unanticipated slowing in demand towards year-end, since firms tend not to adjust their labour inputs fully to adverse demand shocks in the short run.

This combination of some wage gains and little change in aggregate productivity caused unit labour costs to rise in the second half of 1995 (Chart 7).

The producer real wage gap opened up slightly towards year-end.

The gap between real wages and productivity opened up slightly in the second half of 1995 (Chart 8). This reflected a combination of moderate rises in wage rates, lower increases in producer prices and the lacklustre performance of labour productivity. The larger gap will encourage continued cost-containment measures, especially in the retail sector where the gap is most pronounced.

4. Achieving the Inflation-Control Targets

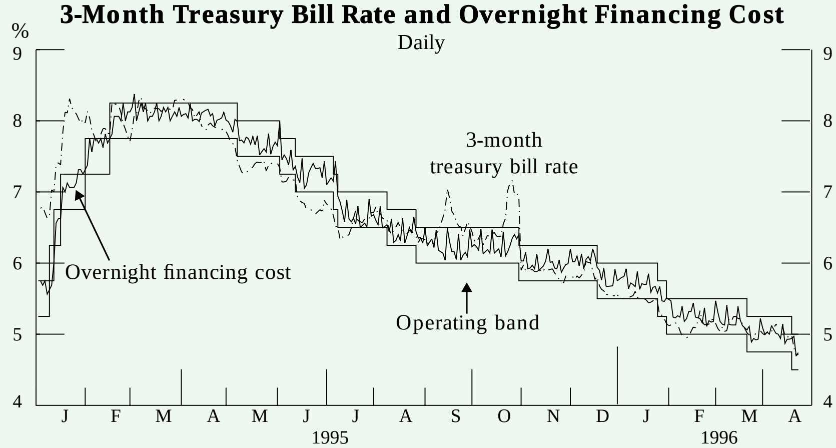
Monetary policy is aimed at keeping inflation within the 1 to 3 per cent inflation-control target range. In light of the accumulating evidence that the trend of inflation was moving into the lower half of the range, the Bank reduced the operating band for the overnight interest rate by one-quarter of a percentage point on six occasions since the last *Report* in order to ease monetary conditions (Chart 9). The first move (31 October) was the day after the Quebec referendum, as the Bank took the earliest opportunity following this period of heightened market uncertainty to react to the disinflationary pressure. Two of the cuts (on 19 December and 31 January) took advantage of reductions in the U.S. federal funds rate, two others (on 25 January and 21 March) followed reports indicating that inflation had moved firmly into the lower half of the target range, while the most recent cut (18 April) occurred in the context of reductions in official rates by a number of central banks in Europe.[3]

Monetary conditions have eased in response to disinflationary pressures.

Chart 9

3-Month Treasury Bill Rate and Overnight Financing Cost

Daily



Over this period, money market interest rates declined broadly in line with the overnight rate as financial markets reacted positively to the Bank's actions. Canada's solid inflation performance and the pronounced progress that has been made towards achieving stated fiscal policy objectives, as well as declining short-term interest rates globally, all contributed to this improved sentiment in the money market. Indeed, Canada-U.S. short-term interest rate differentials narrowed over this period and are now negative (Chart 10). Despite this development, the Canadian dollar continued to trade in a narrow range (Chart 11). The firmness of the dollar appears to reflect the same factors that are supporting the money market, as well as the recent marked improvement in the current account of Canada's balance of international payments.

3. Effective 22 February 1996, the Bank adopted a new method for setting the Bank Rate, tying it to the top of the Bank's operating band for the overnight rate (Technical Box 3). This change had no effect on monetary conditions.

Technical Box 3

Setting the Bank Rate

For about 16 years, the Bank Rate was set each week at a level equal to the average interest rate established at the auction of 3-month Government of Canada treasury bills, plus one-quarter of a percentage point.

On 22 February 1996 the Bank adopted a new approach, in which the Bank Rate is set at the upper limit of the operating band for the overnight financing rate — the rate at which major participants in the money market borrow and lend 1-day funds.

The operating band was established in mid-1994 when the Bank began acting to hold the overnight interest rate within a band of one-half of a percentage point.[1] Since then, the movements in this band have provided a better indication of changes in the stance of Bank policy than those in the 3-month treasury bill rate. This is because the Bank, through its operations, controls the overnight rate more directly than the 3-month rate. The 3-month rate is influenced both by the overnight rate and by market expectations of what the overnight rate will be over the next three months.

With the new arrangement, the Bank Rate and the Bank's operating band for overnight rates become consistent measures of the Bank's near-term policy stance. This eliminates the uncertainty and confusion that had existed previously as to which was the key indicator of the Bank's policy stance.

The change also made the Bank Rate a more appropriate interest rate for the Bank's transactions, which are typically for a 1-day term. These include advances to financial institutions and purchase and resale transactions with investment dealers.

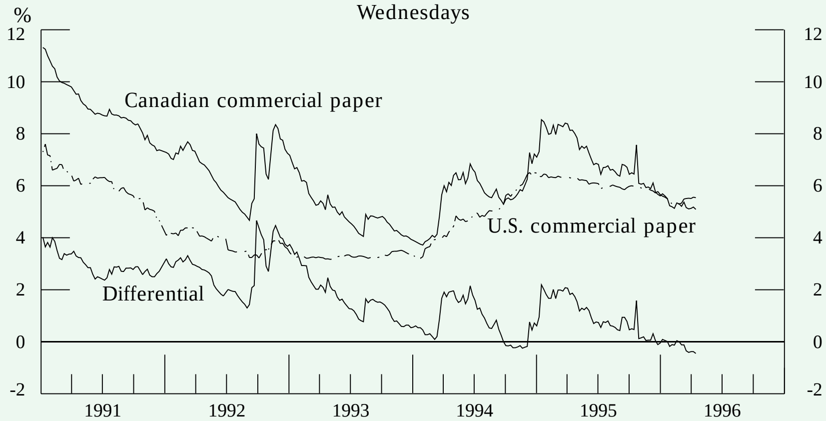
The adoption of the new method followed discussions between the Bank and the financial community regarding the future implementation of monetary policy under a new electronic payments system that will provide same-day settlement for large value payments. In this future environment, the Bank will provide overnight financing at a cost equal to the upper limit of its operating band. Thus, the new method of setting the Bank Rate will continue to be appropriate in the future.

1. See "Monetary Policy Operations: Increased Emphasis on the Overnight Interest Rate" (Technical Box 3, page 16) in the November 1995 *Monetary Policy Report*.

Chart 10

90-Day Interest Rates – Canada and the United States

Wednesdays

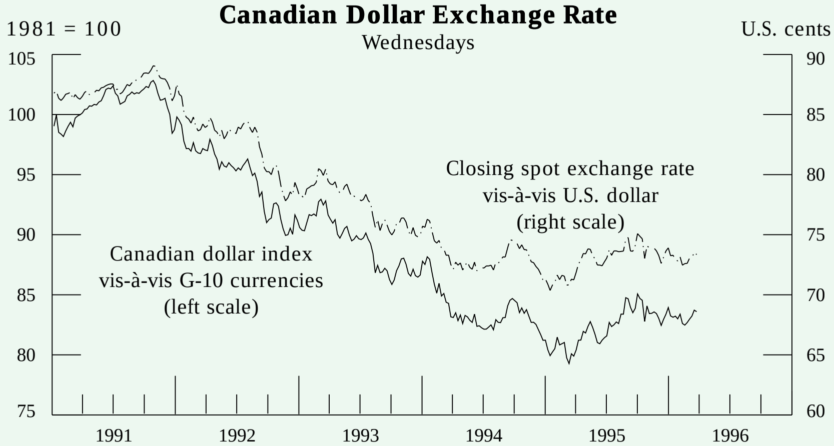


The decline in short-term interest rates has been reflected in the Bank's monetary conditions index (MCI) — a shorthand measure of the combined effect of changes in short-term interest rates and the exchange rate on aggregate demand (Chart 12). Since last autumn, monetary conditions have eased by the equivalent of about 200 basis points, attaining the lowest level in two years.

Chart 11

Canadian Dollar Exchange Rate

Wednesdays



The Bank has proceeded at a measured pace in its policy actions ...

With many central banks cutting short-term interest rates, the international environment has provided a favourable backdrop for domestic rate reductions. Moreover, the reasons for easier monetary conditions in Canada seemed clear to market participants and, in most cases, the reduction in the overnight rate was anticipated by them and already factored into money market rates. The Bank, nevertheless, proceeded at a measured pace in lowering the operating band for the overnight rate. By doing so,

... hoping to foster as much understanding and as little uncertainty as possible.

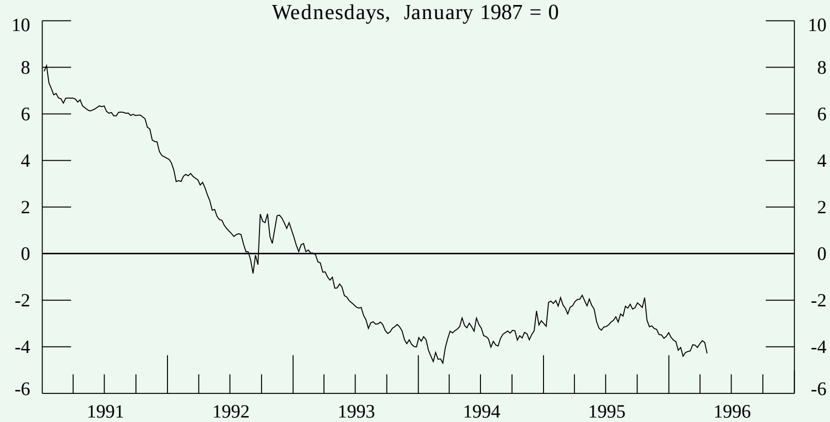
it hoped to foster as much understanding and as little uncertainty as possible about its policy actions at a time of narrowing short-term interest rate spreads and ongoing financial market attention to the high levels of government indebtedness and the political situation in Quebec.

At times in the past when there was significant financial market uncertainty, monetary policy actions aimed at easier monetary conditions provoked a sharp drop in the value of the Canadian dollar that set up expectations of further depreciation. This led to heavy selling of Canadian dollar assets and thus to sharp increases in interest rates — sometimes when lower rates would have been appropriate given the prevailing economic conditions. The measured approach to lowering overnight rates during the last six months appears to have helped minimize uncertainty, thereby facilitating the easing in monetary conditions.

Chart 12

Monetary Conditions Index

Wednesdays, January 1987 = 0

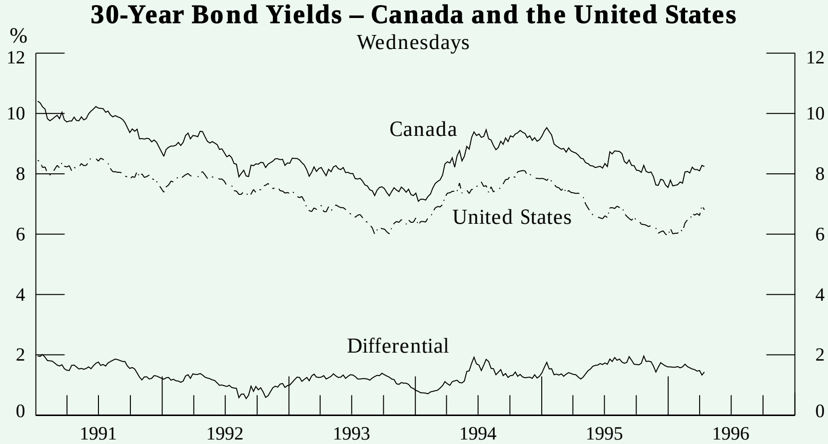


The premiums that medium- and long-term borrowers of Canadian dollars have had to pay relative to borrowers of U.S. dollars have begun to decline but remain relatively high, indicating that investor uncertainty has not disappeared. For example, the differential between Canadian and U.S. long-term yields has fallen below 1 1/2 per cent (Chart 13). This is down from the peak of 2 per cent prior to the Quebec referendum, but still significantly above the average of about 1 per cent during the 1970s and 1980s — a period when the differential incorporated a higher inflation rate in Canada than in the United States.

Chart 13

30-Year Bond Yields – Canada and the United States

Wednesdays



5. The Outlook for Inflation

In assessing the outlook for inflation, the Bank must consider the implications of various factors — including the external economic environment, consumer and business confidence and monetary conditions — for the future course of aggregate demand. It also looks at information on measures of inflationary expectations and at the pace of monetary expansion to shed light on the future path of output and inflation.

Aggregate demand and supply

External demand should continue to contribute to Canada's output growth.

The most important element in Canada's external economic environment is the U.S. economy, which grew by 1.3 per cent during 1995. The year-end weakness in the U.S. economy continued in the early part of 1996 as a result of a series of federal government shutdowns and adverse weather conditions. However, as these temporary factors have disappeared and as domestic demand responds to the easing in short-term interest rates, the U.S. economy appears to be returning to a path of steady growth.

While economic expansion in the major European countries slowed during 1995, the Japanese economy began to show signs of renewed strength towards year-end. A general firming trend is anticipated among the major overseas countries during 1996, sustained in many cases by an easing in monetary conditions. In addition, continued expansion in the emerging markets of Southeast Asia is expected, as is a recovery in Latin America.

With further increases in supplies and ongoing reductions in stocks by users, prices for pulp and paper may continue to decline over the near term. The prices of both crude oil and natural gas should fall back as weather conditions moderate. Nevertheless, on average, the prices of other industrial commodities are expected to remain firm at high levels consistent with a solid pace of expansion among the major industrial countries.

The positive contribution of external demand to the expansion of the Canadian economy should continue in the first half of 1996. This will be reinforced by the strong competitive position of Canadian industry, which favours both export growth and further substitution of domestic production for imports.

Although employment uncertainty and efforts to increase savings may somewhat restrain growth in household spending ...

Domestic demand is also expected to begin to strengthen, but only gradually. With many households concerned about both job prospects and their financial situations, expenditures on big-ticket items will likely remain relatively modest over the near term. In addition, fiscal restraint will continue to affect aggregate demand directly. Ongoing inventory correction could also restrain the pace of activity, although to a lessening extent, and business investment intentions point to some softness after several years of rapid growth. Nonetheless, there are signs of a gathering momentum in domestic demand. Recent growth in employment and income, stemming partly from the expansion of net exports, should encourage household spending. The significant easing in monetary conditions since last spring should also begin to improve confidence and provide an important boost to domestic demand. Indeed, data on retail sales and sales of existing homes for the early part of the first quarter indicate that a recovery in household spending is under way. And with fiscal consolidation proceeding at all levels of government, risk premiums in interest rates along the yield curve have begun to decline and individuals have become less concerned about the possibilities of future tax increases.

... the pace of economic expansion in Canada should pick up in coming months.

All told, external and domestic factors suggest that economic activity will expand faster in the first half of 1996 than in 1995. However, the factors at work also suggest that slack in the economy will not be taken up in any significant way until the second half of the year. Recent private sector forecasts are broadly consistent with this scenario. These forecasts suggest that total demand (in volume terms) will expand by slightly under 2 per cent on an annual average basis in 1996, with a profile pointing to a strengthening in the pace of activity to around 3 per cent at annual rates in the second half of the year.

Excess supply will nonetheless continue to place downward pressure on inflation.

This analysis suggests that the downward pressure on the trend of inflation coming from excess supply will persist through the year. Similarly, labour market conditions will continue to contain wage pressures. It is also expected that stronger economic expansion this year will lead to renewed productivity growth, which will help keep overall cost increases low.

Temporary factors affecting inflation

The effects of past exchange rate and commodity price movements on consumer prices should continue to abate.

The pressure on core inflation from past depreciations and earlier commodity price increases should continue to abate over the next few months. Stabilization in the value of the Canadian dollar over the past year, together with recent declines in the prices of many industrial materials (especially pulp), is easing the pressure on core inflation from these sources. Furthermore, anecdotal evidence continues to suggest that competition in the Canadian retail marketplace remains intense, with strong consumer resistance to price increases.

Part of the decline in core inflation observed since November 1995 may have represented temporary discounting by retailers in an effort to clear unwanted stocks, especially seasonal items. Once retail inventories return to more normal levels, and to the extent that household demand starts to gather some strength, some of the recent reduction in core inflation that came from this discounting may be reversed.

On balance, the upward pressure on core inflation from transitory factors should continue to ease in coming months.

Measures of inflation expectations

Expectations of inflation continue to decline.

The formation of expectations can play an important role in the dynamics of inflation. For example, changes in the exchange rate or in commodity prices, instead of just affecting the price level, can influence the trend of inflation through their impact on expectations. Over the past year, however, such relative price movements seem to have affected core inflation only temporarily, and short-term inflation expectations have subsequently begun to fall back. In the December quarterly survey of Canadian business confidence conducted by the Conference Board, 83 per cent of respondents expected inflation to be 2 per cent or less over the near term, compared with 72 per cent in the previous survey. In the Conference Board's March quarterly *Survey of Forecasters*, it was anticipated that CPI inflation would average about 1.6 per cent in 1996, down from just under 2.5 per cent six months ago, and would edge up to just under 2.0 per cent in 1997. Longer-term inflation expectations reported in the surveys have also fallen into line with the midpoint of the inflation-control target range, indicating the growing credibility of monetary policy (Technical Box 4).

Long-term inflation expectations can also be gauged by looking at the yield differential between long-term conventional (or nominal) and Real Return Government of Canada bonds (Chart 14). While this differential is affected by a number of factors other than inflation expectations, the influence of these other factors probably changes slowly.[4]

4. Two factors would tend to widen the differential between conventional and Real Return bonds. One is a premium on conventional bonds for inflation uncertainty. The other is that Real Return Bonds would typically attract a clientele with greater risk aversion to inflation and higher inflation expectations. A third factor, acting in the opposite direction, is that the yield on Real Return Bonds incorporates a premium to compensate investors for the liquidity risk associated with the small size and low trading activity of the Real Return Bond market.

Technical Box 4

Target Inflation and Expectations

Inflation-control targets can help anchor inflation expectations. The more credible the targets, the more they reduce the risk that relative price increases stemming from exchange rate or other temporary shocks will generate expectations of higher trend inflation. The adjustment of expectations to targets may take time because credibility is earned only gradually in light of the actual evolution of inflation and the perceived commitment of the authorities. An examination of the profile of inflation forecasts over the 1990s illustrates how expectations have adjusted to the Bank's targets.

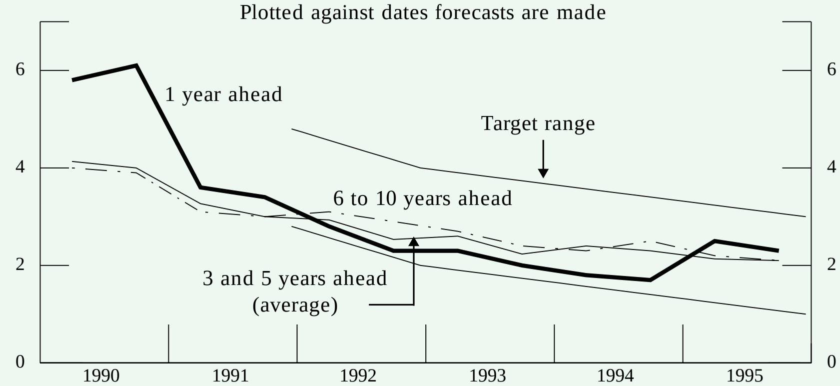
Both the Conference Board's *Survey of Forecasters* and Consensus Economics' *Consensus Forecasts* show that expectations of future inflation declined fairly steadily from over 4 per cent in the first half of 1990 to a little over 2 per cent by the second half of 1995, with similar profiles at prediction horizons ranging from one year to 6 to 10 years.[1]

However, the fact that medium-term expectations remained above the midpoint of the target range for some time is consistent with expectations adjusting only gradually to the targets. In the first half of 1992, for instance, expected inflation rates for 1995 and 1997 were still around 3 per cent, well above the target midpoints for those years. However, by the second half of 1995, expectations at the 3- and 5-year horizons had been trimmed to roughly 2 per cent, broadly consistent with the midpoint of the announced range through 1998.

While the adjustment of medium-term expectations to targets was probably encouraged by the actual experience of a declining trend in inflation, short-term expectations were sensitive to short-run movements in inflation. Changes in expectations at the 1-year horizon, for example, echoed changes in current inflation in 1994 and 1995, but expectations at longer horizons remained on a fairly stable downward trend. This suggests that in the last two years, forecasters have tended to discount deviations of current inflation from the midpoint of the target range as temporary developments.

Inflation Expectations at Various Horizons*

Plotted against dates forecasts are made



* Based on various surveys of consumer price inflation by Consensus Economics Inc.

1. In 1990, inflation expectations for 1991 reached 6 per cent, owing to the planned introduction of the GST, but expected inflation for 1992 and subsequent years was about 4 per cent.

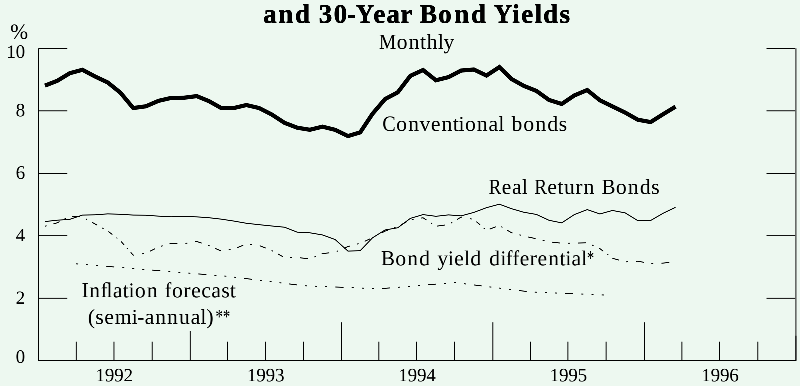
Thus, movements in that differential probably reflect changes in inflation expectations reasonably well. Moreover, in contrast to survey data, this measure of expectations is available continuously and reflects actual financial decisions based on forecasts of inflation by market participants.

The differential rose to a peak of about 4.6 per cent in mid-1994 and has come down since that date somewhat more rapidly than the longer-term forecasts of inflation. It currently stands at about 3 1/4 per cent — close to its lowest level since Real Return Bonds were first issued in 1991.

Chart 14

CPI Inflation Forecasts 6 to 10 Years Ahead and 30-Year Bond Yields

Monthly



* The differential is calculated using the appropriate compound interest formula.
** *Source*: Consensus Economics Inc.

Monetary indicators

Monetary aggregates point to low inflation and rising economic activity.

Monetary aggregates have been useful indicators of near-term output and price-level developments. For inflation, the broad aggregate M2+ (especially when adjusted for substitution into longer-term mutual funds) has been the best indicator (Chart 15). It has been growing at between 3 and 5 per cent annually for some time, which is consistent with inflation remaining in the bottom half of the target range.

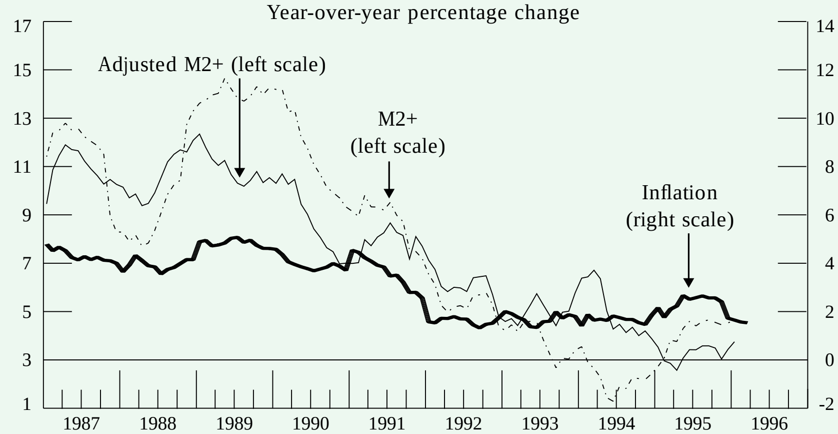
The most valuable indicator of near-term changes in output has been real M1. This narrow aggregate, which measures the real value of transactions balances in the economy, grew quite rapidly throughout 1995 (Chart 16). Some of this reflects rising deposits in current accounts in response to the more competitive interest rates paid on some of these accounts (Technical Box 4 in the November 1995 *Report*). However, even after allowing for this technical factor, the expansion of real M1 appears consistent with a pickup in GDP growth in the first half of 1996.

Recent work at the Bank has identified a statistical model in which M1 provides leading information about the medium-term trend of inflation. This model suggests that inflation will average under 2 per cent per annum over the next couple of years.[5]

Chart 15

Core Inflation and Adjusted M2+ Growth*

Year-over-year percentage change

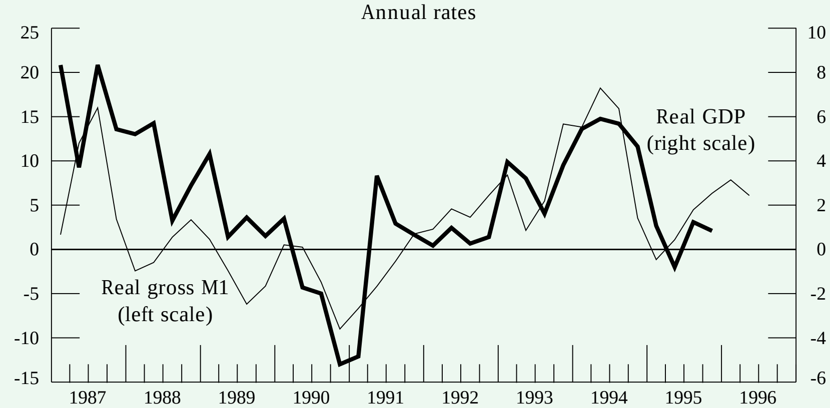


* Adjusted M2+ adds CSBs and mutual funds at financial institutions to M2+.

Chart 16

Real GDP Growth and Real Gross M1 Growth*

Annual rates



* Two-quarter moving average of growth of real gross M1, one quarter earlier

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5. In the spring 1996 issue of the *Bank of Canada Review*, the article "Recent developments in monetary aggregates and their implications" by Louis-Robert Lafleur and Walter Engert summarizes recent econometric research at the Bank on the M1 aggregate.

6. Conclusions

As anticipated six months ago in the last *Report*, the effects of past exchange rate and commodity price movements on inflation have begun to wane. Thus, both total and core CPI inflation have moved into the lower half of the inflation-control target range. This movement occurred somewhat earlier than expected, partly as a result of price discounting by retailers in response to weak consumer demand.

With a significant amount of excess supply in the Canadian economy, the outlook for the balance of 1996 is for the core rate of inflation to remain in the lower half of the inflation-control target range. This prospect is reinforced by a projected further unwinding of the temporary effects on inflation stemming from past movements in the exchange rate and commodity prices.

The near-term inflation outlook remains consistent with the Bank's inflation-control target range.

For the medium term, a key issue is whether the trend of inflation might move below the Bank's 1 to 3 per cent target range for inflation control. As discussed in the *Report*, a solid pickup in the pace of activity through 1996 and into next year is expected to begin to take up economic slack. Nevertheless, the fact that this scenario would still leave a margin of excess supply in the economy points to the possibility of the trend of inflation falling below 1 per cent six to eight quarters into the future. This in turn would imply an easing in the desired *medium-term* path of monetary conditions. However, consideration must also be given to the possibility that, in response to the significant easing in monetary conditions that has occurred during the past six months, the economy could turn out to be much stronger, particularly if there were a pronounced turnaround in economic confidence among households. Some further monitoring of the flow of economic information may therefore be needed to come to a judgment on the balance of risks regarding the trend of inflation.

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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