BANK OF CANADA

Monetary Policy Report

– November 2000 –

The 1998 sterling silver proof dollar featured on the cover was designed by Adeline Halvorson and commemorates the 125th anniversary of the founding of the North-West Mounted Police. At the time of Confederation in 1867, Canada consisted of only four eastern provinces. In 1870, the government acquired a huge expanse of land from the Hudson's Bay Company. Plans to open the region to settlement required the suppression of the whisky trade and the establishment of peaceful relations with the Native peoples. In May 1873, the North-West Mounted Police force was created to bring law, order, and Canadian authority to the western frontier. The reverse of the coin features a mounted member of that early force, which, in 1920, became the Royal Canadian Mounted Police. The obverse bears the effigy of Her Majesty Queen Elizabeth II by artist Dora de Pédery-Hunt.

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MONETARY POLICY REPORT

— November 2000 —

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

One of the most important lessons that monetary authorities have learned through this process of analysis and experimentation is that there is no virtue or advantage in vague policy objectives and complex operating procedures. . . . Monetary policy does not need to be cloaked in secrecy or artificial intricacies to be effective. What is needed to get the job done are one clear objective and one simple instrument.

Gordon Thiessen
Governor of the Bank of Canada
Lecture to Faculty of Social Science
University of Western Ontario
17 October 2000

CONTENTS

Canada's Inflation-Control Strategy

Inflation control and the economy

- Inflation control is not an end in itself; it is the means whereby monetary policy contributes to solid economic performance.

- Low inflation allows the economy to function more effectively. This contributes to better economic growth over time and works to moderate cyclical fluctuations in income and employment.

The monetary policy instrument

- As of December 2000, announcements regarding the Bank's policy instrument—the Bank Rate, which establishes the top of the operating band for the overnight interest rate—will take place, under normal circumstances, on eight pre-specified dates during the year.

- In setting the Bank Rate, the Bank of Canada influences short-term interest rates to achieve a rate of monetary expansion consistent with the inflation-control target range. The transmission mechanism is complex and involves long and variable lags—the impact on inflation from changes in monetary conditions is usually spread over six to eight quarters.

The targets

- In February 1991, the federal government and the Bank of Canada jointly announced a series of targets for reducing inflation to the midpoint of a range of 1 to 3 per cent by the end of 1995. In December 1993, this target range was extended to the end of 1998. In February 1998, it was extended again to the end of 2001.

- By the end of 2001, the government and the Bank plan to determine the long-run target for monetary policy consistent with price stability.

Monitoring inflation

- In the short run, a good deal of movement in the CPI is caused by transitory fluctuations in the prices of food and energy, as well as by changes in indirect taxes. For this reason, the Bank focuses on the CPI excluding food, energy, and the effect of changes in indirect taxes. This measure is referred to as the *core* CPI.

- Over longer periods, the measures of inflation based on the total CPI and the core CPI tend to follow similar paths. In the event of anticipated 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.

1. INTRODUCTION

Demand continues to strengthen worldwide . . .

Over the last six months, most countries have continued to register strong economic growth. Recoveries have taken hold in many emerging-market countries, and the Japanese economy, while still fragile, is showing more consistent evidence of sustained expansion. In the euro area, growth has continued at a strong pace. The U.S. economy has also remained robust, but increases in official interest rates have contributed to some recent slowing.

The other major development internationally has been the sharp rise and volatility in world oil prices. Higher energy prices have already pushed up headline inflation rates in most countries and are likely to moderate the pace of economic expansion somewhat both this year and next.

. . . increasing the risk of higher inflation.

The combination of strong global demand and increased likelihood that oil prices will remain above previously expected levels has heightened the risk that inflation rates in major industrial countries will continue to move up. The prospect of higher inflation has already prompted many central banks to increase official interest rates.

Despite robust growth in the Canadian economy, core inflation has remained stable.

In Canada, output growth in the first half of 2000, at a rate of about 5 per cent, exceeded expectations. Despite this robust expansion, the trend of inflation has continued to come in below expectations. While there are signs that the economy has begun to slow, the momentum of demand is still expected to increase pressures on capacity and to raise core inflation to the midpoint of the Bank's 1 to 3 per cent target range, but this is now expected to occur later in 2001.

In this environment, there are three main areas of uncertainty for Canada's economic outlook: demand growth in the United States, the current level and prospective growth of Canada's production capacity, and world energy prices. Continued robust expansion of U.S. demand for Canadian exports could lead to inflationary pressures here. However, recent productivity gains and brisk investment in machinery and equipment raise the possibility that the economy's production potential may be higher than that incorporated into the Bank's outlook. Finally, the longer energy prices remain high, the greater the risk that they could feed into the prices of other goods and services and into inflation expectations.

This report includes information received to 30 October 2000.

2. Recent Developments in Inflation

***Core inflation has been lower than projected in the May* Report.**

While the inflation-control target range is specified in terms of the total consumer price index (CPI), for the purpose of policy implementation the Bank uses the CPI excluding food, energy, and the effect of changes in indirect taxes—the core CPI— as its operational guide (Technical Box 1). Since last March, core CPI inflation has remained in the lower half of the Bank's inflation-control target range and somewhat below the level projected in the May *Report*. At the same time, because of further substantial increases in energy prices, the rate of increase in the total CPI has continued to be well above that of core inflation.

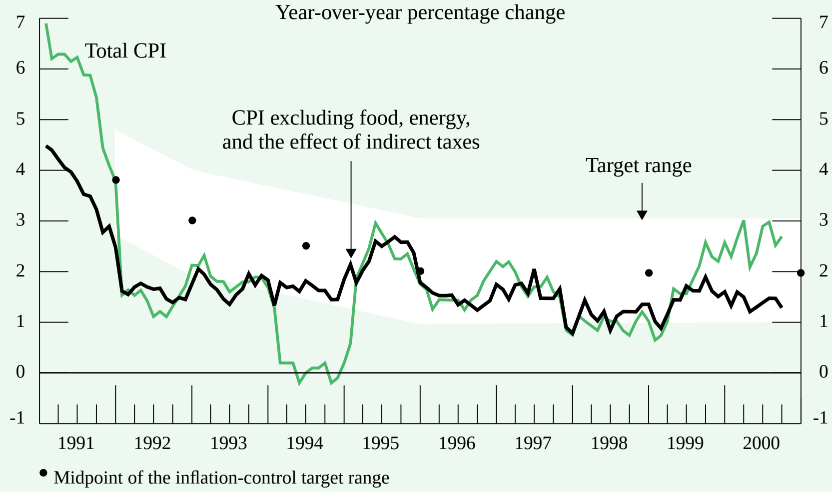
Inflation and the target range

The 12-month rate of increase in the core CPI was 1.3 per cent in September, compared with 1.5 per cent in March (Chart 1). Other statistical measures of the trend rate of inflation continued to bracket the core rate (Chart 2).

Chart 1

Consumer Price Index

Year-over-year percentage change



The persistent, unexpectedly low level of core inflation is still concentrated in the prices of durable and semi-durable goods. The prices of these import-intensive items fell over the past year, despite modest increases in the prices of imported non-energy consumer goods. This suggests that the phenomenon of a reduced pass-through of changes in the exchange rate to consumer prices

Technical Box 1

Total CPI, Core CPI, and Monetary Policy

The inflation-control targets established jointly by the government and the Bank of Canada are expressed in terms of the year-over-year rate of increase in the total CPI. This is the best available measure of the cost of living for most Canadian households and the most familiar and broadly accepted index of aggregate prices.

Although the targets are specified in terms of the total CPI, the Bank uses the core CPI—CPI excluding food, energy, and the effect of changes in indirect taxes—as the basis for policy actions. Core CPI inflation is, therefore, the *operational target* for monetary policy.

To a significant extent, short-run movements in the total CPI are caused by fluctuations in food and energy prices. Fluctuations in food prices, particularly for fresh fruit and vegetables, are often driven by weather-related supply disturbances. Energy prices, particularly gasoline and fuel oil, have been highly sensitive to shifts in the balance between the world demand and supply of energy commodities. Typically, these variations in food and energy prices have only a temporary effect on inflation. Similarly, level changes in indirect taxes, such as the tobacco tax cut in 1994, affect the year-over-year rate of increase of consumer prices for only one year (Chart 1). By removing these transitory influences, core CPI inflation provides a better measure of the underlying trend in inflation and is therefore a more appropriate guide for policy.[1] Monetary actions work slowly, and their effects are spread over one to two years. Efforts to counter temporary variations in the total CPI would be counterproductive, leading to greater volatility in interest rates and, hence, in economic activity, and potentially less stability in inflation over the medium term.

Provided fluctuations in food and energy prices and changes in indirect taxes have only temporary effects on inflation, the total and core measures of the CPI will move in a similar fashion over the medium term. Thus, achieving the target inflation rate for the core CPI for a sustained period of time should, in most cases, produce a similar outcome for the rate of increase in the total CPI. In the event of anticipated persistent differences in the trends of the two measures, the Bank would adjust the desired path for the core CPI so that the total CPI would come within the target range.[2]

By using the core CPI as its operational target, the Bank is accommodating the first-round effects of changes in food and energy prices and indirect taxes on the total CPI. It will not, however, accommodate second-round influences on prices that result from the spillover of the first-round effects to inflation expectations. Despite the sharp rise in energy prices over the past year, there is to date no evidence of such second-round effects on core CPI inflation, but the Bank will continue to monitor the evidence closely.

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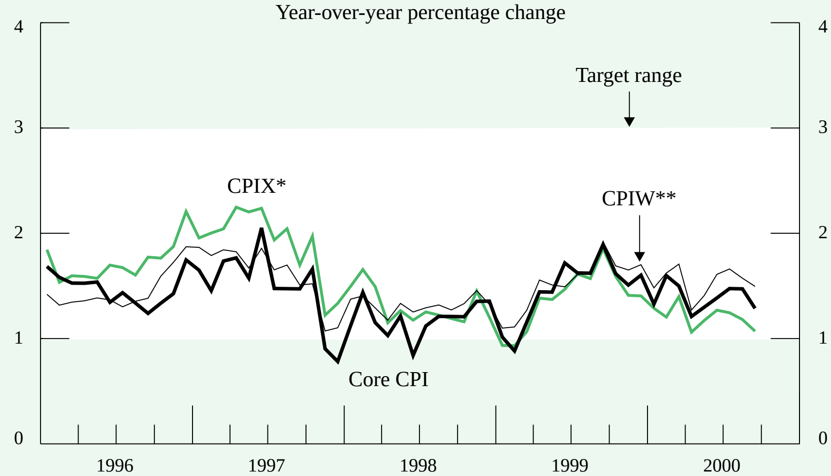
1. Alternative measures of underlying inflation have also been developed based on the statistical properties of the CPI components. Two of these alternative measures—CPIX and CPIW—are shown in Chart 2. See Laflèche (1997) for a discussion of these alternatives.
2. See Bank of Canada (1991b).

is continuing (Technical Box 2). Competitive pressures in the retail sector have also remained intense and have contributed to discounting—especially on motor vehicles and household appliances. More generally, the resulting negative surprise in core inflation is also consistent with the continued presence of some slack in product markets during the first half of the year.

Chart 2

Core CPI and Statistical Measures of the Trend Inflation Rate

Year-over-year percentage change



* CPIX excludes the eight most volatile components from the CPI as well as the effect of indirect taxes on the remaining components.

** CPIW adjusts each CPI basket weight by a factor that is inversely proportional to the component's variability.

Energy prices have pushed up the total CPI . . .

Although core CPI inflation has remained stable, the rate of increase in the total CPI has fluctuated between 2 per cent and 3 per cent over the past six months. Both the variability and the net upward movement in the rate of increase in the total CPI largely reflect surging energy prices. Strong growth in the global demand for oil, together with only modest increases in world production, has resulted in sharply higher oil prices. This has pushed up the retail prices of both gasoline and fuel oil.[1] A jump in natural gas prices at the producer level has also contributed to a marked rise in prices at the consumer level.

. . . but have had little impact on core inflation.

Despite these broad-based energy-price increases, the first-round effects of higher energy costs on the core CPI remain small, and there is no evidence of second-round effects from inflation expectations. The effect of the energy price increases on the level of the core CPI is estimated to have been less than 0.2 per cent

1. The current basket weights of the CPI energy components are: gasoline and fuel oil, 4.51 per cent; natural gas, 1.02 per cent; and electricity, 2.65 per cent.

Technical Box 2

Reduced Pass-Through into the Core CPI

The underlying trend of inflation is determined by inflation expectations and by the balance between overall demand and supply in the economy. In the short run, however, both the core and total CPI are also affected by changes in the relative prices of key goods and services, either directly or indirectly. Two particularly important relative prices are the exchange rate—the relative price of the Canadian dollar vis-à-vis other currencies—and the prices of energy commodities relative to other goods and services.

The impact of persistent changes in the exchange rate on the core CPI has traditionally been estimated at about 20 per cent of the percentage change in the Canadian dollar. This corresponds roughly to the import content of the 1986 core CPI basket of goods and services. Since the import share of the core CPI has risen from about 15 per cent in 1976 to about 27 per cent in 1997, one might have expected the direct effect of the *pass-through* of exchange rate changes to the core CPI to have risen as well. Instead, it seems to have diminished since the mid-1980s, based both on econometric evidence and on event analysis.[1] Two episodes of significant Canadian dollar depreciation (the first between the fourth quarter of 1991 and the end of 1994, and the second between mid-1997 and the end of 1998) indicate that the cumulative percentage change in the prices of goods with high import content was much less than would have been expected based on the exchange rate movement and the change in the price of comparable goods in the United States.[2] Studies of major depreciations in other countries (such as the United Kingdom and Sweden) have also found relatively little exchange rate pass-through to consumer prices during the 1990s (Cunningham and Haldane 1999).

Various explanations for the low exchange rate pass-through in the first half of the 1990s, such as the effects of major restructuring in the retail sector, were put forward. These explanations are less useful in explaining why low pass-through is apparently continuing in Canada and why it has been a common experience in many industrial countries. It may well be that the low-inflation environment itself is changing price-setting behaviour. When inflation is low, and the central bank's commitment to keeping it low is highly credible, firms are less inclined to quickly pass higher costs on to consumers in the form of higher prices. Indeed, empirical evidence suggests that lower inflation has reduced the persistence of inflationary shocks (Taylor 2000). If changes in relative costs and prices, such as fluctuations in the cost of imported goods and services, are not viewed as persistent, they are less likely to affect inflation expectations and, hence, the longer-term inflation rate.

The low-inflation environment may also have implications for the lower pass-through of energy prices into core inflation, although empirical evidence on this is limited. To date, the pass-through into the core CPI of the sharp rise in crude oil prices since late 1998 has been small when compared with the estimated long-run effect.[3] For example, the increases in the prices for air and truck transportation have been smaller than would have been predicted on the basis of the share of energy costs in the total costs of these services.

---

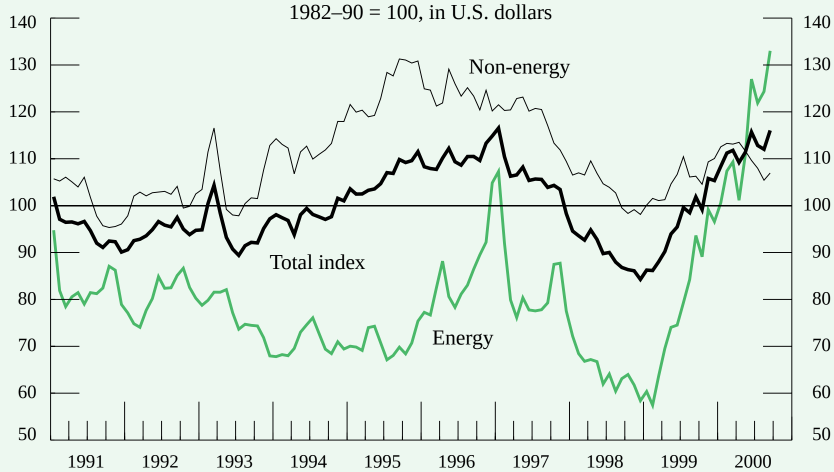
1. Fillion and Léonard (1997) found that the exchange rate pass-through coefficient in a Phillips-curve model was considerably higher during the high-inflation period of 1974–82 than during times of low inflation. This has been confirmed in an updated estimation of the model.
2. For a discussion of the first episode, see Laflèche (1996–97).
3. See Technical Box 1 in the May 2000 *Report* for a discussion of the estimated long-run effects.

since the end of 1998 and less than 0.1 per cent over the past year. This increase largely reflects first-round cost-based effects on the prices of interurban transportation. The phenomenon of low pass-through, also evident in the effects of exchange rate changes on the core CPI, may partly reflect the increased credibility of low-inflation policies (Technical Box 2).

Chart 3

Bank of Canada Commodity Price Index

1982–90 = 100, in U.S. dollars



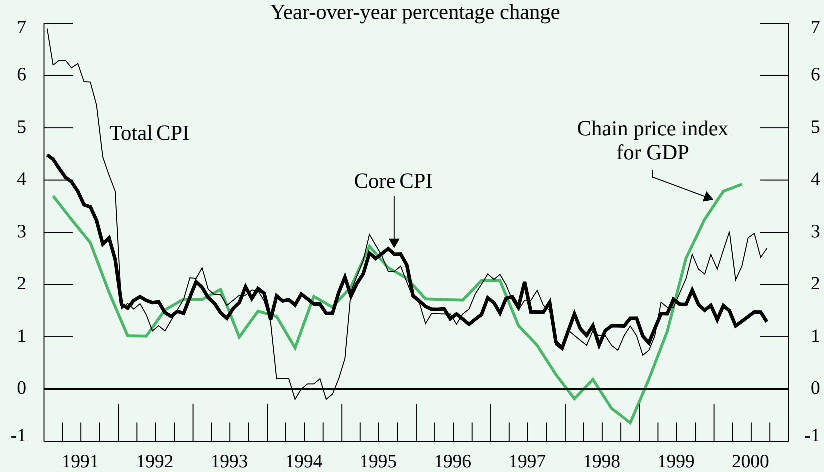
After rising considerably in 1999 and into early 2000, the prices of non-energy commodities have eased since the beginning of May, in spite of the continued strong expansion of the global economy (Chart 3). The appreciation of the U.S. dollar against major currencies has been an important factor impeding further recovery in the U.S. dollar price of many commodities. Moreover, ample supplies have led to a decline in the prices of agricultural commodities. Lumber prices have also come under considerable downward pressure, because of slower growth in U.S. construction activity and excess capacity in the industry.

The substantial gains in the prices of Canada's energy commodity exports over the past year, together with the increase in the prices of non-energy commodities through to the end of the first quarter of 2000, largely explain why the annual increase in the chain price index for GDP (a broad price measure of the goods and services produced in Canada) remained well above that of core inflation at mid-2000 (Chart 4). Federal pay-equity payments also boosted the level of the chain price index for GDP by about 0.6 per cent in the second quarter.

Chart 4

Chain Price Index for GDP, Core CPI, and Total CPI

Year-over-year percentage change



Factors at work on inflation

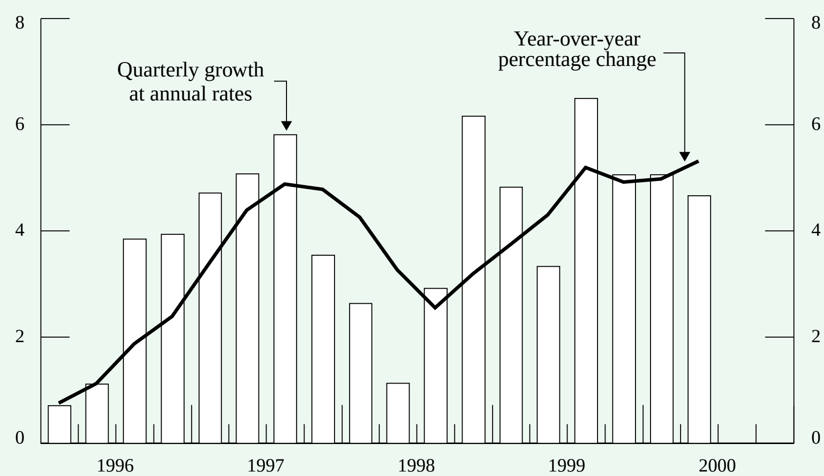
Aggregate demand

Real GDP growth remained well above that of potential output.

After a gain of 5.8 per cent at an annual rate in the second half of 1999, Canada's real GDP rose at 4.9 per cent in the first half of 2000 (Chart 5). Thus, while growth eased slightly, it was still strong and well above the growth of potential output. This growth in economic activity was led by increases in exports and in business investment in machinery and equipment. For the third quarter of 2000, current information points to continued robust growth in a range of 3.5 to 4.5 per cent.

Chart 5

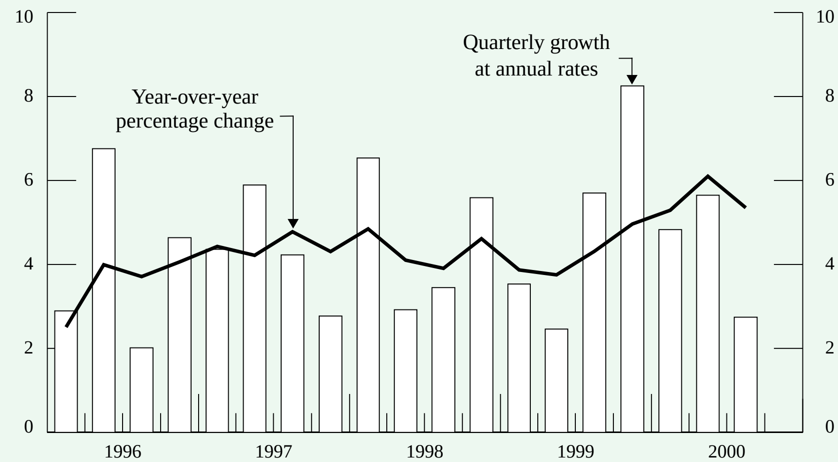
Real Gross Domestic Product in Canada



After growing rapidly in the first half of 2000, the U.S. economy slowed in the third quarter (Chart 6). Although growth of investment in equipment and software fell from the levels seen in previous quarters, it remained strong.

Chart 6

U.S. Real Gross Domestic Product



With solid U.S. aggregate demand and the favourable competitive position of Canadian industry, growth in Canada's exports, particularly shipments of high-technology equipment, remained buoyant in the first half of 2000. A further expansion in the volume of commodity exports also contributed to growth. Early information suggests that exports expanded less rapidly in the third quarter.

Gains in household spending continued to be substantial.

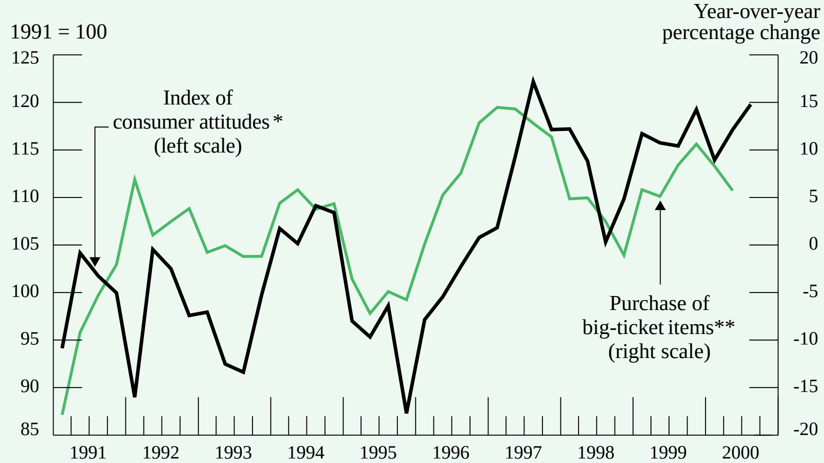
High levels of consumer confidence and further gains in real disposable income supported household spending in Canada, which continued to grow substantially in the first two quarters of 2000, although at a slower pace than in the second half of 1999 (Chart 7). In particular, expenditures on interest-sensitive items such as housing and motor vehicles fell back in the first half of the year. Information to date, however, suggests that spending on these big-ticket items recovered in the third quarter.[2] The increase in real personal income was supported by further gains in employment (Chart 8) and by the one-time effect of the federal pay-equity settlements.[3]

2. Some of the decline in construction activity (both residential and non-residential) in the second quarter of 2000 was the result of a labour dispute in the Toronto area.

3. The federal pay-equity settlements are estimated to have added about 0.7 per cent to the level of personal income in the second quarter of 2000.

Chart 7

Consumer Confidence

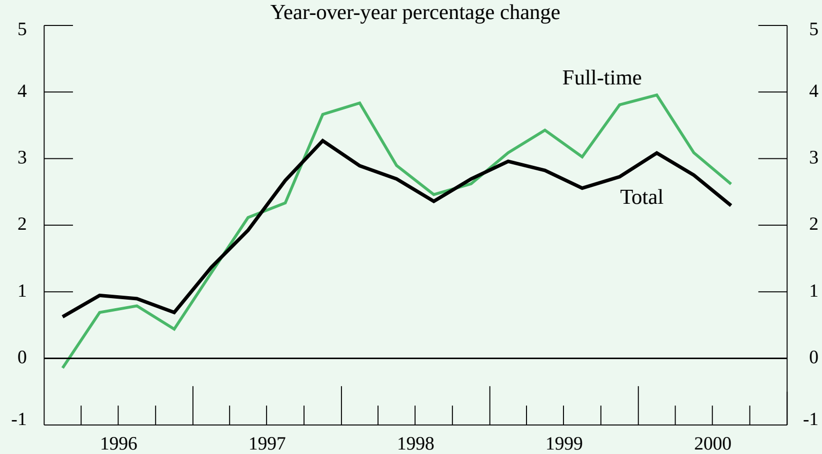


* Source: Conference Board of Canada
** Expenditures in constant dollars on consumer durables plus housing

Chart 8

Employment

Year-over-year percentage change



Last data point = September 2000

Investment in machinery and equipment continued to soar . . .

Capital expenditures by businesses rose rapidly in the first six months of this year, supported by further marked gains in profitability and high levels of confidence. Spending on machinery and equipment continued to soar, with growth in the first half of the year averaging over 23 per cent at an annual rate, up from the 16 per cent rate registered in the second half of 1999. This sustained increase in investment reflects the continued surge in demand for computers and related high-technology equipment.

Spending on structures, especially by the oil and gas sector, also rose considerably in the first half of this year. Early indicators for the third quarter of 2000 point to further robust investment growth.

Against a background of vigorous demand, inventory investment edged down in the first half of 2000, suggesting that some of this strength was unanticipated.

. . . contributing to another marked gain in import volumes.

Imports continued to expand sharply in the first six months of 2000, chiefly because of the heavy business investment in machinery and equipment. Imports of industrial materials also rose considerably because of the marked increase in output needed to meet buoyant export demand.

Since imports rose somewhat less than exports, the trade surplus was up slightly in volume terms. The terms of trade increased still further, largely because of rising energy prices. Thus, the current account balance (in dollar terms) improved considerably in the first half of this year, averaging a surplus of 1.7 per cent of GDP. Preliminary data suggest that the current account position in the third quarter of 2000 likely remained strong, with further gains in the terms of trade offsetting a reduction in the real trade balance.

Cost control

Wage increases appear to have risen to about 3 per cent.

Wage developments are particularly important when monitoring changes in aggregate costs, since labour costs account for more than half of total costs. According to available indicators, wages appear to have increased by about 3 per cent in the first half of 2000. Given recent growth in labour productivity, the underlying rise in labour costs remains consistent with core inflation staying well within the inflation-control target range.

The year-over-year increase in the average hourly wage (excluding overtime) for permanent workers was 3.5 per cent in the third quarter of 2000, up from 3.0 per cent in the fourth quarter of 1999. Another broad measure of wage change, the underlying year-over-year increase in labour income per person-hour, was about 3 per cent in the second quarter of 2000.[4] The average annual wage increase in the unionized private sector was 2.3 per cent in the first eight months of 2000, down slightly from the average gain of 2.6 per cent last year (Chart 9).

4. The underlying year-over-year rise in labour income per person-hour excludes the effect of the federal government pay-equity settlements, which added 1.1 per cent to the level of aggregate labour income in the second quarter.

Labour productivity, as measured by output per person-hour, strengthened considerably in the first half of 2000, increasing by over 2.5 per cent from the second quarter of 1999 to the second quarter of 2000 (Chart 10). The substantial gains in business expenditures on machinery and equipment in recent years may be starting to affect the trend rate of labour productivity growth.[5] This improvement in the growth of output per worker helped hold the increase in unit labour costs (excluding the effect of the federal pay-equity settlements) at mid-year to just over 1 per cent on a year-over-year basis.

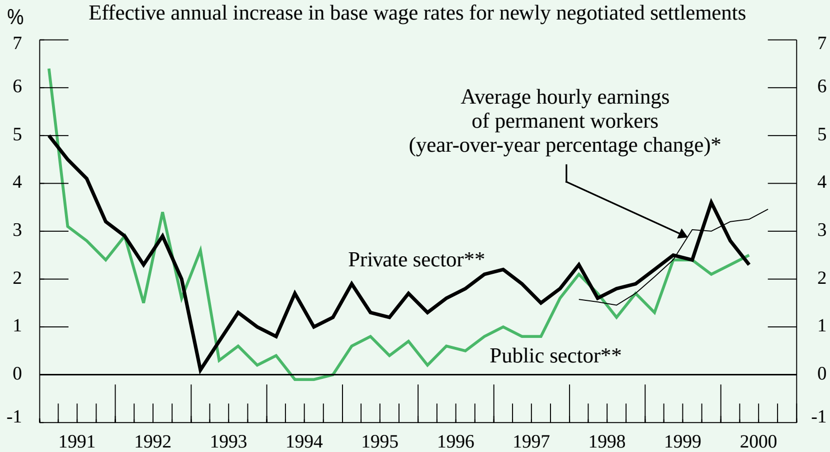
With growth in labour productivity strengthening . . .

. . . underlying unit labour costs rose only modestly.

Chart 9

Wage Settlements and Average Hourly Earnings

Effective annual increase in base wage rates for newly negotiated settlements



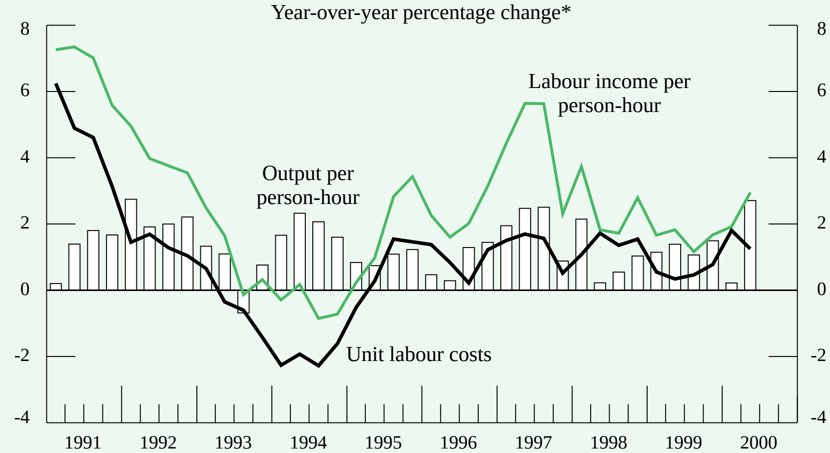
* Source: *Labour Force Information*, last data point plotted = September 2000
** Source: Human Resources Development Canada, last data point plotted = July/August 2000, average

5. Much of the growth in real GDP over the past year has been concentrated in high-technology goods and services, the prices of which have fallen considerably since 1992. The resulting contribution to aggregate growth from these high-technology items is overstated in the standard real GDP measure, which currently values output at 1992 prices. If the chain Fisher volume index for GDP were used instead—as is done for U.S. real GDP—the year-over-year rise in output per person-hour in the second quarter of 2000 would be reduced to 2 per cent. Nevertheless, whichever measure of aggregate output is used, the growth of labour productivity over the past year is well above the trend annual rate of growth over the 1975–99 period of about 1 per cent.

Chart 10

Unit Labour Costs and Labour Productivity

Year-over-year percentage change*



* Estimates of the year-over-year percentage changes for both unit labour costs and labour income per person-hour in 2000Q2 exclude the effects of the federal government pay-equity settlements.

Estimated pressures on capacity

The latest data provide a more optimistic assessment of the current level and prospective growth of potential output. At the time of the May *Report*, various indicators suggested that the Bank's conventional estimate of potential output may have been underestimating the actual amount of aggregate capacity in the Canadian economy. The most recent update of this measure of potential output (Technical Box 3) now suggests that the Canadian economy was operating slightly below capacity output at the end of 1999, instead of close to three-quarters of one per cent above its production capacity, as indicated in the last *Report*.

While the conventional measure of potential output suggests that the economy has moved into excess demand . . .

Nonetheless, the revisions to the conventional measure now suggest that the economy may have moved into a position of excess demand in the first half of 2000, since aggregate output growth continued to outstrip the estimated expansion of capacity (Chart 11).

As always, it must be emphasized that there is a large degree of uncertainty around these estimates of the output gap. And since the conventional measure adjusts with a lag, it carries an upside risk at times of increased technological change. Adding to this risk is the surge in investment in computer and information technology since 1996 and the more intense restructuring of Canadian businesses in the 1990s.[6] Therefore, the Bank follows a broad range of capacity indicators.

6. Kwan (2000) discusses the results of a recent survey of firms undertaken by Bank of Canada regional representatives to compare restructuring initiatives in the 1980s and the 1990s.

Technical Box 3

Revisions to the Conventional Measure of Potential Output

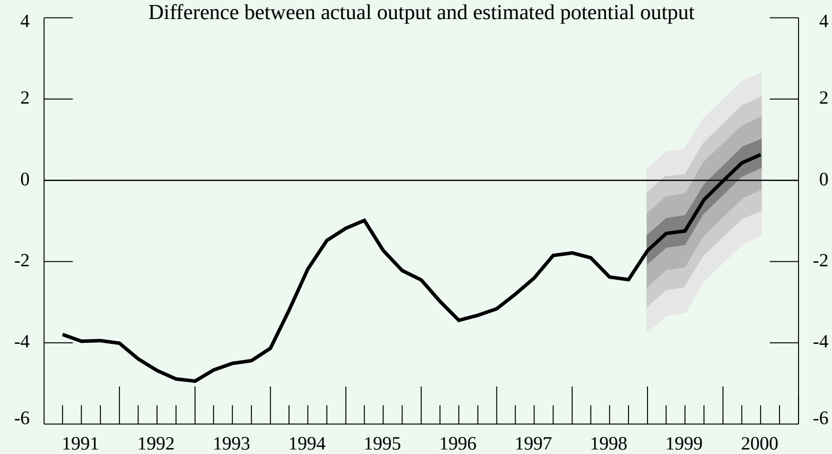
Potential output is the sustainable level of goods and services that the economy can produce without adding to inflationary pressures. Because potential output is not directly observable, it must be estimated. At the Bank, estimates of potential output are constantly updated on the basis of new data and results of ongoing research that attempts to identify trends in the determinants of potential output.

The most recent update of the Bank's conventional measure of potential output provides a more optimistic assessment of the economy's production capacity than was given in the May *Report*. The updated measure suggests that the economy was likely just below production capacity at the end of 1999. This upward revision to the level of potential output comes from a higher assessment of the trends in both labour availability and labour productivity growth in light of revised GDP data and recent developments in wage and price inflation.

The reassessment of the historical trend in labour availability partly reflects the strong rebound in the labour market since 1997, which has occurred without generating significant cost pressures. In particular, estimates of trend participation rates for youth and older workers were revised upwards in light of the stronger-than-anticipated rebound in labour force participation rates for these groups. Structural reforms in labour markets have also likely increased labour availability. In addition, a review of the recent growth in labour productivity suggests that its trend has been higher than previously estimated. However, the rebound in productivity growth remains within a normal range of variation.

The higher trends in the growth of labour availability and labour productivity, when combined with continued strong capital investment, raise the conventional projection for the growth rate of potential output in 2000, and over the next several years, to the 2.75 to 3.25 per cent range. This is higher than the 2.5 to 3.0 per cent range given in the May *Report*.

The conventional measure of potential output will continue to be updated as new information becomes available. Nevertheless, because of its reliance on historical data, the conventional measure adjusts to shifts in underlying trends with a lag. At a time of rapid technological change, this imparts an upside risk to conventional estimates of potential output. Judgments on the level of potential output relative to actual GDP must therefore rely on a broader set of capacity indicators and measures of inflationary pressures.



* The shading around the values of the estimated output gap shows (from darkest to lightest) confidence intervals of 25 per cent, 50 per cent, 75 per cent, and 95 per cent.

. . . there is still a risk that this measure under-estimates the economy's production capacity.

Some of these other indicators suggest that there was still slack in product markets during the first six months of this year. Chief among them is the fact that core inflation has been lower than expected. Furthermore, the ratio of unfilled orders to shipments in the manufacturing sector was largely unchanged over the past year and is below the level reached in 1998. In addition, robust growth in labour-force participation appears to be increasing the supply of labour as fast as demand, and underlying increases in unit labour costs have remained low.

A number of other indicators are more consistent with the view that the economy has now moved into excess demand. The measured rate of capacity utilization in the non-farm, goods-producing sector in the second quarter of 2000 was above the level reached in the late 1980s. There have also been reports of shortages of skilled labour, especially in the engineering, construction, transportation, and hospitality sectors. And there is a risk that, because of the increased credibility of low-inflation policies, pressures on capacity may now take longer to be reflected in actual price and wage developments.

Overall, the weight of the evidence does not confirm the view that the economy had moved into excess demand by mid-year, but it points to an economy that is operating close to full capacity.

3. Achieving the Inflation-Control Targets

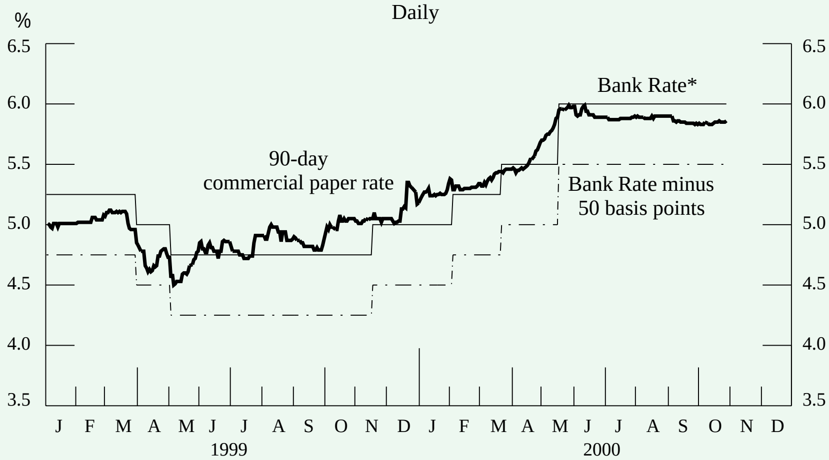
On 17 May, soon after the release of the May *Report*, the Bank of Canada raised the Bank Rate by 50 basis points to 6 per cent (Chart 12). This action was deemed necessary to keep the future trend of inflation near the midpoint of the Bank's target range of 1 to 3 per cent so that the Canadian economy could continue to grow at a sustainable rate. Since November 1999, the Bank Rate has risen by 125 basis points from the 4.75 per cent level maintained through much of last year.

The Bank raised short-term interest rates by 50 basis points to keep trend inflation within the target range.

Chart 12

90-Day Commercial Paper Rate and the Bank Rate

Daily



* The Bank Rate is the upper limit of the 50-basis-point operating band for the overnight rate.

The Bank's action in May, which followed a similar move by the U.S. Federal Reserve, was prompted by concerns about future pressure on capacity limits arising from strong international and domestic demand for Canadian products. Since the United States is a major source of demand for Canadian exports, the Fed's action in response to rapid growth in that economy underscored the continued risk that U.S. demand and inflation pressures could spill over into Canada. The Bank's decision to follow the Fed's move reflects the current similarities in cyclical conditions in the two countries, particularly the strong growth rates of aggregate demand. There are, nevertheless, some significant differences between the two. Since core inflation is lower in Canada than in the United States and since our economy has not been growing as quickly, or for as long, as theirs, the target for the Canadian overnight rate remains 75 basis points below the U.S. target rate for federal funds.

The timing and magnitude of policy rate increases in both countries had been widely expected in financial markets, so that most of the rise in 90-day commercial paper rates occurred prior to the central bank actions. Since then, 90-day paper rates have declined slightly, and financial market participants now generally expect rates to remain steady over the next few months. Market participants interpret recent data as indicating that the U.S. economy is slowing down, and they appear to believe that productivity gains will raise potential growth in both countries, reducing the need for further interest rate hikes.

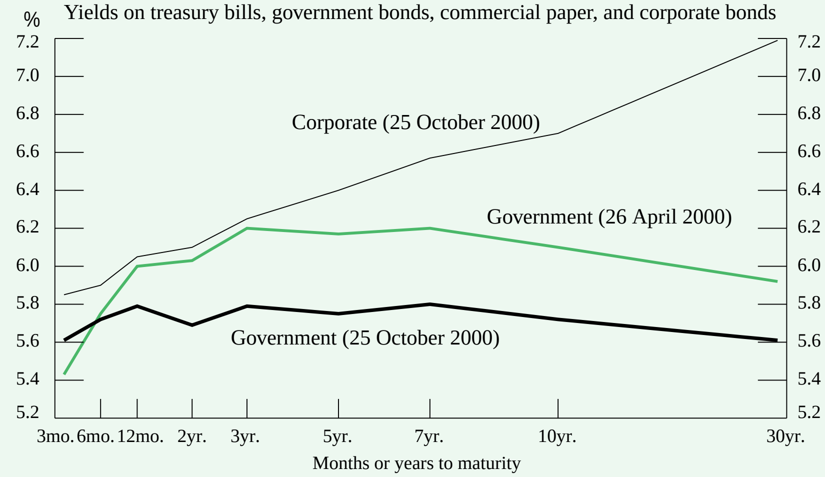
Bond yields declined as markets perceived lower inflation risks after central bank moves.

North American bond yields declined following the central bank moves, as tighter monetary conditions reduced the perceived risk of an increase in inflation. More recently, rising uncertainty in global financial markets has pushed U.S. yields down relative to Canadian yields, and Canada/U.S. spreads have turned slightly positive for maturities of 5 to 10 years. While actual and anticipated reductions in government debt continue to put downward pressure on long-term government bond yields, the inversion of the yield curve for longer-term bonds is slightly less pronounced than it was at the time of the May *Report*. The yield curve for Canadian corporate bonds, which has been less affected by the reduced supply of government debt, continues to have a normal positive slope (Chart 13).

Chart 13

Term Structure of Interest Rates in Canada

Yields on treasury bills, government bonds, commercial paper, and corporate bonds



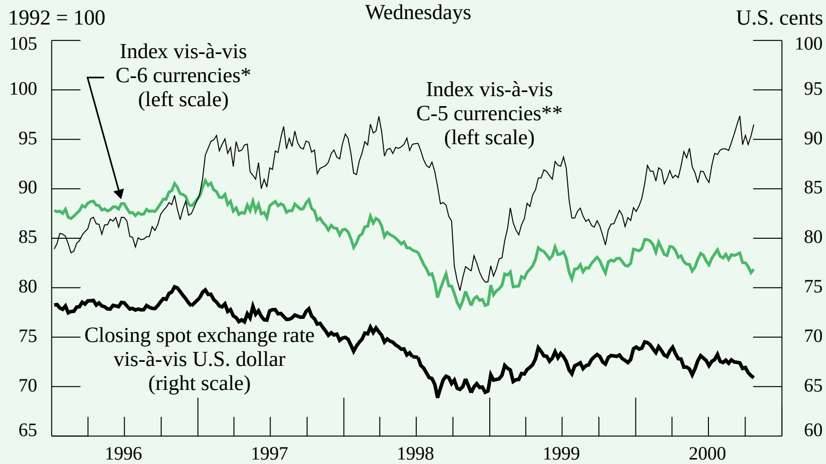
The Canada/U.S. exchange rate has generally fluctuated between 65.3 and 68.3 cents (US) since the May *Report* (Chart 14). The Canadian dollar has been affected by shifts in market expectations concerning the relative strength of the Canadian and U.S. economies, the prospects for Canada/U.S. interest rate differentials, and the recent volatility in global financial markets. Recent weakness in the prices of non-energy commodities may also have negatively affected the Canadian dollar. However, a low and stable inflation environment, the strength of real GDP, and the large current account surplus recorded in the second quarter have provided support to the Canadian dollar. The U.S. dollar has remained strong against most major currencies, as the U.S. economy continues its robust growth with low inflation and substantial productivity gains. More recently, it strengthened further, as nervous global investors have sought out U.S. assets. The Canadian dollar has also risen strongly against most other major currencies, gaining about 5 per cent against the British pound sterling since the beginning of the year and about 12 per cent against the euro.

While fluctuating against the U.S. dollar, the Canadian dollar has appreciated sharply against other major currencies.

Chart 14

Canadian Dollar Exchange Rate

Wednesdays



* C-6 currencies: U.S. dollar, euro, yen, U.K. pound, Swedish krona, and Swiss franc
** C-5 currencies: excludes U.S. dollar

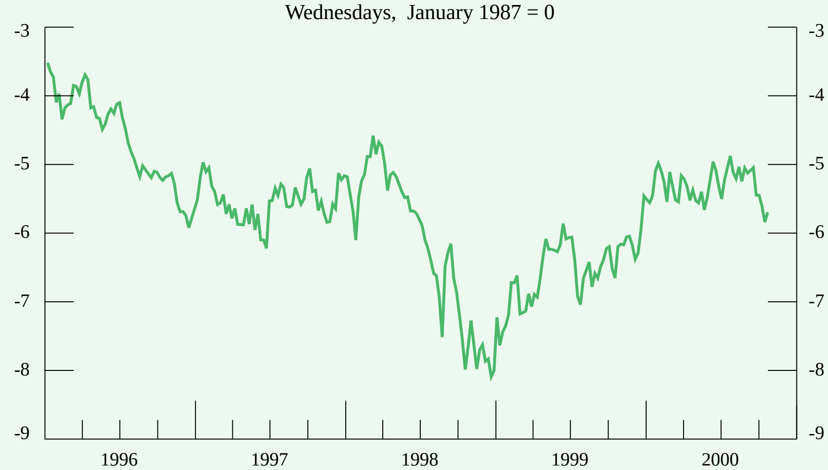
During most of the past six months, the Bank's monetary conditions index fluctuated in a range of -5.5 and -5.0. More recently, it has been in the -5.5 to -6.0 range, reflecting the fluctuation of the Canadian dollar against the U.S. dollar (Chart 15).

Beginning in December, the Bank is adopting a new system of pre-set dates for implementing Bank Rate changes (Technical Box 4). The new system will improve the implementation and effectiveness of monetary policy by focusing attention on Canadian economic conditions and fostering a better understanding of central bank decisions.

Chart 15

Monetary Conditions Index

Wednesdays, January 1987 = 0



Technical Box 4

Fixed Announcement Dates for Monetary Policy Actions

The Bank is adopting a new system of eight "fixed" or pre-specified dates each year for announcing changes to the Bank Rate. This system replaces the current approach in which the Bank Rate can be adjusted on any business day. Beginning with the first fixed announcement date in December, the Bank will be issuing a press release at 9 a.m. on each of the eight fixed dates, whether or not there is a change in the Bank Rate, to explain the key factors behind the decision. A system of eight dates is consistent with the flow of information that the Bank uses to gauge changing trends in the economy. Under the new system, the Bank retains the option of intervening between fixed dates, although it would exercise this option only in extraordinary circumstances.

The Bank believes that fixed announcement dates will make monetary policy more effective. Fixed dates will reduce the uncertainty in financial markets associated with not knowing exactly when a Bank Rate change may be announced and should contribute to the improved functioning of financial markets. With eight additional opportunities for the Bank to report on the economy and monetary policy, the new system should help market participants and the public to better understand the Bank's assessment of the economic situation in Canada and to anticipate the direction of monetary policy. In addition, since the Bank's schedule of fixed dates will differ from that of the Federal Reserve, more attention will be focused on Canadian economic and monetary circumstances leading to monetary policy decisions. Fixed dates will also provide a regular opportunity to emphasize the medium-term perspective of monetary policy and will generally increase the Bank's transparency, accountability, and dialogue with the public.[1]

Schedule of Upcoming Announcement Dates

Tuesday 5 December 2000
Tuesday 23 January 2001
Tuesday 6 March 2001
Tuesday 17 April 2001
Tuesday 29 May 2001
Tuesday 17 July 2001
Tuesday 28 August 2001
Tuesday 23 October 2001
Tuesday 27 November 2001

1. For more information on fixed dates, see the Bank's press releases of 19 September and 30 October 2000.

4. The Outlook for Inflation

Our analysis suggests that core CPI inflation in Canada will gradually rise and reach the midpoint of the Bank's 1 to 3 per cent target range in the second half of next year. Assuming that world oil prices do not rise further from the high levels observed in recent months, the annual rate of increase in the overall CPI is expected to decline gradually towards the 2 per cent mark over that period. However, several key uncertainties surround this projection.

International background

Strong global economic growth and higher energy prices are tilting the balance of risks towards increased inflation pressures.

Since mid-1999, global economic growth has become more synchronized and is showing strong momentum. This development is tilting the balance of risks towards greater inflation pressures and could lead to increases in policy-determined interest rates in some countries. Higher energy prices have not yet had a significant impact on world output growth. The longer energy prices remain high, however, the more likely it is that they will adversely affect growth in countries dependent on oil imports. High energy prices also add to the inflation risk through their possible effect on inflation expectations in some countries. On the other hand, credibility gains made by various monetary authorities in recent years should help reduce this risk.

The recovery of many emerging-market economies from the 1997–98 financial crisis continues. Strong increases in the volume of exports, particularly to the United States, initially accounted for much of the recovery in these economies. More recently, however, domestic demand has strengthened significantly.

Economic activity in Europe is expected to remain solid.

In the euro area, the pace of real GDP growth stabilized at about 3.5 per cent in the first half of 2000, and activity is expected to remain solid in coming quarters as domestic demand firms and the depreciation of the euro exerts a stimulative effect on exports. The Bank expects real GDP growth in the euro area to be around 3.5 per cent in 2000 and 3 per cent in 2001.

The Japanese economy is improving but remains fragile.

The Bank of Japan raised its target for the overnight interest rate to 0.25 per cent in August, thus moving away from its "zero-interest-rate policy." The reduction in monetary stimulus was motivated by the surge in output growth in the first half of 2000 led by strong business investment and buoyant demand for Japanese exports. The Japanese economy is still fragile, however: the financial sector requires further restructuring, and household spending remains weak. Japan's recovery could be particularly affected by high oil prices because of its dependence on imported oil. The Bank expects real GDP growth in Japan to be about 2 per cent in 2000 and 1.5 per cent in 2001.

The U.S. economic expansion is slowing.

Although the momentum of aggregate demand in the U.S. economy remains strong, recent data indicate that overall growth has slowed, particularly in housing and non-residential construction. While past interest rate increases are expected to further moderate growth, the high level of economic activity and a tight labour market continue to pose an inflationary risk. Real GDP growth in the United States is expected to be about 5 per cent in 2000 and 3.0 to 3.5 per cent in 2001. While higher oil prices could further reduce U.S. real GDP growth, they could also prompt higher interest rates if inflation expectations are affected.

Non-energy commodity prices should recover modestly.

Even with modest recourse to the U.S. strategic petroleum reserve, crude oil prices are expected to remain relatively firm through the winter but may ease as warmer weather arrives. Prices for non-energy commodities are expected to move up, in line with growth in global demand.

Aggregate demand and supply in Canada

Canadian export growth should ease.

Economic prospects for the United States are an important element in the economic outlook for Canada. In particular, growth in Canadian exports is expected to ease over the next 18 months, in line with the projected slowing of the U.S. expansion. Reduced stimulus from the earlier depreciation of the Canadian dollar, as well as the recent weakness in non-energy commodity prices, should also act in the same direction. Nonetheless, both the growth and level of exports are expected to remain high. The strength in energy prices may also contribute to slower growth in the manufacturing sector, but could boost investment, exploration, and exports by energy producers.

Growth in household spending should remain robust . . .

Household spending in Canada is expected to grow at a robust pace, supported by favourable labour market conditions and recent decreases in personal income tax rates. Recent equity market volatility and the effects of higher energy prices on disposable incomes could, however, temper spending plans.

. . . while business investment may advance at a more moderate pace.

The growth of business investment is expected to fall back from the very strong pace recorded over the past several quarters, but should continue to contribute strongly both to aggregate demand and to the economy’s capacity to produce. Import growth is also expected to ease, chiefly reflecting less rapid increases in exports and in the demand for investment goods.

The most recent consensus among private sector forecasters is for real growth in Canada’s GDP (on an annual average basis) of 4.7 per cent for 2000 and 3.5 per cent for 2001. At the time of the

May *Report*, the consensus forecast called for growth of 4.1 per cent in 2000 and 3.1 per cent in 2001.

Output growth of close to 5 per cent is expected in 2000 . . .

With the upward revision to growth in the second half of 1999 and the relatively strong performance of the economy in the first half of this year, the Bank expects Canada's output growth in 2000 to be close to 5 per cent.[7] For next year, the Bank sees output growth in Canada in a range of 3 to 4 per cent. This is higher than the projected range for growth in potential output—2.75 to 3.25 per cent. This outlook implies that the Canadian economy would continue to take up remaining slack in the second half of this year and could move into excess demand in late 2000 or early in 2001. The outlook, however, also incorporates a profile of decelerating output growth through 2001, consistent with the projected slowdown of the U.S. economy.

. . . slowing to between 3 and 4 per cent in 2001.

When projecting the balance between demand and supply for 2001, there is uncertainty not only about the current *level* of potential output, but also about the *growth rate* of future production capacity. While the growth of potential output could ratchet up if the benefits of new information and communications technology spread through a wide range of Canadian industries, the Bank is inclined to take a cautious approach to projecting a higher trend rate of potential growth.

Measures of inflation expectations

Higher energy prices have not increased longer-term inflation expectations.

Public expectations about the increase in the CPI over the near term have risen slightly as a result of higher energy prices. To date, however, this has not significantly affected longer-term inflation expectations, which remain close to 2 per cent.

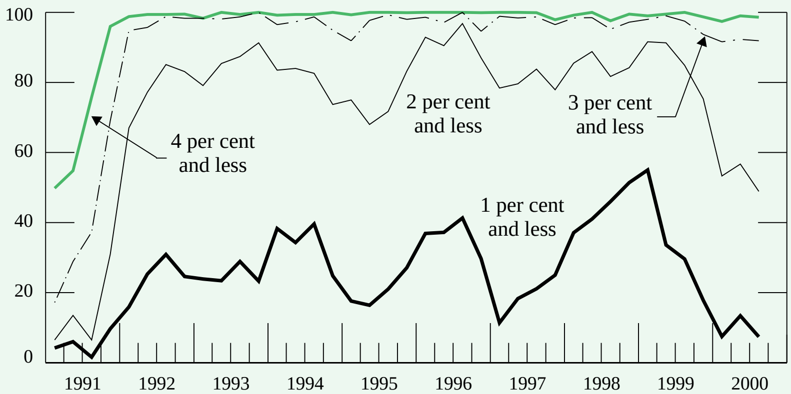
The Conference Board reported in its autumn *Index of Business Confidence* that 49 per cent of its regular business survey respondents expected prices, in general, to increase over the next six months at a rate of 2 per cent or less, and 92 per cent expected a rate of 3 per cent or less (Chart 16). These percentages are down from a year ago, particularly for respondents expecting inflation of 2 per cent or less. The downward movement implies that expectations of short-term inflation have increased and are now centred closer to the midpoint of the Bank's target range. The average private sector forecast for the rate of increase in the total CPI is 2.7 per cent in 2000 (up from 2.3 per cent last spring) and 2.4 per cent in 2001 (up from 2.1 per cent last spring). Typical

7. In the Bank's August *Update*, real GDP growth this year was expected to be between 4.25 and 4.75 per cent on an average annual basis, slightly more than projected in the May *Report.*

Chart 16

Percentage Distribution of Expected Price Increases Over the Next Six Months

Quarterly

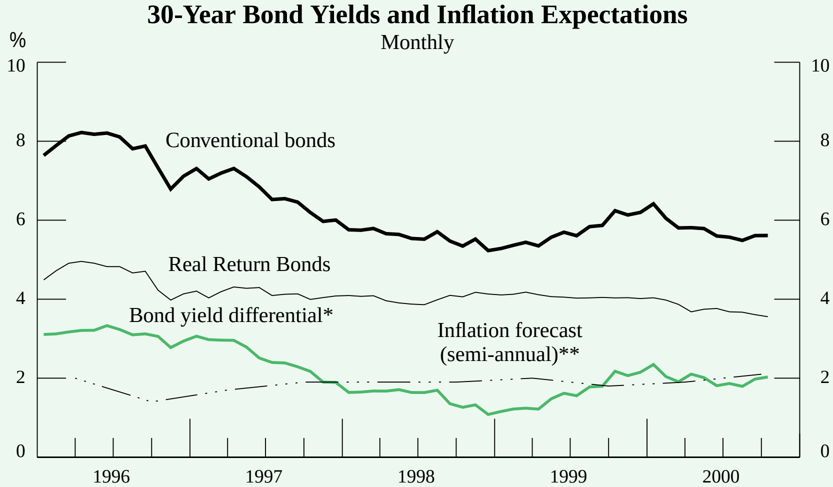


Source: Conference Board of Canada, *Index of Business Confidence*

Chart 17

30-Year Bond Yields and Inflation Expectations

Monthly



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

forecasts of longer-term inflation remain between 1.8 and 2.1 per cent, depending on the time horizon (Chart 17).

The differential between conventional bonds and Real Return Bonds has remained close to 2 per cent. The supply factors affecting bond markets have made it difficult to extract reliable information from this measure. It therefore cannot be inferred that long-term inflation expectations are exactly at the level implied by the differential. Nevertheless, the differential does suggest that investors are confident that there will not be a long-run pickup in inflation.

Other factors affecting inflation

Higher energy prices are expected to have only a small effect on core inflation.

The impact on the core CPI of this year's substantial hike in crude oil prices is still predicted to be small. So far, the price effects have been largely restricted to air fares and local transportation costs. While the risk of further pass-through of these higher costs to other components of the core CPI has increased because of their persistence, their effect is still expected to be modest. Competition in the retail sector is likely to remain strong, and firms may try to economize on the use of energy.

Assumptions about crude oil prices, however, significantly affect the near-term outlook for the total CPI. If crude oil prices are about US$30 per barrel for West Texas Intermediate by year-end, the year-to-year rise in the total CPI should ease to about 2.5 per cent in the first quarter of 2001. By comparison, prices of US$35 per barrel and US$25 per barrel would imply a year-over-year increase in the CPI of about 3.4 per cent and 1.7 per cent, respectively, in the first quarter of 2001.

Wage increases are expected to be in line with productivity growth and projected inflation. The Bank's September survey of industry associations suggests that wage increases will rise over the next 12 months. The implications of higher wage growth for unit labour costs should be offset, to some extent, by rising growth in labour productivity, with the rate of increase in unit labour costs rising to a level consistent with projected inflation.

Other indicators of inflation pressures

Asset prices tend to be sensitive to expectations of inflation and economic growth. In the late 1980s, for example, a surge in housing prices preceded an upturn in core inflation.

In 1999, housing prices moved up noticeably, but there are some indications that activity in the housing market may be easing, partly in response to the increase in interest rates that has taken place since November 1999. The year-over-year rise in prices for existing homes (based on the Royal LePage index) was 5.1 per cent in the second quarter, down slightly from the rate observed at the end of 1999. On the other hand, the year-over-year increase in new home prices rose a little further to 2.4 per cent in August, largely because of higher costs for labour and construction materials.

Monetary and credit indicators

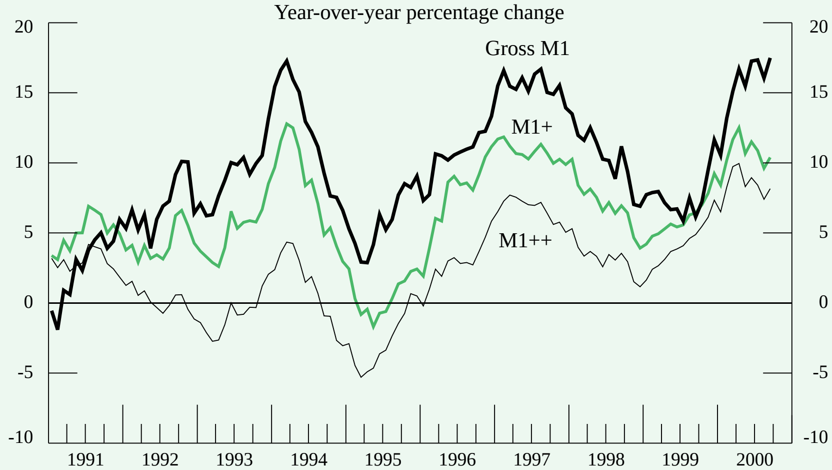
Growth in the narrow money aggregates has slowed somewhat in recent months from the very rapid pace recorded in early 2000, but it remains strong on a year-over-year basis (Chart 18). Year-over-year growth in gross M1 was about 17 per cent in September. Part of this strength, however, stems from factors that raised the growth of M1 relative to that of underlying transactions balances. Most notable in early 2000 was the increase in bank deposits of financial intermediaries. As Technical Box 5 explains, our best estimate of the growth in underlying transactions balances is about 6 to 8 per cent.

Money growth remains strong, indicating a robust economy and a small increase in underlying inflation.

Chart 18

Narrow Money Growth

Year-over-year percentage change



Growth in M1+ and M1++ also remains robust on a year-over-year basis at 10 per cent and 8 per cent, respectively, but at a considerably lower rate than that of M1. These aggregates are influenced, to some extent, by some of the special factors affecting M1.

When the special factors are taken into account, the recent pace of expansion in narrow money suggests that real GDP will grow at a rate of around 3.75 per cent in 2001. This is broadly consistent with the Bank's overall projection (Chart 19). The growth in narrow money aggregates also suggests that core inflation will be moving up to the midpoint of the target range towards the end of 2001.

Technical Box 5

Narrow Money Growth: M1 vs. Underlying Trend

M1 has grown by about 17 per cent in the last 12 months, but the Bank's best estimate of underlying growth in transactions balances is in the order of 6 to 8 per cent. That is, it is estimated that about 10 percentage points of the recent growth in M1 are due to special factors that pushed the growth rate of measured M1 considerably above the underlying growth of transactions balances. This box explains the reasoning behind this large gap.

One way to estimate the underlying growth in transactions balances is to identify and quantify the different special factors affecting M1, and then subtract these from the measured growth rate. A common source of distortion occurs when money balances not held to make purchases of goods and services are included in the M1 measure. One example of this type of distortion has been increased cash balances held with investment dealers for the purpose of making financial transactions. Another important distorting factor has been the growth of deposits at banks held by non-bank financial intermediaries. These are not transactions balances, since they are likely being held by financial intermediaries trying to offset various liabilities on their own books. Another type of distortion is the movement of transactions balances between accounts that are part of M1 and those that are not. This type of substitution significantly affected M1 growth in the second half of the 1990s, and may again be important in 2000, associated in part with the promotion of more competitive interest rates on a number of banks' chequing accounts. The broader aggregates internalize many of these movements in funds, and this is likely one reason why M1++ is growing at a more moderate rate than M1.

Another way to determine underlying growth in transactions balances is to use an estimate based on an econometric model of long-run money demand. The estimate of "adjusted M1" is based on the historical relationship between M1 and other economic variables.[1] Adjusted M1 is currently growing at about 7 per cent year-over-year.

When both methods give similar results as to the size of distortions, there is increased confidence in estimates of underlying growth. In the first quarter of this year, the gap between the year-over-year growth in M1 and adjusted M1 was very close in magnitude to our add-up of distortions—around 6 percentage points.[2] More recently, however, growth in deposits held by financial institutions and free-credit balances appear to be contributing only about 3 percentage points to growth. Nevertheless, we continue to believe that distortions are important. Therefore, our best estimate of underlying growth at present is based largely on adjusted M1 and is on the order of 6 to 8 per cent. This is also consistent with the current pace of growth of M1++.

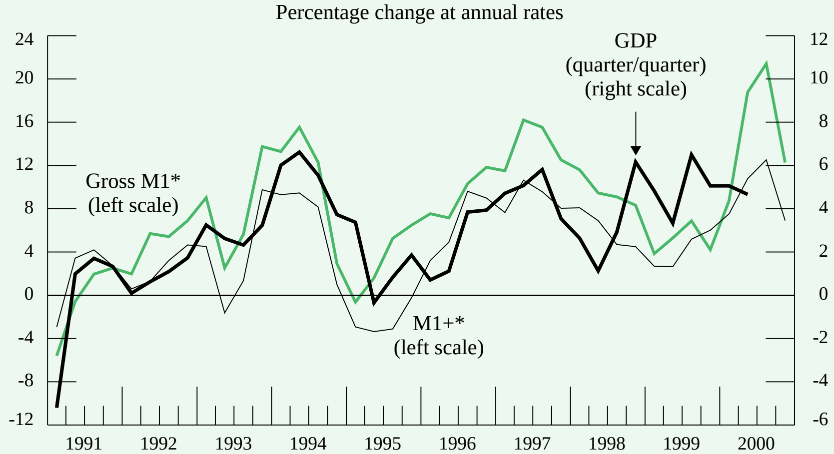
1. For more details, see Atta-Mensah (2000).
2. Note that these estimates are based on end-of-quarter data, which may differ from data based on quarterly averages.

The pace of expansion in the broad aggregate M2++ has been relatively stable over recent months. Year-over-year growth in September was 8.3 per cent (Chart 20). Growth in M2++ suggests a similar profile for core inflation as that implied by the narrow aggregates, consistent with inflation remaining within the target range.

Chart 19

Real GDP Growth and Growth of Real Gross M1 and M1+

Percentage change at annual rates



* Two-quarter moving average of growth in gross M1, M1+ (deflated by the core CPI), one quarter earlier

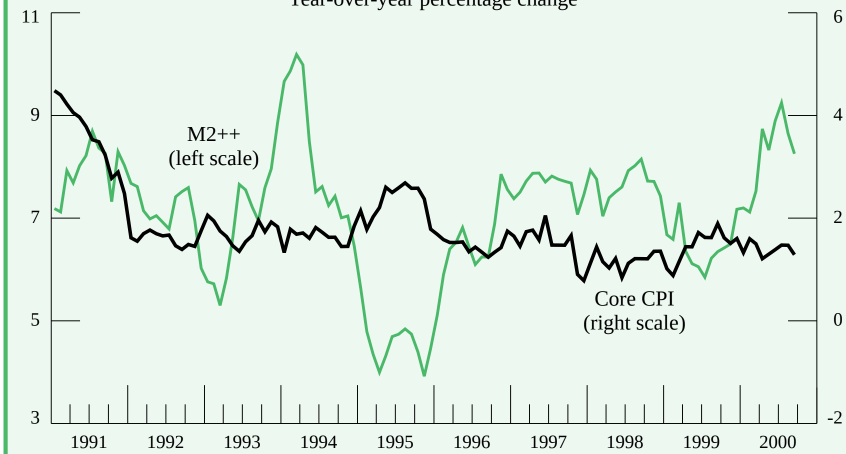
Consumer credit continues to grow moderately, consistent with the outlook for sustained growth in consumer spending. Total business credit has slowed over recent months but remains in line with continued strength in business activities in the near term.

Overall, the information coming from money and credit indicators is consistent with continued strength in real output and some pickup in core inflation.

Chart 20

Core Inflation and Broad Money Growth

Year-over-year percentage change



Inflation projection

A number of forces are expected to contribute to an upward movement in core inflation over the next year. First, longer-term inflation expectations continue to be close to 2 per cent—more than one-half per cent above the current level of core inflation. Second, with output growth projected to remain vigorous, capacity pressures in product and labour markets are expected to become more evident. Third, wage increases are moving up.

Core inflation is expected to rise to 2 per cent in the second half of 2001.

The Bank therefore expects core inflation to rise gradually to 2 per cent in the second half of the next year. If output growth through 2001 slows to a rate more consistent with the growth of potential output, as expected, core inflation should stabilize at about 2 per cent. But there is some risk that the economy could grow more rapidly and move into a more persistent excess-demand situation next year, leading to further upward pressure on inflation.

Recent hikes in crude oil and natural gas prices are expected to keep the rate of increase in the total CPI close to 3 per cent for the rest of this year. If oil prices were to stabilize at levels just below US$30 a barrel, the rate of increase in the total CPI would be expected to move down to about 2 per cent by the end of 2001.

5. Conclusions

During the past six months, the Canadian economy has continued to expand briskly, outstripping expectations. The rise in energy prices has pushed up the total CPI, but core inflation has remained stable, in the lower half of the Bank's target range for inflation control, and below projected levels.

These developments suggest that the economy still had a margin of unused capacity in the first part of this year, and have led the Bank to raise its estimate of both the current level and the prospective growth of the production potential of the Canadian economy.

The move to a fixed schedule for setting the Bank Rate will help to focus attention on Canadian economic circumstances and will give the Bank more opportunities to emphasize the medium-term perspective of monetary policy.

While there are signs that the economy has begun to slow, the momentum of demand is still expected to increase pressures on capacity. Specifically, the Bank expects output growth to average close to 5 per cent this year and to slow to a range of 3 to 4 per cent in 2001. As a result, core inflation is projected to rise to the 2 per cent midpoint of the Bank's target range in the second half of 2001. To keep core inflation steady at 2 per cent, the economy would have to grow on average at a rate equal to the growth of capacity in subsequent years.

The main risks to this outlook relate to demand, supply, and inflation expectations. On the demand side, there is the possibility that continued robust growth of U.S. demand for Canadian exports at a time of strong domestic demand could increase inflation pressures in Canada. The rapid growth of M1 adds to this concern. On the supply side, there is a chance that the strength of spending on machinery and equipment and the recent improvement in productivity gains may raise capacity limits beyond currently projected levels. However, the Bank will continue to take a cautious approach to projecting potential output, updating its estimates as evidence accumulates. With respect to inflation expectations, there is a risk that higher energy prices may feed into the prices of other goods and services and into expectations of future inflation.

In these circumstances of strong economic expansion, high levels of economic activity relative to capacity, and increased energy prices, the challenge for monetary policy will be to judge the balance between aggregate demand and supply, to guard against the risk that higher energy prices could affect core inflation and expectations of future inflation, and to adjust monetary conditions in a timely manner so as to preserve the low trend of inflation that has been benefiting the Canadian economy.

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