BANK OF CANADA

Monetary Policy Report

October 2005

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 output and employment.

The monetary policy instrument

- Announcements regarding the Bank's policy instrument—the target overnight interest rate—take place, under normal circumstances, on eight prespecified dates during the year.
- In setting a target for the overnight rate, the Bank of Canada influences short-term interest rates to achieve a rate of monetary expansion consistent with the inflation-control target. The transmission mechanism is complex and involves long and variable lags—the impact on inflation from changes in policy rates 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 total CPI inflation to the midpoint of a range of 1 to 3 per cent by the end of 1995. That inflation-control target range was extended a number of times, most recently in May 2001, in this last case to the end of 2006. Monetary policy will continue to aim at keeping future inflation at the 2 per cent target midpoint of this range, both to maximize the likelihood that inflation stays within the target range and to increase the predictability of inflation over the longer term (Crawford 2001).

Monitoring inflation

- In the short run, a good deal of movement in the CPI is caused by transitory fluctuations in the prices of such volatile components as fruit and gasoline, as well as by changes in indirect taxes. For this reason, the Bank focuses on a *core* measure of CPI inflation that excludes eight of the most volatile components of the CPI and adjusts the remaining components to remove the effect of changes in indirect taxes. Core inflation also tends to be a better predictor of future changes in the total CPI than does the recent history of CPI inflation (Macklem 2001).

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Monetary Policy Report

— October 2005 —

This is a report of the Governing Council of the Bank of Canada: David Dodge, Paul Jenkins, Sheryl Kennedy, Pierre Duguay, David Longworth, and Tiff Macklem.

As prudent policy-makers, we must not rely on good fortune to help us muddle through. . . .
We must act now to meet the challenges of today, and of the future, for the benefit of all our citizens.

David Dodge

Governor, Bank of Canada
9 September 2005

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1. Overview

Developments in the target for the overnight rate since the July *Update*:

7 September—up 25 basis points to 2.75 per cent

18 October—up 25 basis points to 3 per cent

The global economy has continued to grow at a robust pace since the July *Monetary Policy Report Update*. Canada's economic growth in the first half of the year was somewhat stronger than had been expected. Overall, the economy now appears to be operating at full production capacity.

At the same time, the global and Canadian economies have continued to experience significant movements in energy prices. While the spikes in crude oil and gasoline prices caused by hurricanes in the Gulf of Mexico have already reversed, prices for natural gas and heating oil, as well as gasoline, are substantially higher than they were at the time of the July *Update*.

As well, the Canadian dollar has been trading in a higher range against the U.S. dollar since late summer, and has strengthened even further against other major currencies. This recent strength appears to be underpinned by fundamental factors, including high prices for crude oil and natural gas and Canada's generally solid economic performance.

Past and recent movements in energy prices and in the exchange rate for the Canadian dollar, along with competitive pressures from China and other newly industrialized economies, are giving rise to significant ongoing adjustments in the Canadian economy. This has resulted in considerable variation in the growth patterns of sectors and regions, making an assessment of overall capacity pressures and of the future growth of potential output particularly complex. Given these adjustments and the slow growth of productivity in recent years, the Bank has slightly reduced its estimate of potential output growth for 2005 and 2006.

The Bank's base-case projection sees the Canadian economy remaining at capacity through 2007. Real GDP is expected to grow at about the same pace as potential output over the projection period, averaging 2.8 per cent in 2005, 2.9 per cent in 2006, and 3 per cent the following year.

With the economy operating at capacity and with the increase in energy prices, pressures on consumer prices are somewhat stronger than they were at the time of the July *Update*. The annual rate of increase in the consumer price index (CPI) probably spiked above 3 per cent in September. On the assumption that energy prices evolve in line with currently prevailing futures prices, CPI inflation is projected to average close to 3 per cent for the rest of 2005 and for the first half of 2006 before returning to the 2 per cent target in the second half. In contrast, core inflation should remain below 2 per cent in coming months. But with the economy operating

This report includes information received up to the fixed announcement date on 18 October 2005.

at capacity and longer-term inflation expectations appearing to be well anchored, the Bank expects core inflation to return to 2 per cent by mid-2006.

The Bank's base-case outlook for output and inflation is subject to a number of risks and uncertainties. Over the next four to six quarters, these risks include the adjustment of the Canadian economy to global developments, uncertainty about the current level and future growth of potential output, and the evolution of energy prices. These short-term risks appear to be balanced. But as we look further out to 2007 and beyond, there are increasing risks that the unwinding of global economic imbalances could involve a period of weak global growth.

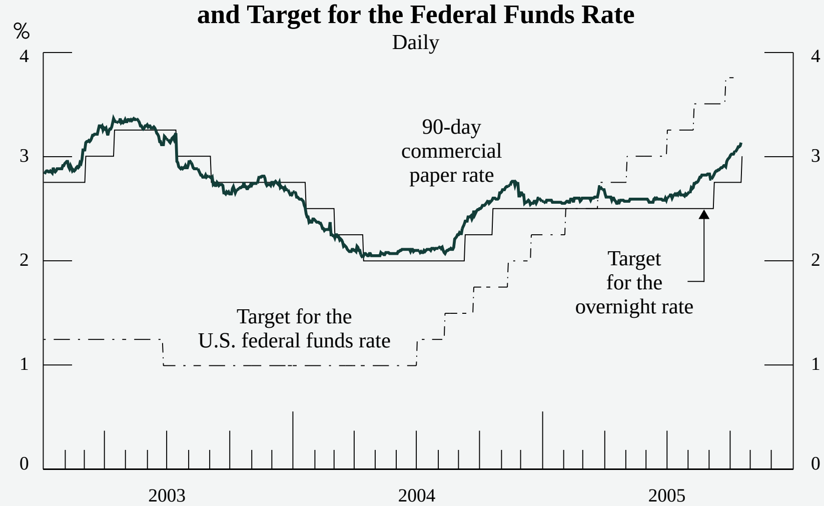
The Bank raised its key policy interest rate by 25 basis points on 7 September and again on 18 October, bringing it to 3 per cent (Chart 1).

In line with the Bank's outlook, and given that the Canadian economy now appears to be operating at capacity, some further reduction of monetary stimulus will be required to maintain a balance between aggregate supply and demand over the next four to six quarters, and to keep inflation on target. However, with risks to the global outlook tilted to the downside as we look to 2007 and beyond, the Bank will monitor international developments particularly closely. More generally, the Bank will continue to assess the adjustments and underlying trends in the Canadian economy, as well as the balance of risks, as it conducts monetary policy to keep inflation on target over the medium term.

Chart 1

90-Day Commercial Paper Rate, Target for the Overnight Rate, and Target for the Federal Funds Rate

Daily



2. Recent Developments in Inflation

Total CPI inflation averaged slightly above 2 per cent in the first eight months of 2005.

The 12-month rate of increase in the total CPI showed considerable volatility over the first eight months of 2005 and averaged just over the Bank's 2 per cent inflation-control target. The core rate of inflation,[1] an indicator of the underlying trend, averaged 1.6 per cent over the same period.

Inflation and the 2 per cent target

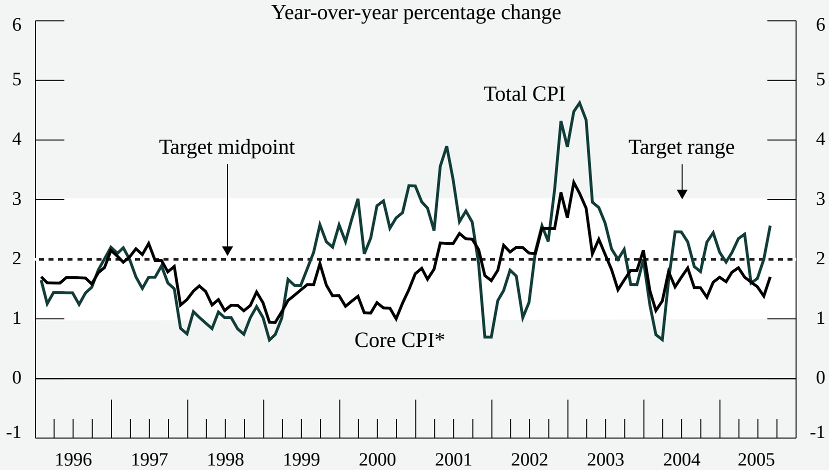
Total CPI inflation has shown some volatility, reaching 2.6 per cent in August 2005.

The 12-month rate of increase in the total CPI showed marked volatility in the first half of 2005, moving in a range of 1.6 to 2.4 per cent. This mainly reflected fluctuations in gasoline prices. Indeed, with the further substantial rise in crude oil prices since late May, total CPI inflation reached 2.6 per cent in August. It likely spiked above 3 per cent in September as a result of the surge in gasoline prices following disruptions to U.S. refinery production caused by recent hurricanes.

Chart 2

Consumer Price Index

Year-over-year percentage change



* CPI excluding eight of the most volatile components and the effect of changes in indirect taxes on the remaining components

Core inflation and other measures of trend inflation remained below 2 per cent.

The core rate of inflation was 1.7 per cent in August (Chart 2). This was the rate projected for the third quarter in the July *Update*. Other measures of the trend rate of inflation that the Bank follows also continued to be below 2 per cent (Chart 3).

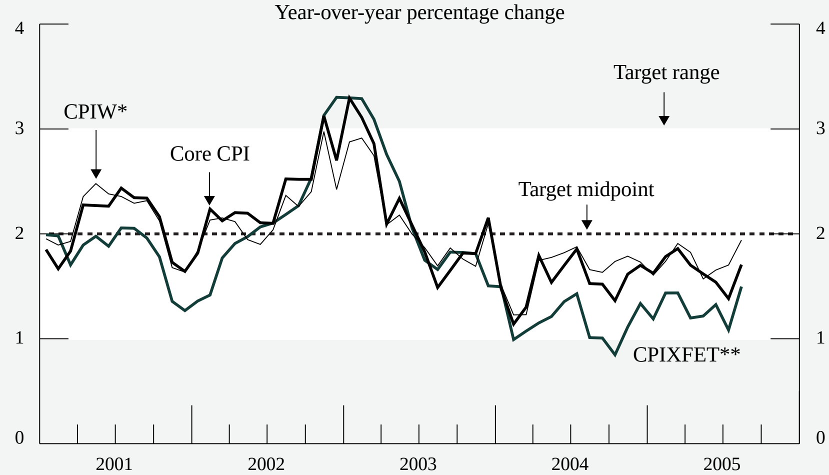
---

1. The core measure of inflation excludes eight of the most volatile components of the total CPI and adjusts the remaining components to remove the effect of changes in indirect taxes. The eight components are fruit, vegetables, gasoline, fuel oil, natural gas, intercity transportation, tobacco, and mortgage-interest costs.

Chart 3

Core CPI and Other Measures of the Trend Inflation Rate

Year-over-year percentage change



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

** CPIXFET excludes food, energy, and the effect of changes in indirect taxes.

Decreases in the global prices of various consumer goods and the past appreciation of the Canadian dollar, which have contributed to declines in the prices of many import-intensive goods, have remained an important source of downward pressure on core inflation so far in 2005. Fluctuations in motor vehicle prices have accounted for much of the short-term movement in the core rate of inflation.

Factors at work on inflation

Aggregate demand in Canada

Economic growth was stronger than expected in the first half of 2005 . . .

Real GDP increased at an annual rate of 2.7 per cent in the first half of 2005, faster than expected at the time of the July *Update.* Thus, the level of activity at mid-year was slightly higher than anticipated. The Bank's monitoring of available information and its assessment of the modest adverse economic effects arising from the recent hurricane-induced disruption of the U.S. economy point to Canadian GDP growth of about 3 per cent in the third quarter of 2005.

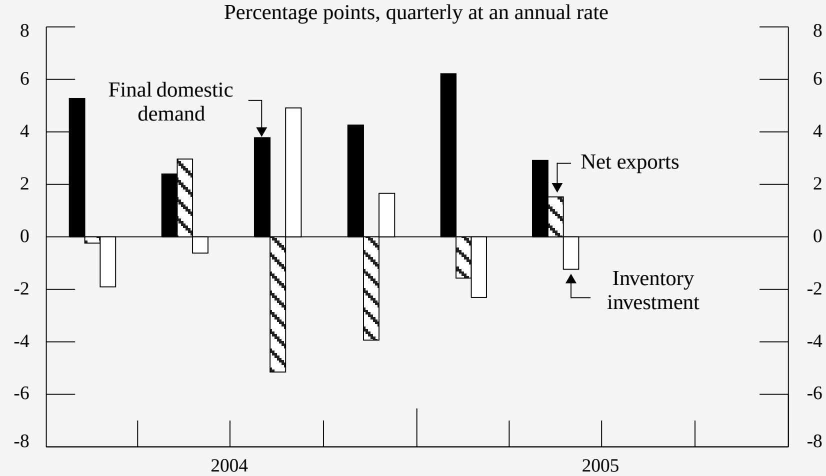
. . . as final domestic demand rose strongly . . .

Final domestic demand continued to show strong gains in the first half of 2005 (Chart 4). Moreover, net exports were little changed, on balance, following a substantial reduction in the second half of last year.

Chart 4

Contribution to Real GDP Growth

Percentage points, quarterly at an annual rate



. . . and exports recovered while import growth eased.

The recovery in Canada's exports in the first half of the year was supported by strong economic growth in the United States. The appreciation of the Canadian dollar through 2003 and 2004, which had contributed importantly to the decline in exports in the second half of 2004, did not appear to have significant additional adverse effects on the level of exports in the first half of 2005. Exports of machinery and equipment rose particularly strongly, while exports of automotive products eased. Imports also rose with the strength in final domestic demand, but were held back by a reduction in inventory investment.

Business capital spending made strong gains.

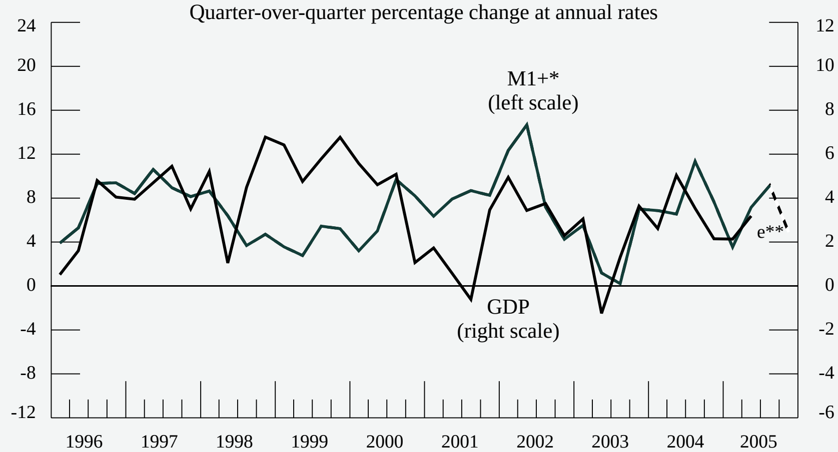
This decline in inventory investment largely reflected the response of manufacturers and wholesalers to the drop in foreign demand in the second half of 2004. Business capital spending, in contrast, continued to make significant gains during the first half of 2005, with strong investment in structures, as well as in machinery and equipment. Household expenditures also rose markedly as a result of further gains in real incomes and personal wealth.

Data on narrow money are generally consistent with the Bank's current monitoring of growth in real GDP of about 3 per cent in the third quarter of 2005 and some slowing in the fourth quarter (Chart 5).

Chart 5

Growth of Real GDP and Real M1+

Quarter-over-quarter percentage change at annual rates



* Two-quarter moving average of growth in M1+ (deflated by the core CPI), one quarter earlier. M1+ has been adjusted to remove the effect of clone funds.

** Third quarter growth in M1+ is estimated based on July and August data.

Estimated pressures on capacity

The economy appears to have been operating at its production capacity at mid-year.

The Bank's conventional measure of the output gap suggests that the economy was operating at its production capacity in the second quarter of 2005 (Chart 6 and Technical Box 1).

Statistics Canada's measure of capacity utilization in the non-farm, goods-producing sector continues to indicate greater pressure on production capacity than the Bank's conventional estimate of the output gap. As well, the proportion of companies reporting labour shortages in the Bank's autumn *Business Outlook Survey* was well above average, while the percentage of firms reporting difficulties meeting an unanticipated increase in demand was also somewhat higher than average (Chart 7). The constraints are strongest in the construction, commodity-producing, and transportation services sectors.

Other indicators, however, point to less pressure on capacity. The core rate of inflation has remained below 2 per cent since the end of 2003. Similarly, although some measures of wage increases have picked up, overall, wage gains have continued to be moderate.

In the July *Update*, the economy was seen as operating a bit below its capacity in mid-2005. After reviewing all the indicators of capacity pressures, the Governing Council now judges that the economy was operating at its production capacity in mid-2005. This reflects both faster-than-expected growth in the first half of 2005, and a judgment that the level of potential output is slightly lower than previously assumed.

Technical Box 1

Actual Output Growth and Conventional Estimates of Potential Output Growth

Potential output is the level of goods and services that the economy can produce on a sustained basis without adding to inflation pressures. It is not directly observable and must be estimated. The Bank estimates the conventional measure of potential output by decomposing movements in labour productivity and labour supply into their trend and cyclical components. The trend components of these two variables are then combined to generate a conventional measure of potential output. Movements in variables that can be observed directly—such as the labour participation rate, population growth, productivity growth, and wage and price inflation—are used to separate the trend and cyclical components in labour productivity and labour supply. Estimates of potential output are constantly updated as new data and the results of ongoing research become available.

The Bank's conventional measure of growth in potential output has fluctuated over time (Chart A), having declined from about 4 per cent in 1999 to about 2.5 per cent in 2002, following the downturn in the trend of labour productivity growth over that period.

The output gap is the difference between the levels—not the growth rates—of actual and potential output. It is a measure of the amount of excess supply or excess demand in the economy (see Chart 6). A large margin of uncertainty surrounds these conventional estimates of potential output and the output gap, and considerable care must be taken in interpreting them. Because of this uncertainty, the Governing Council also examines a broader set of indicators when forming a judgment about capacity pressure (see www.bankofcanada/en/rates/indinf.html).

Technical Box 2 deals with some of the factors that need to be taken into account in projecting future labour productivity growth and future potential output.

Chart A

Potential and Actual Output Growth

Quarter-over-quarter percentage change at annual rate

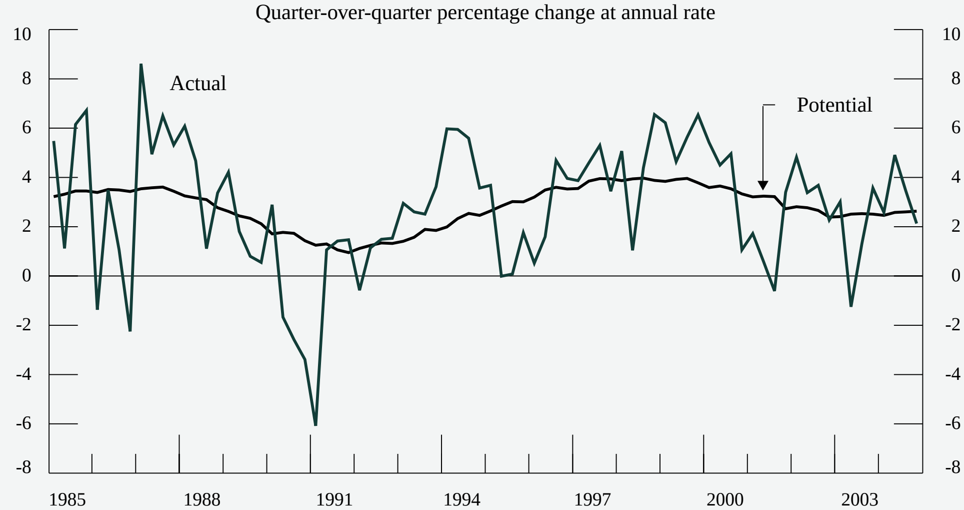
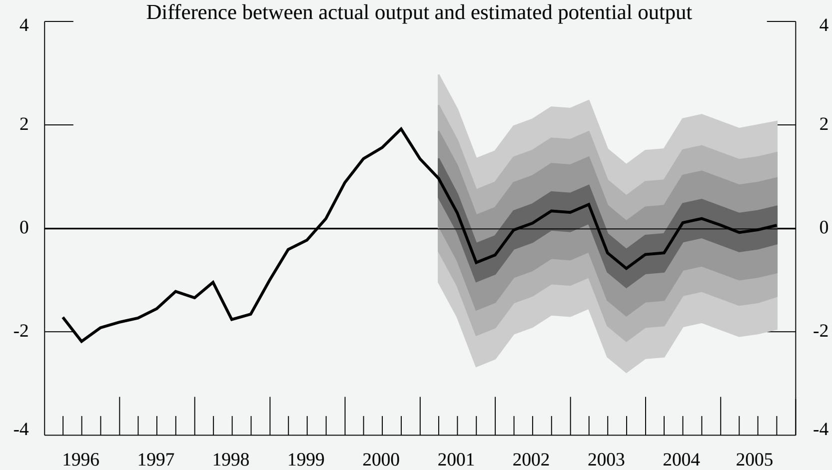


Chart 6

Estimated Output Gap*

Difference between actual output and estimated potential output

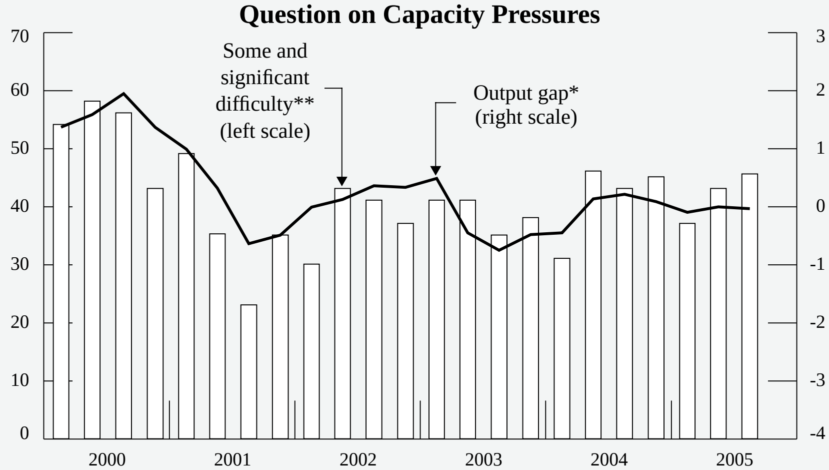


* The shading around the values of the estimated output gap shows (from darkest to lightest) confidence intervals of 25 per cent, 50 per cent, 75 per cent, and 95 per cent.

Note: The estimate for the third quarter of 2005 is based on a projected rise in output of 3 per cent (at annual rates) for the quarter.

Chart 7

Estimated Output Gap and Response to *Business Outlook Survey* Question on Capacity Pressures



* Difference between actual output and estimated potential output. Note the estimate for the third quarter of 2005 is based on a projected rise in output of 3 per cent (at annual rates) for the quarter.

** Percentage of firms indicating they would have either some or significant difficulty meeting an unanticipated increase in demand/sales.

Sectoral and regional differences in economic growth are becoming more apparent as firms adjust to shifts in relative prices.

Companies always face the challenge of adjusting to changes in their economic environment. Strong competition from newly industrialized economies (particularly China), the appreciation of the Canadian dollar, and rising energy prices have made the adjustment process even sharper than usual. The resulting large changes in the relative prices of commodities and manufactured goods have given rise to sectoral and regional differences in economic growth.

Capacity constraints are most apparent in Western energy-producing provinces, where increases in oil and gas prices have raised revenues and generated gains in profits and investment. The sudden expansion in economic activity has created labour shortages—not just in the energy sector, but in other sectors that must compete for the same pool of workers.

The situation for the manufacturing sector is somewhat different. Since manufacturing firms export a significant portion of their output, the large appreciation of the Canadian dollar since 2002 has made their goods less competitive.

Adapting to these rapid changes in their competitive position has been difficult for many firms. Nonetheless, evidence from the Bank's surveys confirms that companies are adjusting to changing economic conditions. Moreover, the results of the Bank's latest *Business Outlook Survey* suggest that investment and hiring intentions remain strong across all regions and most sectors, and that, overall, companies remain positive about the outlook.

Costs

The underlying rate of increase in wages, based on such measures as the average hourly earnings of permanent workers and hourly labour compensation in the business sector, appears to have been in a range between 2 1/2 and 3 1/2 per cent in recent months (Chart 8). At the same time, the year-to-year gain in hourly labour compensation in the business sector picked up to 2.7 per cent in the second quarter of 2005.

Unit labour costs in the second quarter were up 2 per cent from year-earlier levels.

Labour productivity in the second quarter of 2005 was up only 0.6 per cent from its year-earlier level, after two years of virtually no growth. With this modest increase in productivity over the past year, unit labour costs in the business sector in the second quarter of 2005 were 2 per cent higher than year-earlier levels (Chart 9).

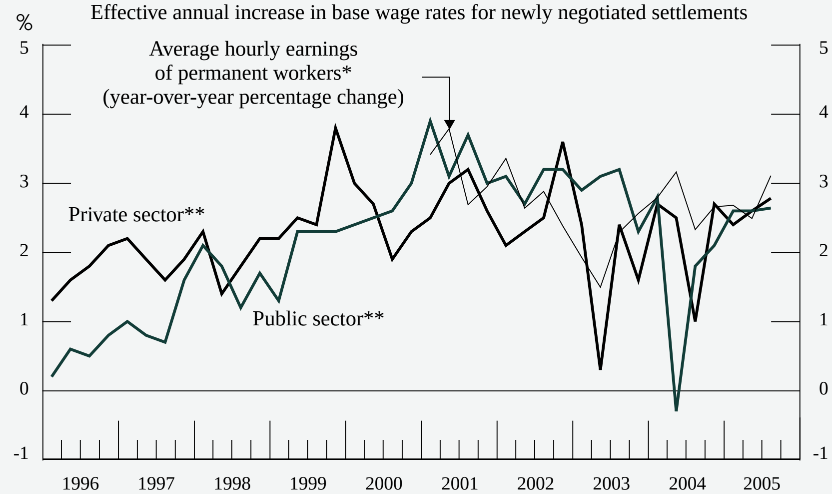
Growth in labour productivity has been weak.

The persistence of the weakness in realized labour productivity growth is increasingly at odds with the Bank's assumption of 1 3/4 per cent growth in trend labour productivity, which underlies

Chart 8

Wage Settlements and Average Hourly Earnings

Effective annual increase in base wage rates for newly negotiated settlements

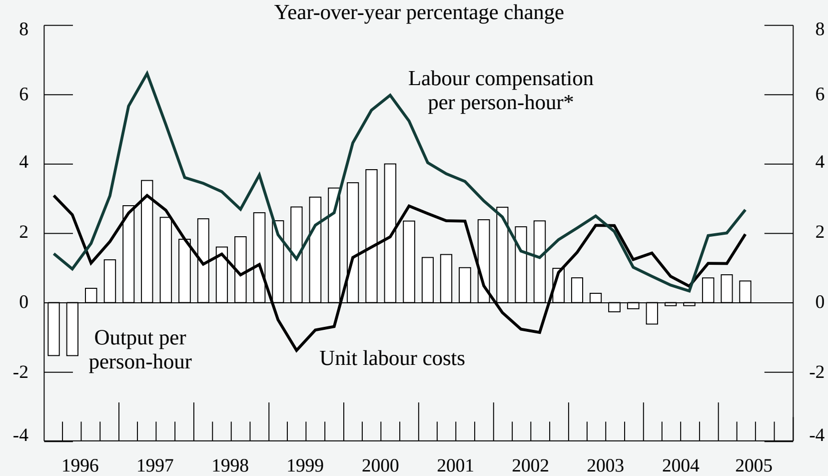


* Source: *Labour Force Information*, last data point plotted = September 2005
** Source: Human Resources Development Canada, last data point plotted = August 2005

Chart 9

Unit Labour Costs and Labour Productivity: Business Sector

Year-over-year percentage change



* Labour compensation includes the labour income of paid workers, plus imputed labour income for self-employed workers.
Source: Statistics Canada *Daily*

our assumption of 3 per cent growth in potential output. Weakness in labour productivity growth has been broad based, showing up in the manufacturing, construction, and services sectors (Technical Box 2). While a number of sector-specific factors are contributing to this weakness, a common factor may be that the economy

Technical Box 2

Productivity Developments in Canada

After growing at a robust 2.1 per cent annual rate between 1996 and 2000, labour productivity in the Canadian business sector slowed in the early part of this decade, and growth then averaged close to zero in 2003 and 2004. In the first half of 2005, productivity has picked up slightly, growing by about 0.7 per cent on a year-over-year basis.[1]

The strong growth in productivity in the latter part of the 1990s was largely associated with the manufacturing sector and the production of information and communications technologies (ICT) equipment, as well as an increase in the capital-labour ratio (capital deepening). Wholesale and retail trade also posted a strong performance.

The recent productivity slump reflects a marked slowing in both capital deepening and efficiency gains from using capital and labour. By sector, labour productivity growth initially slowed in manufacturing, followed by construction. The more pronounced slowing in business sector productivity growth in 2003 and 2004 came through the services sector. Weakness was widespread, but of particular note was the much lower growth in finance, insurance, and real estate.

The decreased productivity in construction could result from the use of less-experienced labour drawn into the sector in the face of sustained demand. Measurement issues and difficulties in effectively integrating ICT equipment may be playing a role in the decline in productivity within the services sector. Some of the recent weakness in productivity growth may also be a by-product of the adjustment of businesses and their workers to the appreciation of the Canadian dollar, higher energy prices, and new sources of competition, particularly from newly industrialized economies in Asia (see Technical Box 1, April *Report*).

Despite the recent poor performance in labour productivity growth, there are signs that it should strengthen. First, growth in manufacturing productivity began to increase in late 2004, owing to the resurgence of productivity growth in industries such as computer equipment, machinery, and transportation equipment. Second, investment spending has risen sharply, which should lead to further capital deepening. Third, as the adjustment process advances, and firms align their capital investments and labour inputs with global developments, productivity growth can be expected to recover.

With this in mind, the Governing Council continues to assume that trend labour productivity will increase at about 1 3/4 per cent, which, combined with growth in trend labour input of about 1 1/4 per cent, implies growth in potential output of 3 per cent. However, given that our best estimate is that potential growth has been running closer to 2.5 per cent in the past few years (as discussed in Technical Box 1) and that it may take time for the economy to fully adjust to the new relative price environment, the base-case projection described in Section 4 of this *Report* assumes that growth in potential output returns gradually to 3 per cent by 2007.

1. Analysts typically focus on productivity growth in the business sector because of problems in measuring productivity in the public sector. Nevertheless, over time, productivity growth in the total economy and in the business sector have been very similar.

has been working through significant adjustments to large changes in relative prices. Taken together, the observed weakness in labour productivity, the ongoing adjustments across sectors, and the evidence of capacity pressures all suggest that growth in trend labour productivity has been running below 1 3/4 per cent in the recent period and could take some time to return to that rate.

Commodity prices and the terms of trade

Canada's terms of trade continued to improve in the first half of 2005, but at a slower pace.

The year-to-year rise in Canada's terms of trade eased substantially during the first half of 2005, as the global prices of many of Canada's exports of agricultural and industrial commodities stabilized. As a result, the chain price index for GDP (a broad price measure of the goods and services produced in Canada) rose 2.2 per cent between the second quarter of 2004 and the second quarter of 2005, which was considerably less than the year-to-year gain over much of the preceding year (Chart 10).

Natural gas prices have increased significantly . . .

Crude oil prices, which were US$58 per barrel at the time of the July *Update*, averaged US$63 per barrel in the 10 days ending on 14 October 2005. The large increase in crude oil prices since the end of 2003 has resulted mainly from a substantial rise in the global demand for energy. Natural gas prices have surged in recent months, moving from just under US$8 per MMBtu at the time of the July *Update*, to about US$14 per MMBtu in the 10 days ending on 14 October, owing to hurricane-related supply disruptions in U.S. production, as well as the effects of particularly hot summer weather in the United States on electricity demand and, hence, on the demand for natural gas.

. . . while, overall, the prices of non-energy commodities are largely unchanged.

Overall, the prices of non-energy commodities have changed little since mid-2005 (Chart 11). Lumber prices have eased as a result of increased supplies. At the same time, the impact of several strikes constrained supply and contributed to a further rise in metals prices.

The substantial increases in the prices of natural gas and crude oil since mid-2005 are expected to lead to an improvement in Canada's terms of trade and real income, resulting in further pronounced gains in corporate profits.

Chart 10

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

Year-over-year percentage change

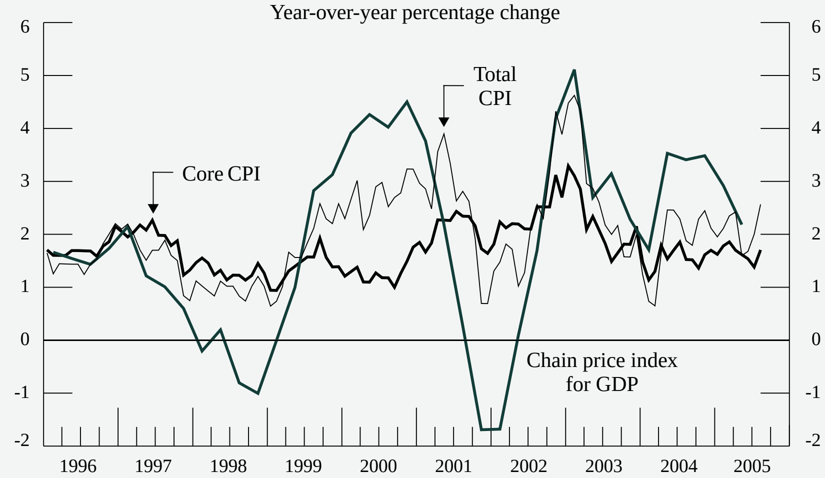
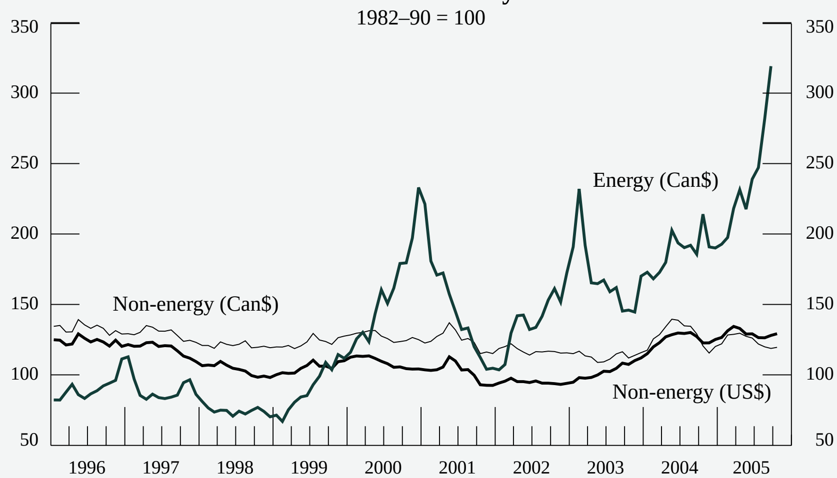


Chart 11

Bank of Canada Commodity Price Index

1982–90 = 100



3. Financial Developments

Risk premiums are low, and credit growth remains solid.

Since the April *Monetary Policy Report*, financing conditions have continued to be favourable, and risk premiums have remained low.[2] Business and household credit continue to advance at a steady pace. The Canadian dollar has appreciated against the U.S. dollar and other major currencies over the same period.

Credit conditions

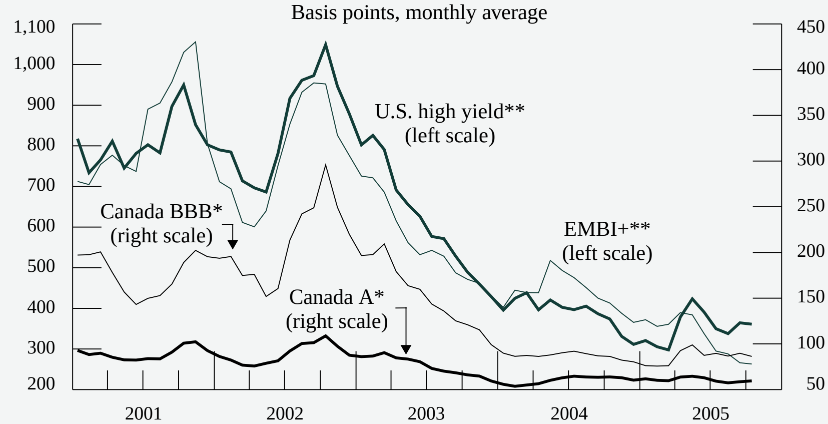
Canadian bond yields and credit spreads have remained low for borrowers . . .

Business-credit conditions have remained advantageous for borrowers since the April *Report*, both in Canada and globally. In financial markets, corporate bond yields and credit spreads have remained low for both investment-grade and non-investment-grade borrowers (Chart 12). Narrow credit spreads reflect healthy corporate balance sheets, continued investor demand for higher-yielding securities, and a high level of liquidity in global financial markets. Easy access to capital markets is indicated by the robust growth in the gross issuance of corporate bonds.

Chart 12

Selected Canadian Corporate and International Credit Spreads

Basis points, monthly average



* Spreads against yields on Canadian government bonds
** Spreads against yields on U.S. government bonds
Source: Merrill Lynch, JPMorgan Chase & Co.

. . . and the TSX composite index has risen since April.

Equity markets in the United States are broadly unchanged from the time of the April *Report*, but most other major equity markets have risen, partly reflecting strong corporate profits. In

2. Since discussion of financial developments was limited in the July *Update*, this section reviews developments since the April *Monetary Policy Report*.

Canada, the TSX composite index increased by about 9 per cent, led by gains in energy-sector stocks over the period.

Total business credit continued to grow at about 6 per cent per annum (Chart 13). Growth in both short-term and long-term business credit remains solid. One factor driving the demand for credit has been investment to enhance efficiency. Investments aimed at increasing capacity appear to be primarily in the energy sector.

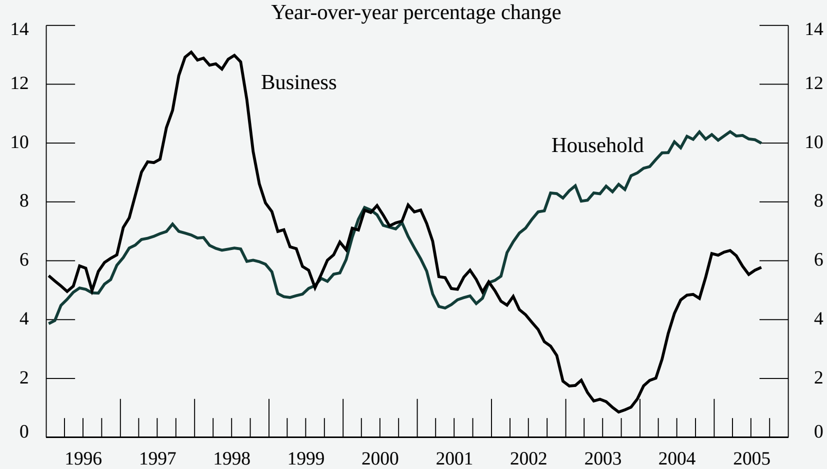
Business and household credit continue to grow.

On the household side, strong consumption and activity in the housing market continue to be supported by rapid growth in total household credit (Chart 13). Robust employment growth and low interest rates continue to keep household balance sheets healthy, as indicated by a historically low debt-servicing ratio and a low delinquency rate.

Chart 13

Business and Household Credit

Year-over-year percentage change



Yield curves and the exchange rate

Yields on short-term U.S. bonds have risen, while those on longer-term issues have moved up modestly since the April *Report* (Chart 14). The increase in yields at the short end mainly reflects increases in the federal funds rate, which now stands at 3.75 per cent. U.S. federal funds futures currently imply a policy rate of 4.25 per cent by the end of 2005, a level that is modestly higher than was implied by futures prices at the time of the last *Report*.

The low level of yields on long-term bonds in the United States and in most industrial countries seems to be largely explained by factors pushing up desired global savings relative to business investment.

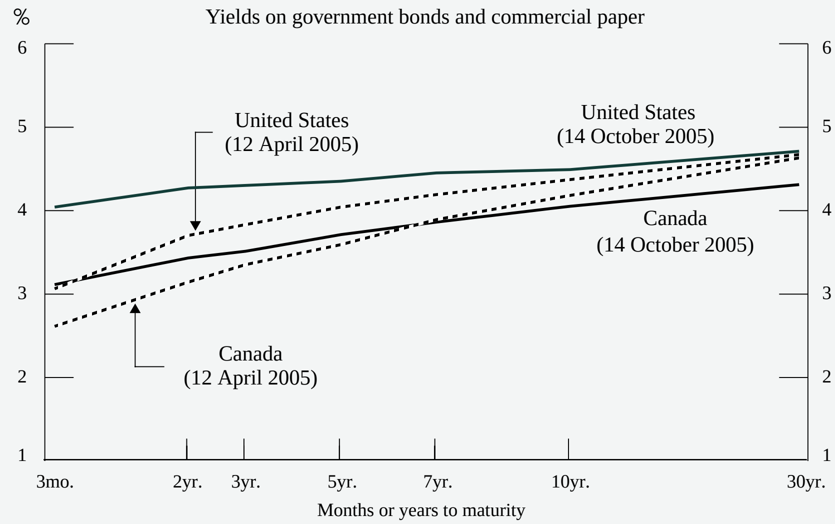
Canadian policy rates remain below those in the United States.

Canadian policy rates remain below those in the United States. This has resulted in a wider differential between U.S. and Canadian interest rates across the yield curve. Yields on two-year Canadian bonds are approximately 80 basis points below those on U.S. Treasuries, compared with 60 points lower at the time of the April *Report*. Yield spreads on longer-term bonds have also continued to widen.

Chart 14

Term Structure of Interest Rates in Canada and the United States

Yields on government bonds and commercial paper



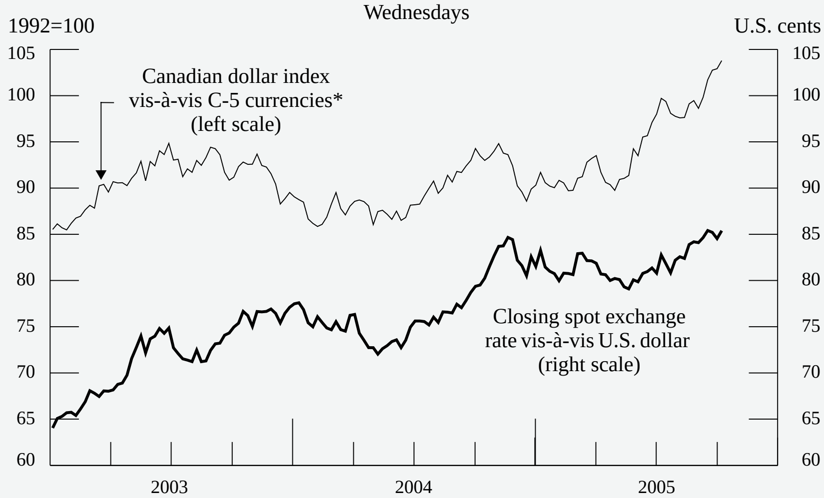
The Canadian dollar has recently moved into a trading range of 84 to 86 cents U.S.

After trading in a range of 79 to 83 cents U.S. for most of 2005, the Canadian dollar has been trading in a higher range of 84 to 86 cents U.S. since late summer (Chart 15). Most other major currencies have weakened against the U.S. dollar over that same period. As a result, the Canadian dollar has risen more sharply against other major currencies. The recent strength in the Canadian dollar appears to be underpinned by fundamental factors, including higher energy prices and Canada's generally solid economic performance.

Chart 15

Canadian Dollar Exchange Rate

Wednesdays



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

4. The Outlook

The outlook begins with a base-case projection for the global and Canadian economies and for inflation. The base case has been developed assuming energy prices consistent with current futures prices; a smooth and orderly resolution of global imbalances over the medium term, involving a modest and gradual further real effective depreciation of the U.S. dollar; and a relatively stable Canada-U.S. exchange rate over the policy horizon. This is followed by a discussion of the risks surrounding the projection. These risks are particularly noteworthy as we look to 2007 and beyond, given the uncertainties related to the manner in which global imbalances will be unwound.

International background

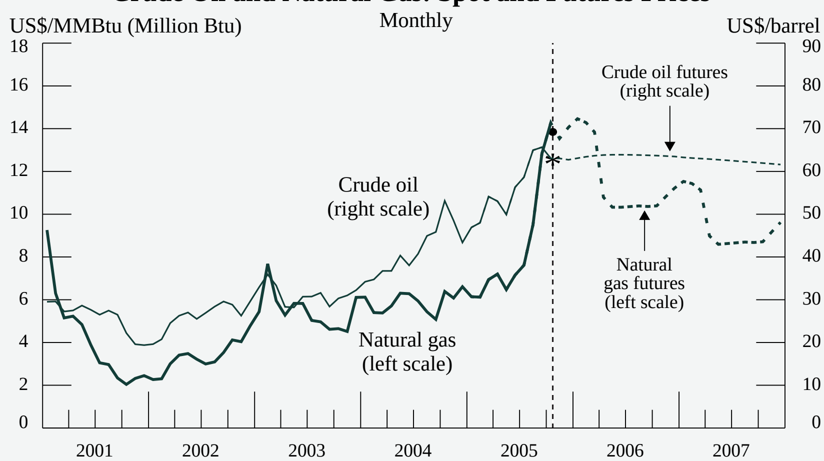
In the Bank's base-case projection, the profile for crude oil and natural gas prices is based on current futures prices. This implies that the price for crude oil will be just below US$65 per barrel through 2006 and 2007. Natural gas prices are assumed to remain at or above US$10 per MMBtu through 2007Q1 before falling below US$10 per MMBtu through the rest of 2007 (Chart 16). These higher energy prices are expected to have a small restraining effect on both aggregate supply and demand in the global economy.

Real prices for non-energy commodities are assumed to remain near current levels through 2006 and 2007, since supply is expected to expand roughly in line with demand.

Chart 16

Crude Oil and Natural Gas: Spot and Futures Prices†

Monthly



* Spot price for crude oil (14 October 2005)
• Spot price for natural gas (14 October 2005)
† Based on an average of futures contracts over the ten business days ending 14 October

The base-case outlook for GDP growth in the United States and in the major overseas economies suggests that the global economy will continue to expand at about 4 per cent per year over the projection horizon (Table 1).

Economic growth is expected to remain strong in Asia . . .

Economic growth in Asia is expected to remain robust, despite higher energy prices. China and the other Asian newly industrialized economies continue to expand rapidly, and will continue to do so over the next few years. As well, the economic expansion in Japan appears to be building momentum. The rate of inflation in Japan is expected to turn positive by the end of 2006.

. . . but has been weaker than expected in the euro area.

In contrast, growth in euro zone economies remains sluggish and is expected to average 1.2 per cent in 2005, a somewhat weaker performance than anticipated at the time of the last *Report*. Economic activity in the euro zone has not been as strong as expected, partly reflecting uncertainty concerning labour market and other structural reforms, as well as higher energy prices. GDP growth in the euro zone is projected to pick up gradually over the next two years as domestic demand recovers.

Data on the U.S. economy suggest that growth has been relatively strong. Real U.S. GDP expanded at an annual rate of 3.3 per cent in the second quarter of 2005. Monthly indicators support a further pickup in activity in the third quarter, led by particularly robust housing activity and consumer spending. The effects of Hurricane Katrina and higher energy prices will, however, have a dampening impact on the U.S. economy for the remainder of this year.

U.S. GDP growth is expected to remain solid in 2006 and 2007.

Accordingly, U.S. GDP is expected to grow by 3.5 per cent in 2005, somewhat less than the 3.7 per cent anticipated at the time of the July *Update*. Economic activity is expected to pick up slightly in 2006, as the adverse effects of higher energy prices are more than fully offset by increased construction associated with the cleanup and rebuilding of storm-damaged areas.[3] In 2007, the U.S. economy is expected to slow modestly, as domestic demand retreats, owing to increases in U.S. policy rates and increased household and government savings.

This base-case projection assumes that global imbalances will be resolved over an extended period, with relatively modest year-to-year movements. Thus, the U.S. current account deficit, which is largely matched by surpluses in Asia and in oil-exporting countries,

3. Overall growth in U.S. real GDP in 2005 is expected to be reduced by 0.1 per cent at annual rates as a result of the economic disruption caused by Hurricane Katrina. In 2006, real GDP growth is projected to be 0.1 per cent higher, owing to the reconstruction effort, but growth could be slightly stronger, depending on the extent of the reconstruction funded by the federal government.

starts to gradually unwind in 2007. This unwinding involves increased domestic demand in Asia, Europe, and oil-exporting countries in 2007; an increase in private and public savings in the United States; and a further real effective depreciation of the U.S. dollar, which shifts demand towards U.S. exports and reduces the U.S. demand for foreign imports.

Table 1
Global Growth Projections

	Share of real global GDP[a] (per cent)	Expected growth (per cent)[b]		
		2005	2006	2007
United States	21	3.5 [0.74]	3.6 [0.76]	3.2 [0.67]
European Union	19	1.2 [0.25]	1.7 [0.32]	2.2 [0.42]
Japan	7	1.7 [0.12]	1.6 [0.11]	2.2 [0.15]
China and Asian NIEs[c]	17	7.9 [1.34]	7.2 [1.22]	7.2 [1.22]
Others	36	4.3 [1.63]	4.3 [1.55]	4.3 [1.55]
World	100	4.0	4.0	4.0

a. GDP shares are based on the purchasing-power-parity (PPP) valuation of country GDPs for 2004. Source: IMF, WEO Database, April 2005

b. Numbers in square brackets represent the contribution of each region to the global economic growth rate in percentage points.

c. NIEs are newly industrialized economies. These include Hong Kong (Special Administrative Region), South Korea, Taiwan (Province of China), and Singapore.

Source: Bank of Canada

Aggregate demand and supply in Canada

Solid growth in final domestic demand is expected to support economic expansion in Canada through 2007.

In the base-case projection for Canada, solid growth in final domestic demand is expected to continue to contribute importantly to economic expansion in the second half of 2005 and through 2006 and 2007.

Several factors point to further strong increases in business investment. These include an expanding global economy and indications that energy and non-energy commodity prices will remain high for some time, the high rate of capacity utilization in a number of capital-intensive industries, continued favourable financial conditions, strong profit levels and balance sheets, and earlier reductions in the prices of imported machinery and equipment.

A solid pace of growth in consumer expenditures is projected in 2006 and 2007 . . .

After a substantial advance in 2005, consumer spending is expected to rise solidly through 2006 and 2007, albeit at a more modest pace than in 2005 and somewhat less than projected in the July *Update* (Table 2). Higher energy prices will tend to dampen

Table 2
Contributions to Average Annual Real GDP Growth
Percentage points*

	2005	2006	2007
Consumption	2.2 (2.2)	1.6 (1.8)	1.7
Housing	0.3 (0.2)	-0.2 (-0.2)	0
Government	0.7 (0.8)	1.0 (1.0)	0.9
Business fixed investment	0.9 (0.9)	0.8 (0.8)	0.6
Subtotal: Final domestic demand	4.1 (4.1)	3.2 (3.4)	3.2
Exports	1.3 (1.4)	2.1 (2.2)	1.6
Imports	-2.7 (-2.8)	-2.3 (-2.2)	-1.8
Subtotal: Net exports	-1.4 (-1.4)	-0.2 (0)	-0.2
Inventories	0.1 (0)	-0.1 (-0.1)	0
GDP	2.8 (2.7)	2.9 (3.3)	3.0

* Figures in parentheses are from the scenario in the July *Update*.

consumption growth (Technical Box 3), as will the slightly lower income growth from the lower assumed profile for potential output. Nonetheless, still-robust gains in real incomes and relatively low long-term interest rates should help support the pace of consumer spending in 2006 and 2007. Consumer confidence, which recently fell in the immediate wake of hurricanes in the United States, is expected to recover. Housing investment is expected to be little changed, on balance, following strong increases in recent years.

The base-case outlook continues to incorporate an assumption of relatively strong growth in total spending on goods and services by all levels of government combined, with overall spending on goods, services, and transfers rising at about the same rate as revenues.

. . . while net exports will exert a small drag.

With continued strong growth in the U.S. economy, exports are expected to continue to rise, while strong investment in machinery and equipment will continue to stimulate imports. The adjustment of exports and imports to the appreciation of the Canadian dollar through 2003 and 2004 is now well advanced. But, on the assumption that the Canadian dollar continues to trade in its recent range of 84 to 86 cents U.S., there will be further effects on trade. While there is considerable uncertainty regarding the speed and magnitude of the effects of exchange rate movements on net exports, on balance, net exports are expected to exert a small drag on overall growth through 2006 and 2007. This is a somewhat weaker track

Technical Box 3

The Economic Effects of Higher Energy Prices for Canada

Fluctuations in the global prices of energy commodities affect economic activity through various channels (Stuber 2001). As a net exporter of oil, petroleum products, and natural gas, Canada would see its terms of trade, and therefore its real income, increase as energy prices rise. But since most of Canada's important trading partners are net importers of energy, higher energy prices could be expected to reduce their demand for Canada's exports. Energy-price increases would also raise the operating costs of Canadian businesses and reduce the real incomes of households, while transferring income to oil and gas producers.

Energy-price movements importantly affect the composition of aggregate demand in Canada and have differing sectoral and regional effects.

A sustained increase in the price of West Texas Intermediate crude oil of US$10 per barrel could directly raise Canada's real income by close to 0.3 per cent. It is estimated that aggregate activity in Canada could edge up by about 0.1 per cent after three years, as capital spending by oil and gas companies and spending by governments gradually increase (Table A).[1,2] On the other hand, exports, consumer spending, and investment by non-energy firms would likely be somewhat lower. In the short run, aggregate activity would likely be lower by about 0.1 per cent, as decision, planning, and regulatory lags, together with tight markets for many inputs (including labour), would probably limit the initial response of the energy sector to increased revenues.

A sustained 20 per cent rise in the U.S.-dollar price of natural gas is estimated to raise aggregate activity in Canada by a somewhat larger amount after three years—about 0.2 per cent. The adverse effects of higher natural gas prices on U.S. demand for Canadian products would be expected to be considerably smaller than those of a similar oil-price increase, since the United States is much less dependent on natural gas imports than on foreign supplies of crude oil and petroleum products.

Table A
Estimated Impact of an Increase of US$10 per Barrel in Oil Prices on Canada's Real GDP and Its Components
Percentage difference from control level

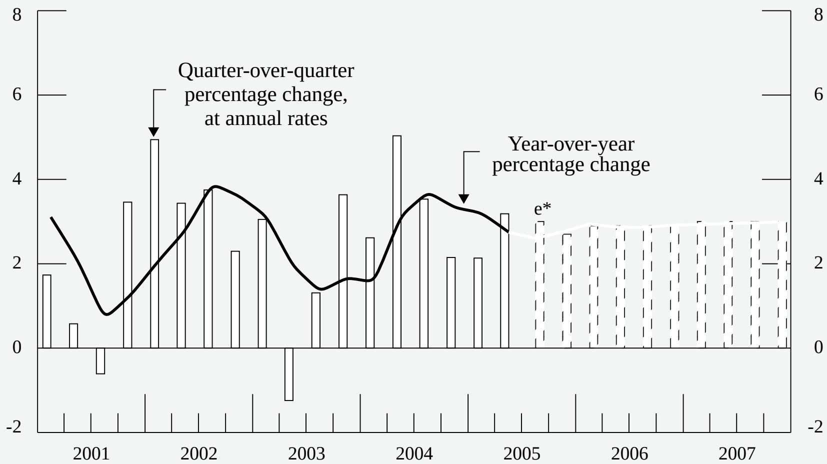
	After four quarters	After twelve quarters
Consumption	-0.1	-0.05
Government spending*	+0.1	+0.5
Business fixed investment	+0.4	+0.8
Exports	-0.4	-0.4
Imports	-0.2	-0.1
GDP	-0.1	+0.1

* It is assumed that the increased government revenues stemming from higher oil prices are either saved or spent on goods and services. Part of these higher revenues might instead be returned to households in the form of either increased transfer payments or reduced taxes. The estimated impact on consumption would then be less negative than shown in Table A, while the impact on government spending would be less positive. The overall effect on economic activity should be largely unchanged.

1. The estimates shown in Table A are based on an extension of the analysis undertaken in Stuber (2001). First, the effects of an oil-price increase on the incomes of energy and non-energy businesses, households, and the government sector are assessed, along with their impact on foreign demand for Canadian products. These effects, together with assumptions for the marginal propensities to spend and to import, are then used to estimate the effect of the oil-price increase on the various components of GDP.
2. Factors that have limited the actual increase in the profits of oil and gas companies over the past year, as the prices of energy commodities rose, have included the further appreciation of the Canadian dollar, oil-price hedging programs, and weakness in the price of heavy crude oil relative to that of light crude.

Chart 17

Real Gross Domestic Product for Canada



* The letter "e" denotes estimate based on available indicators.

for net exports in 2006 than that in the July *Update*, owing largely to the stronger Canadian dollar.[4]

Canada's GDP is projected to grow, on average, by about 2.8 per cent in 2005, 2.9 per cent in 2006, and 3 per cent in 2007 . . .

The Bank's base-case projection therefore calls for economic growth, on an average annual basis, to be 2.8 per cent in 2005 rising gradually to 2.9 per cent in 2006 and to 3.0 per cent in 2007. This is in line with the latest Consensus Economics outlook. The outlook for growth is a little higher in 2005 and a little lower in 2006 than at the time of the July *Update,* reflecting the elimination of the output gap and a modest reduction in the assumed growth rate of potential output through 2005 and 2006.[5]

. . . with the economy operating at its production capacity over the projection horizon.

On a quarterly basis, the Bank projects that real GDP growth will edge down to about 3.0 and 2.7 per cent in the third and fourth quarters of 2005, respectively. It will then increase modestly to close to 3 per cent over the four quarters of 2006 and through 2007 (Chart 17, Table 3). This base-case projection incorporates some further reduction in monetary stimulus to maintain a balance between aggregate supply and demand in the Canadian economy and thus keep inflation on target. The economy continues to operate at about its production capacity throughout the projection horizon.

4. Somewhat weaker growth in U.S. GDP resulting from Hurricane Katrina is expected to dampen Canadian net exports in the third and fourth quarters of 2005, but the effect will be muted, since half of the negative impact in the United States will be in the three affected states that, together, account for only about 1 per cent of total Canadian exports.

5. As discussed in Technical Box 2, while we have retained the assumption that potential output will grow at 3 per cent for 2007, it is assumed to grow at 2.8 per cent in 2005 and 2.9 per cent in 2006, reflecting recent low productivity growth and the significant amount of adjustment taking place in the Canadian economy in response to large relative price changes.

The base-case projection for inflation

While indicators of near-term inflation expectations have edged up, longer-term measures remain well anchored to 2 per cent.

Although most indicators of near-term inflation expectations that the Bank follows have edged up in recent months, key medium- and longer-term measures remain well anchored to the 2 per cent target. While 70 per cent of firms in the Bank's autumn *Business Outlook Survey* expect CPI inflation to be within a range of 1 to 3 per cent, on average, over the next two years, the percentage of respondents expecting inflation to be above 3 per cent rose appreciably from the preceding survey. Nevertheless, the average private sector forecast for total CPI inflation over the longer term is near 2 per cent (Consensus Economics Inc. 2005).

Total CPI inflation is projected to average close to 3 per cent for the rest of 2005 and for the first half of 2006, before returning to the 2 per cent target in the second half of 2006.

Total CPI inflation is projected to average near to 3 per cent for the rest of 2005 and for the first half of 2006, before returning to the 2 per cent target in the second half of 2006. For the next year or so, total CPI will continue to be importantly affected by recent developments in the market for crude oil, natural gas, gasoline, and heating oil (Chart 16). While gasoline prices, on a month-to-month basis, are expected to ease somewhat through to early 2006, consumer prices for natural gas are projected to increase considerably over the same period, as recent increases in wholesale prices become reflected in regulated prices and contracts.

Core inflation is expected to average about 1.6 per cent over the remainder of 2005 . . .

Core inflation is projected to continue to average close to 1.6 per cent through to the end of 2005. The past appreciation of the Canadian dollar, together with expected ongoing reductions in the world prices of some consumer goods (owing to increasing supplies from countries such as China) and some temporary effects related to automobile prices, are exerting some downward pressure on inflation.

. . . before returning to 2 per cent by mid-2006.

With the economy expected to be operating at production capacity and inflation expectations well anchored, total CPI inflation should decrease to the 2 per cent target in the second half of 2006. The core rate is projected to rise to 2 per cent by mid-2006 and to remain there through 2007 (Table 3), owing to these same factors. This assumes that there is little pass-through from higher oil and natural gas prices and the recent appreciation of the Canadian dollar into core inflation, consistent with experience in recent years.

Increases in average hourly earnings of permanent workers are expected to rise over the projection period. At the same time, however, with a significant improvement in the growth of labour productivity, the projected year-to-year increase in unit labour costs over this period, should remain around 2 per cent.

Table 3
Summary of the Base-Case Projection*

	2005		2006			2007	
	Q3	Q4	Q1	Q2	H2	H1	H2
Real GDP (quarter-to-quarter percentage change at annual rates)	**3.0** *(2.7)*	**2.7** *(3.3)*	**2.9** *(3.5)*	**2.9** *(3.5)*	**2.9** *(3.3)*	**3.0**	**3.0**
Real GDP (year-over-year percentage change)	**2.6** *(2.4)*	**2.8** *(2.6)*	**2.9** *(3.0)*	**2.9** *(3.2)*	**2.9** *(3.4)*	**2.9**	**3.0**
Core inflation (year-over-year percentage change)	**1.6** *(1.7)*	**1.6** *(1.7)*	**1.7** *(1.8)*	**1.9** *(1.8)*	**2.0** *(1.9)*	**2.0**	**2.0**
Total CPI (year-over-year percentage change)	**2.7** *(2.2)*	**2.9** *(2.4)*	**2.8** *(2.5)*	**2.8** *(2.5)*	**2.0** *(2.0)*	**1.9**	**1.9**
WTI ** (level)	**63** *(60)*	**63** *(61)*	**64** *(61)*	**64** *(61)*	**64** *(60)*	**63**	**62**

* Figures in parentheses are from the July *Monetary Policy Report Update*.

** Assumption for the price of West Texas Intermediate crude oil (US$ per barrel), based on an average of futures contracts over the two weeks ending 14 October 2005

Risks to the base-case projection

The base-case projection incorporates a number of assumptions: global energy prices evolve in line with current futures prices; productivity growth in Canada continues to recover; there is little feed-through from higher oil and gas prices into core inflation; there is a gradual unwinding of global imbalances; and the Canadian dollar continues to trade in its recent range relative to the U.S. dollar. Clearly there are risks and uncertainties around each of these assumptions.

Over the next four to six quarters, risks to the base-case projection for Canada appear to be balanced. There are both upside and downside risks to global economic activity, stemming primarily from future energy prices and the pace of growth in China. For Canada, these global risks could affect the evolution of net exports, commodity prices, and the exchange rate.

Adjustment to the appreciation of the Canadian dollar, higher commodity prices, and increased competition from China and other newly industrialized economies is so far proceeding in line with expectations. However, there are still both upside and downside risks to exports and imports as this continuing adjustment unfolds.

The ongoing adjustment and large relative price changes also pose some risks to the outlook for inflation. While the balance of indicators suggests that the economy is operating at its production potential, sectoral and regional shifts occurring in the Canadian economy make the overall assessment of capacity pressures particularly complex. With the economy operating at its production potential, there is also the risk that higher energy costs could feed through more broadly to the prices of non-energy goods and services, increasing the upward pressure on inflation. The risk of this affecting longer-term inflation expectations should be mitigated, however, by monetary policy clearly focused on achieving the 2 per cent target.

Looking to 2007 and beyond, there are risks related to the manner in which global imbalances will be unwound. The imbalances remain sizable, and the longer they persist without appropriate policy actions being taken, the higher is the risk that their resolution could involve a period of weakness in worldwide aggregate demand.

The principal risk is that, as the savings rates of households and governments begin to rise in the United States, domestic demand elsewhere in the world fails to pick up sufficiently to sustain global demand. Uncertainty related to structural reform appears to have resulted in increased precautionary savings in significant parts of Europe, while in China the need to self-insure against health risks and to provide for education costs is leading households to save a very large proportion of their income gains. More recently, higher oil prices are shifting current account surpluses towards oil-exporting countries, which may dampen global demand if these increased oil revenues do not translate sufficiently into increased import demand by these countries. For the base-case projection to be realized, U.S. consumers and governments need to spend less and save more, and policy actions need to be taken elsewhere to encourage stronger domestic demand.

There is also the risk of an abrupt and disorderly adjustment. This would likely involve large movements in exchange rates and other asset prices and a sharp slowing in the world economy. The economic cost for the world economy would be greater if some countries resist fundamental exchange rate movements or if there is a rise in protectionism.

For Canada, the risks of weaker global demand beginning some time in 2007 would imply less demand for Canadian products, less buoyancy in commodity prices and, hence, less growth in business investment. A sharp depreciation of the U.S. dollar against the Canadian dollar, as part of a broader currency adjustment, would further exacerbate the negative impact on the demand for Canadian-produced goods. Such weaker demand would have implications for the conduct of monetary policy.

BIBLIOGRAPHY

Bank of Canada. 1991. "Targets for reducing inflation: Announcements and background material." *Bank of Canada Review* (March): 3–21.

__________. 1991. "Targets for reducing inflation: Further operational and measurement considerations." *Bank of Canada Review* (September): 3–23.

__________. 2001. "Joint Statement of the Government of Canada and the Bank of Canada on the Renewal of the Inflation-Control Target." Press Release (17 May 2001) and Background Information. Reprinted in *Bank of Canada Review* (Summer): 57–67.

Canada. Statistics Canada. *Labour Force Information*. Statistics Canada Catalogue No. 71-001-XWE (monthly). Ottawa.

Consensus Economics Inc. 2005. *Consensus Forecasts*. Various issues.

Crawford, A. 2001. "Predictability of Average Inflation over Long Time Horizons." *Bank of Canada Review* (Autumn): 13–20.

Macklem, T. 2001. "A New Measure of Core Inflation." *Bank of Canada Review* (Autumn): 3–12.

Stuber, G. 2001. "The Changing Effects of Energy-Price Shocks on Economic Activity and Inflation." *Bank of Canada Review* (Summer): 3–14.

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