BANK OF CANADA
BANQUE DU CANADA

Monetary Policy Report

October 2009

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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, stable, and predictable 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 pre-specified 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 agreed on 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. The inflation target has been extended a number of times. In November 2006, the agreement was renewed for a period of five years to the end of 2011. Under this agreement, the Bank will continue to conduct monetary policy aimed at keeping total CPI inflation at 2 per cent, with a control range of 1 to 3 per cent around the target.

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 uses a core measure of CPI inflation as an indicator of the underlying trend in inflation. This core measure excludes eight of the most volatile components of the CPI and adjusts the remaining components to remove the effect of changes in indirect taxes.

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* See "Joint Statement of the Government of Canada and the Bank of Canada on the Renewal of the Inflation-Control Target" and background information. Reprinted in the *Bank of Canada Review* (Winter 2006–2007): 45–59.

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October 2009

This is a report of the Governing Council of the Bank of Canada:
Mark Carney, Paul Jenkins, Pierre Duguay, David Longworth,
John Murray, and Timothy Lane.

Recent events were a watershed. A powerful and sustained restructuring of the global economy has begun. Canada is entering this period with many strengths, but the efforts required of us will be historic.

Mark Carney

Governor, Bank of Canada
28 September 2009
Victoria, British Columbia

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Overview

Recent indicators point to the start of a global recovery from a deep, synchronous recession. Global economic and financial developments have been somewhat more favourable than expected at the time of the July *Report*, although significant fragilities remain.

A recovery in economic activity is also under way in Canada. This resumption of growth is supported by monetary and fiscal stimulus, increased household wealth, improving financial conditions, higher commodity prices, and stronger business and consumer confidence. However, heightened volatility and persistent strength in the Canadian dollar are working to slow growth and subdue inflation pressures. The current strength in the dollar is expected, over time, to more than fully offset the favourable developments since July.

Given all of these factors, the Bank now projects that, relative to the July *Report*, the composition of aggregate demand will shift further towards final domestic demand and away from net exports. Growth is expected to be slightly higher in the second half of this year than previously projected but to average slightly lower over the balance of the projection period. The Canadian economy is projected to grow by 3.0 per cent in 2010 and 3.3 per cent in 2011, after contracting by 2.4 per cent this year. This is a somewhat more modest recovery in Canada than the average of previous economic cycles.

The Bank now expects that the output gap will be closed in the third quarter of 2011, one quarter later than it had projected in July. Correspondingly, inflation is also expected to return to the 2 per cent target in the third quarter of 2011, one quarter later than in July's projection.

The risks to the outlook remain elevated, although they have diminished somewhat since the July *Report*, with accumulating evidence of a recovery in the global and Canadian economies.

The main upside risks to inflation relate to the possibility of a stronger-than-anticipated recovery in the global economy. A stronger global recovery would be transmitted to Canada via trade, financial, confidence, and commodity-price channels. There is also the risk that Canadian domestic demand could be more robust and have a more sustained momentum than projected.

On the downside, a stronger-than-assumed Canadian dollar, driven by global portfolio movements out of U.S.-dollar assets, could act as a significant further drag on growth and put additional downward pressure on inflation. Another important downside risk is that the global recovery could be even more protracted than projected if self-sustaining growth in private demand, which will be required for a solid recovery, takes longer than expected to materialize.

This report includes information received up to the fixed announcement date on 20 October 2009.

Over the medium term, global macroeconomic imbalances continue to pose significant risks to the outlook.

While the underlying macroeconomic risks to the projection are roughly balanced, the Bank judges that, as a consequence of operating at the effective lower bound, the overall risks to its inflation projection are tilted slightly to the downside.

On 10 September and 20 October, the Bank reaffirmed its conditional commitment to maintain its target for the overnight rate at its current level of 1/4 per cent until the end of the second quarter of 2010 in order to achieve the inflation target. In its conduct of monetary policy at low interest rates, the Bank retains considerable flexibility, consistent with the framework outlined in the April *Report*.

The Global Economy

Recent Developments

Recent indicators point to the start of a global recovery, following a deep, synchronous global recession.

Recent indicators point to the start of a global recovery, following a deep, synchronous global recession. Economic and financial developments have been somewhat more favourable than expected at the time of the July *Monetary Policy Report*, although significant fragilities remain. Vigorous and coordinated fiscal and monetary policy stimulus in the G-20 economies, including a wide range of measures to support the flow of credit, have been sustaining aggregate demand, but evidence of self-sustaining private demand remains modest. Necessary adjustments on both the real and financial sides of the global economy are under way, and will involve a significant and protracted rotation of global demand, as well as deleveraging by U.S. and European banks, households, and firms.

Necessary adjustments on both the real and financial sides of the global economy are under way.

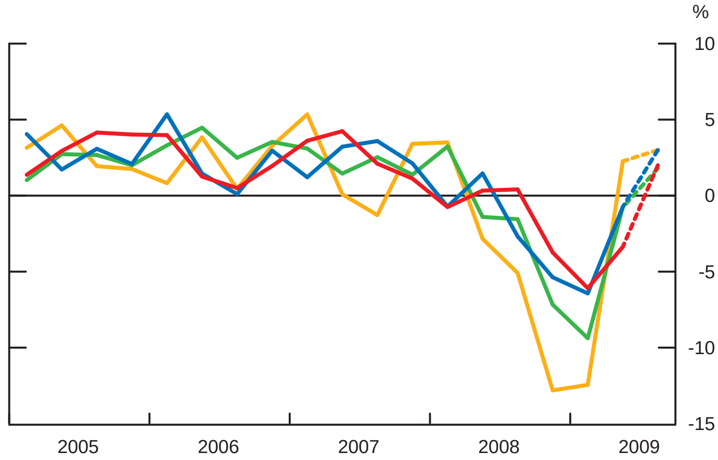
Led primarily by Asian economies, the turnaround in global output began in the second quarter, slightly earlier than anticipated. In the euro area and North American economies, real GDP declined further in the second quarter, as expected, although at a much slower pace than in preceding quarters. More recent monthly data suggest that global output picked up in the third quarter, partly reflecting the impact of the temporary fiscal measures that have been adopted in most major economies, as well as a short-term boost to growth from a turn in the inventory cycle **(Chart 1)**.

In the United States, recent indicators point to a rebound in real economic activity.

In the United States, annual comprehensive revisions to the national accounts show that, through the first quarter of 2009, the recession was even deeper than previously estimated.[1] However, as expected, real GDP declined at a much slower pace in the second quarter of 2009. Despite sizable fiscal stimulus, final domestic demand continued to fall, with additional reductions in household consumption and further large declines in private fixed investment. De-stocking also continued during the second quarter. More recent indicators, such as an improvement in consumer confidence and a rise in new manufacturing orders, point to a rebound in aggregate real economic activity in the third quarter. However, this rebound appears to be related largely to a turn in the inventory cycle and to the temporary support provided by government stimulus programs. The U.S. government's Car Allowance Rebate System (CARS), which ended in late August, provided a major boost to auto sales and production during the third quarter. At the same time, aided partly by the government's tax credit program for first-time homebuyers, the housing sector appears to have bottomed out, and some firming in house prices is evident.

1 The decline in real GDP through the first quarter of 2009, from its peak in the second quarter of 2008, is now 3.7 per cent, compared with the previously reported 3.1 per cent.

Chart 1: Real GDP growth in the major economies points to the start of a global recovery
Quarterly growth at annual rates



Note: The values for 2009Q3 are estimates.
Sources: Statistics Canada, U.S. Bureau of Economic Analysis, Eurostat, Japan Statistics Bureau, and Bank of Canada calculations

Real economic activity in major overseas countries was stronger than expected.

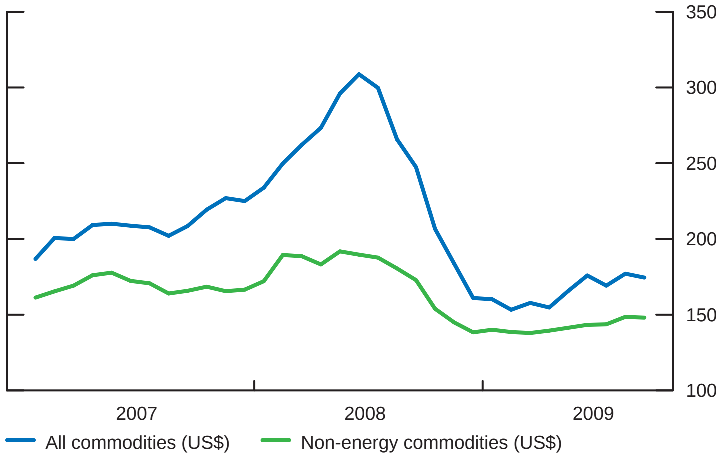
Real economic activity in major overseas countries was stronger than expected, with France, Germany, and Japan all recording positive growth in the second quarter. Growth in the euro area as a whole contracted slightly, but still exceeded expectations. The favourable developments in Europe mainly reflect more robust household spending, buoyed by temporary government incentive programs for car purchases and substantial support from automatic stabilizers. The combination of inventory adjustments that appear to be well advanced, relatively strong data for new orders in the manufacturing sector, more positive surveys for the services sector, and a general improvement in household and business confidence suggests that the euro area economy troughed in the second quarter. Growth in Japan was supported by government cash transfers to low-income households and tax rebates on energy-efficient vehicles and home appliances. A rebound in exports of automobiles and electronics from a very weak level also contributed to stronger real GDP growth.

Economic growth in China in the second quarter was also stronger than anticipated, reflecting the impact of massive fiscal stimulus concentrated in infrastructure projects and incentives for consumer spending. Rapid credit expansion has also fuelled a sharp pickup in consumption and investment. In the rest of the world, following a larger-than-anticipated contraction in the first quarter, available data suggest that growth resumed in the second quarter. There are considerable disparities across regions, however, with emerging economies in Asia rebounding the most strongly, aided by the strength in China and by supportive macroeconomic policies.

Commodity prices have firmed.

World oil prices and, to a lesser extent, non-energy commodity prices (particularly metals) have firmed since their trough in the first quarter, but nonetheless remain well below the levels reached in mid-2008 **(Chart 2)**. A strong increase in demand from China, associated with large, commodity-intensive infrastructure projects and some accumulation for investment purposes, has been a key contributor to the recent rise in commodity prices. The improved outlook for demand and the reduction in financing costs have provided greater incentives for companies to build inventories. These factors, together with supply cuts by OPEC, have also helped boost world oil prices.

Chart 2: Commodity prices have firmed since the first quarter
Bank of Canada commodity price index (1982–90 = 100), monthly data



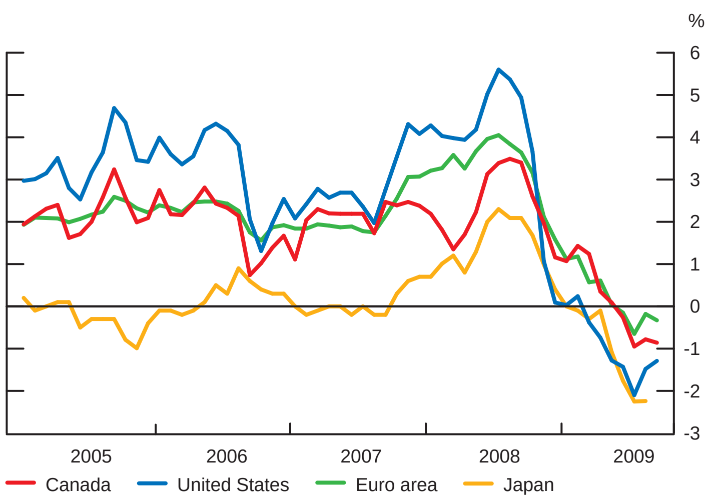
Source: Bank of Canada

In contrast to developments in the oil sector, natural gas prices have remained relatively low because of the considerable excess supply in the North American market, stemming mainly from a shift in U.S. production towards unconventional sources (shale gas) **(Technical Box 1)**.

As expected, total consumer price inflation has fallen sharply around the world since mid-2008, reflecting the sizable decline in oil and other commodity prices through early 2009. Indeed, annual rates of total inflation in most advanced economies are now below zero **(Chart 3)**. The emergence of excess supply has also dampened underlying inflation rates. This downward pressure on core inflation has been mitigated in many economies, however, by the aggressive monetary policy actions taken early in the crisis **(Chart 4)**, which have helped to anchor long-term inflation expectations, and also by price and wage rigidities, particularly in the services sector.

Annual rates of total CPI inflation in most advanced economies are now below zero.

Chart 3: Total CPI has fallen in most advanced economies
Year-over-year percentage change, monthly data



Sources: Statistics Canada, U.S. Bureau of Economic Analysis, Eurostat, and Japan Statistics Bureau

Technical Box 1

Recent Developments in the Natural Gas Sector

World prices for many commodities have risen since the start of the year, with the important exception of natural gas. After reaching a high of over US$13/Mbtu in mid-2008, natural gas prices are now hovering near US$4/Mbtu, up slightly from their recent lows. Oil prices, however, have increased substantially in 2009 **(Chart 1-A)**. Since 1980, the ratio of the price of a barrel of crude oil to the price of an Mbtu of natural gas has been approximately 9:1; the current ratio of around 21:1 is exceptionally high.[1] This divergence is explained by the development of shale gas in the United States, which contributed to an 8 per cent rise in U.S. production in 2008 (one of the largest increases since the 1970s). Increased supply, combined with decreased demand resulting from the global economic downturn, has led to record storage levels and persistently low prices in the North American market for natural gas **(Chart 1-B)**.

This is a noteworthy development for the Canadian economy, given the importance of the natural gas sector for Canada's exports. Its contribution to net exports as a proportion of GDP has remained larger than that of crude oil, despite the increase in the ratio of net exports of crude oil to GDP in recent years **(Table 1-A)**. From 1996 to 2005, the natural gas sector's share of Canadian total gross output has more than tripled, increasing from 0.6 per cent to 2 per cent.[2] The sector's share of total Canadian production by 2005 was roughly the same as that of crude oil.

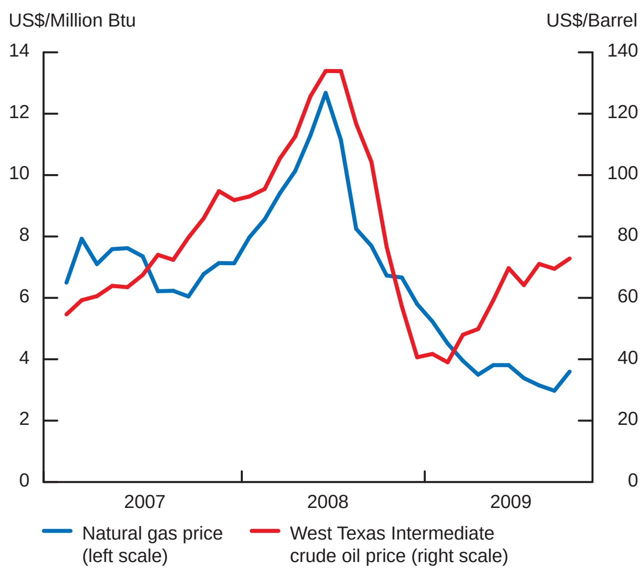
The weaker profile for natural gas prices in recent quarters has reduced drilling activity and will depress investment in this sector for a period of time.

Table 1-A: Canada's net exports of crude oil and natural gas
(As a percentage of GDP)

Sector	1996	2000	2005	2007	2008
Crude oil	0.5	0.5	0.6	1.1	1.7
Natural gas	0.9	1.9	2.6	1.8	2.1

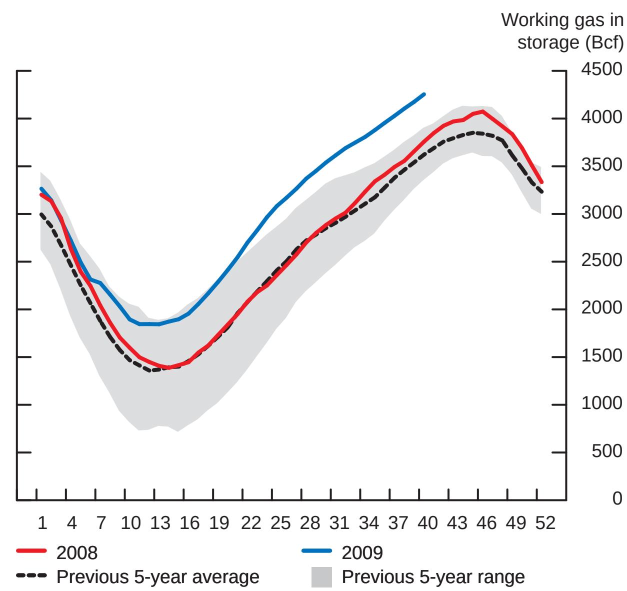
1 The heat-content ratio of oil to natural gas is 6:1.
2 The contributions to gross production are calculated using input-output tables.

Chart 1-A: Natural gas prices are weak compared with crude oil prices . . .
Monthly data



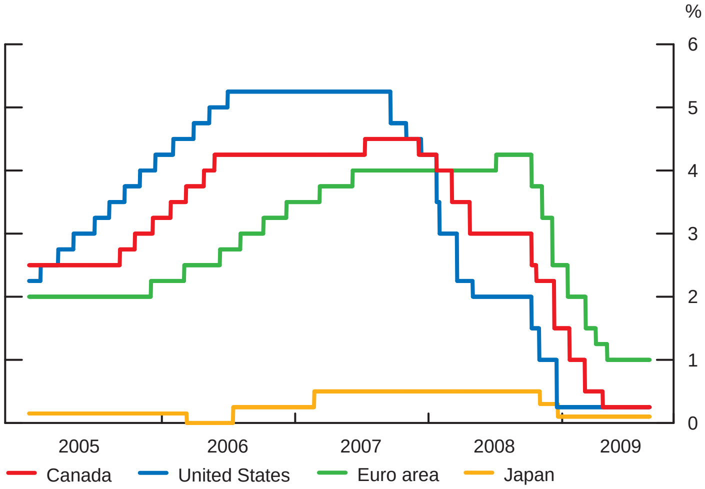
Note: Values for crude oil and natural gas prices in October 2009 are estimates based on the average daily spot prices up to 16 October 2009.
Source: NYMEX

Chart 1-B: . . . reflecting excess supply in the North American natural gas market
Weekly data



Sources: EIA, Enerdata

Chart 4: Policy rates have remained at historic lows in most countries
Daily data



Sources: Bank of Canada, U.S. Federal Reserve, European Central Bank, and Bank of Japan

Developments in Global Financial Markets

Conditions in global financial markets have improved substantially and somewhat more rapidly than anticipated in recent months, consistent with the view that the global recession has bottomed out and that the probability of an extreme negative outcome has receded. These improvements, if sustained, will help repair household and business balance sheets and boost confidence, supporting growth in the real economy.

Conditions in global financial markets have improved substantially and somewhat more rapidly than anticipated . . . .

Nevertheless, strains remain in certain markets, and further setbacks are possible. Although signs of recovery are apparent, securitization markets are still operating at a fraction of their pre-crisis levels and credit conditions at banks are still relatively tight, owing to ongoing deleveraging. While recent increases in asset prices are helping, the deterioration in loan quality associated with the economic downturn is likely to prolong the deleveraging process. Stimulative monetary policies and direct interventions in specific markets have remained an important source of support.

. . . Nevertheless, strains remain in certain markets, and further setbacks are possible.

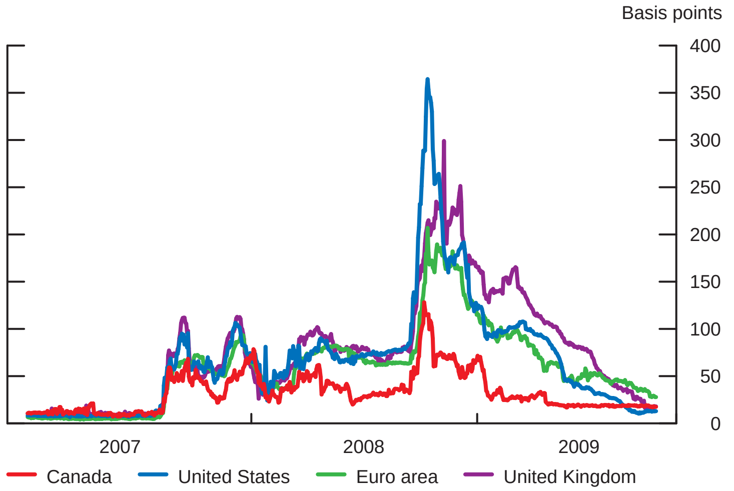
Funding markets for financial institutions have been normalizing, with interest rate levels reaching record lows, and spreads in short-term funding markets falling below pre-Lehman levels **(Chart 5)**. As a result, recourse to central bank facilities has diminished considerably, and a number of central banks have begun to reduce some of their extraordinary liquidity programs. Increasingly, large financial institutions have also been able to access the market for longer-term financing without direct government guarantees.

Financing conditions for businesses have improved as well. For both financial and non-financial issuers, credit spreads are down substantially from their peaks, although they remain elevated relative to their historical averages. With the yields on benchmark government bonds remaining relatively low, overall corporate yields are now well below the levels that prevailed earlier this year **(Chart 6)**. Improved market access has contributed to a record amount of global long-term corporate bond issuance since the beginning of the year. In addition, global equity markets have registered strong gains since the troughs reached in March.

Chart 5: Short-term funding markets have improved greatly

Difference between 3-month interbank offered rates and their respective overnight index swaps[a]

Daily data



a. For the United States and the United Kingdom, LIBOR; for the Euro area, EURIBOR; and for Canada, CDOR

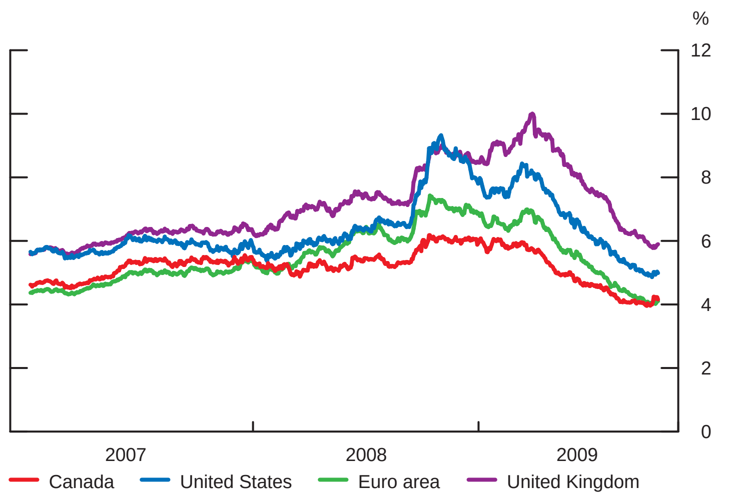
Source: Bloomberg

Despite these marked improvements in global financial markets, bank lending conditions for households remain relatively tight outside of Canada. Banks in the euro area and the United States continue to restrict access to credit for most types of loans, although surveys of senior loan officers show that the pace of credit tightening is slowing. The combination of tighter credit conditions and depressed demand have halted growth in household credit in the euro area and produced outright contractions in the United States.

While policy interventions have helped to stabilize global financial markets and to improve credit conditions, additional comprehensive and timely actions will be needed to put the recovery on a firm footing and reduce the probability of future crises.

Chart 6: Borrowing costs for businesses have come down markedly[a]

Daily data



a. Yields on investment-grade corporate bonds. Series may not be comparable across countries, owing to differences in the mix of credit ratings and duration in different domestic bond markets.

Sources: Merrill Lynch and Bloomberg

Outlook for the Global Economy

The outlook for global economic growth in the second half of 2009 and through 2010 has strengthened since the July *Report*, particularly for China and smaller emerging economies in Asia. However, considerable uncertainty still surrounds the global outlook. The recovery is expected to be more gradual than usual. This is because underlying private demand in many economies is expected to recover only slowly as significant balance-sheet and structural adjustments run their course. Experience shows that recessions precipitated by financial crises have larger and longer-lasting adverse effects on potential output than do other types of recessions. The significant rotation in global demand that will be required to put growth on a sustainable path will make the adjustment process especially challenging.

The outlook for global economic growth has strengthened since the July Report, *particularly for China and smaller emerging economies in Asia.*

Our estimates suggest that the growth of global production potential will slow from over 4 per cent in the years just prior to the crisis to about 3 per cent during the 2009–11 period. In that context, the Bank now expects the global economy to shrink by 1.6 per cent in 2009, followed by growth of 3.1 per cent in 2010 and 4.0 per cent in 2011 **(Table 1)**.

The Bank expects the global economy to shrink by 1.6 per cent in 2009, followed by growth of 3.1 per cent in 2010 and 4.0 per cent in 2011.

The gradual recovery is underpinned by the same factors highlighted in our previous projections. First, the fiscal and monetary stimulus in place should continue to support domestic demand. Part of this has already come through the effects of lower interest rates and rising asset prices on wealth. Second, a further gradual normalization of financial markets and the completion of deleveraging in the financial sector should result in increased availability of credit to businesses and households. Third, the turn in the inventory cycle and the completion of stock adjustment in the housing sectors of several economies should contribute positively to overall growth.

With the level of world aggregate demand expected to recover only gradually, significant excess capacity in the global economy should persist over the projection horizon, contributing to a subdued inflation profile.

In the United States, the pace of the recovery starting in the third quarter of 2009 is projected to be somewhat faster than in the July *Report*, since some of the ongoing adjustments in the economy appear to be more advanced than previously assumed. Fiscal stimulus, together with a positive boost from inventories, should be key contributors to the recovery. The rebound in consumption expenditures is projected to be more moderate than in previous cycles, however, largely reflecting the need for households to rebuild savings following the sharp decline in their wealth. This adjustment brings the share of

In the United States, ongoing adjustments in the economy appear to be more advanced than previously assumed.

Table 1: Projection for global economic growth

	Share of real global GDP[a] (per cent)	Projected growth (per cent)[b]			
		2008	2009	2010	2011
United States	21	0.4 *(1.1)*	-2.5 *(-2.4)*	1.8 *(1.4)*	3.8 *(3.4)*
Euro area	16	0.5 *(0.6)*	-3.9 *(-4.4)*	0.9 *(0.7)*	2.4 *(2.4)*
Japan	7	-0.7 *(-0.7)*	-5.7 *(-6.0)*	1.7 *(1.9)*	2.5 *(2.8)*
China	11	9.1 *(9.1)*	8.1 *(7.8)*	8.9 *(8.3)*	8.9 *(9.6)*
Rest of the world	45	3.9 *(3.9)*	-2.1 *(-2.1)*	3.3 *(1.9)*	3.7 *(3.5)*
World	**100**	**2.9 *(3.0)***	**-1.6 *(-1.7)***	**3.1 *(2.3)***	**4.0 *(3.9)***

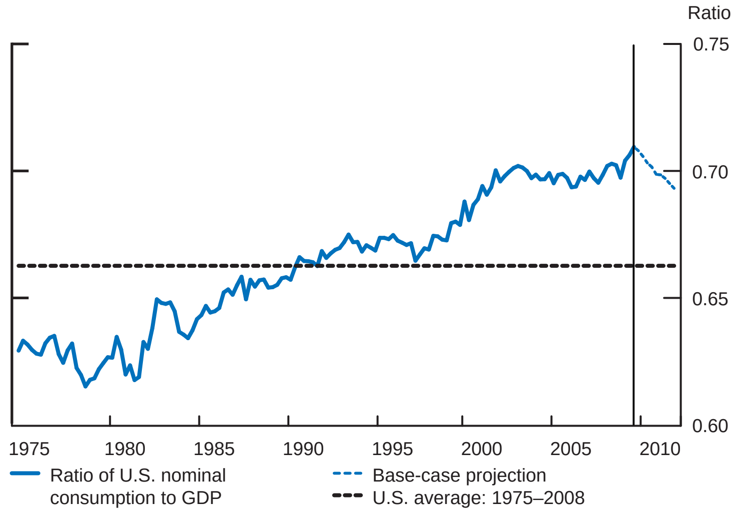
a. GDP shares are based on IMF estimates of the purchasing-power-parity (PPP) valuation of country GDPs for 2007.
Source: IMF, *WEO*, April 2009.
b. Numbers in parentheses are projections used for the July 2009 *Monetary Policy Report*.
Source: Bank of Canada

U.S. real GDP is expected to decline by 2.5 per cent in 2009, and to grow by 1.8 per cent in 2010 and by 3.8 per cent in 2011.

consumer spending in GDP over the projection horizon closer to its long-run average **(Chart 7)**. Consumption will also be restrained by continued weakness in disposable income as labour market conditions deteriorate further over the coming quarters, and by credit conditions that remain relatively tight. A gradual recovery in residential investment is expected to have begun in the second half of 2009, somewhat earlier than anticipated, because of the impact on home sales of the tax credit for first-time homebuyers and more favourable levels of housing inventory. Overall, U.S. growth is still expected to be muted **(Chart 8)**, with real GDP now expected to decline by 2.5 per cent in 2009, and to grow by 1.8 per cent in 2010 and by 3.8 per cent in 2011.

Chart 7: U.S. consumer spending is projected to converge slowly towards its long-run average

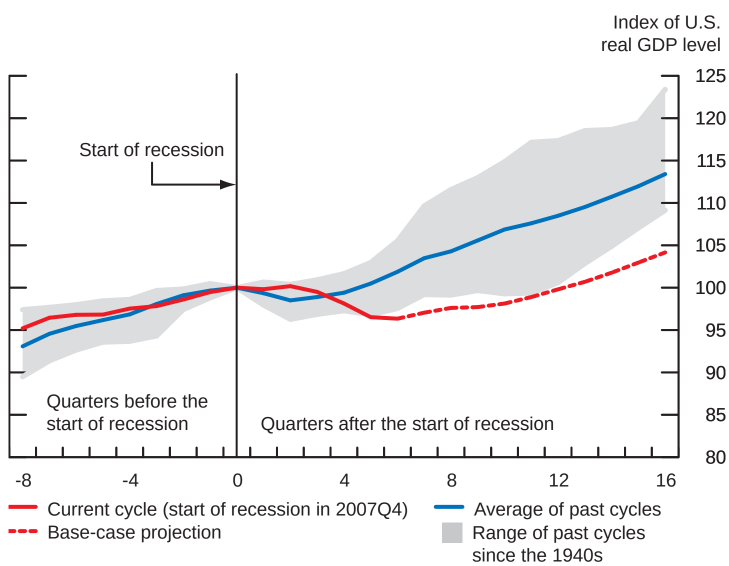
Ratio of nominal consumption to GDP, quarterly data



Sources: U.S. Bureau of Economic Analysis and Bank of Canada calculations

Chart 8: The U.S. economic recovery is expected to be more subdued than in the past

Comparison of U.S. real GDP across business cycles; start of recession = 100, quarterly data



Sources: U.S. Bureau of Economic Analysis, NBER (dating of cycles), and Bank of Canada calculations

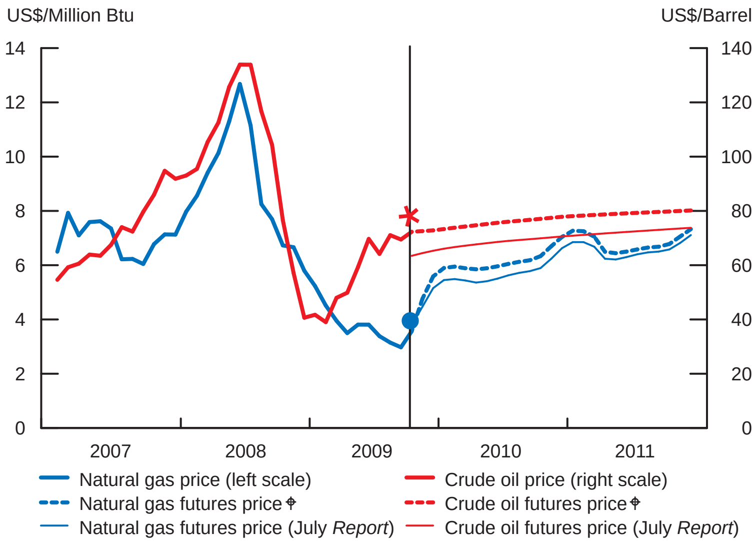
In the euro area, the rebound in the second half of 2009 and in 2010 is also projected to be somewhat stronger than in July, reflecting a larger impact from the fiscal stimulus than previously assumed. The recovery should, nonetheless, be more subdued than in the United States, partly because of less-aggressive policy actions and the greater adjustments still needed in the euro area's banking system. The recovery in household consumption will likely be restrained by the deterioration in labour markets and relatively tight credit conditions. In Japan, the recovery is supported by the completion of the inventory correction and ongoing monetary and fiscal stimulus.

Economic growth in China is expected to remain robust, supported by highly accommodative monetary and fiscal policies. Bank credit has been growing at an extraordinarily rapid rate, creating the possibility of some resource misallocation. Smaller emerging economies in Asia have already started to recover from a sharp downturn in industrial production and exports, and should continue to benefit from a pickup in global trade and the solid expansion in China. Other developing and emerging-market economies are expected to recover gradually over the coming years, aided by a resumption of capital flows and expansionary fiscal and monetary policies. The growing contribution of developing and emerging-market economies to global demand should provide further support to commodity prices **(Chart 9)**. While there may be continued short-term volatility, commodity prices are projected to continue to increase as the global economy recovers in 2010 and 2011.

Economic growth in China is expected to remain robust, supported by highly accommodative monetary and fiscal policies.

Chart 9: Futures curves suggest rising prices for crude oil and natural gas

Monthly data



* Spot price for crude oil (16 October 2009)

• Spot price for natural gas (16 October 2009)

⌖ Based on an average of futures contracts over the two weeks ending 16 October 2009

Note: Values for crude oil and natural gas prices in October 2009 are estimates based on the average daily spot prices up to 16 October 2009.

Source: NYMEX

The Canadian Economy

Following three consecutive quarters of sharp contraction, economic growth has resumed in Canada. This recovery is supported by monetary and fiscal stimulus, increased household wealth, improving financial conditions, stronger business and consumer confidence, the beginning of the recovery in the global economy, and a strengthening in the terms of trade. The Bank's base-case projection now sees slightly stronger growth in the second half of 2009 than was projected in the July *Report*. Over the balance of the projection period, growth is slightly lower, reflecting the effect of the higher value of the Canadian dollar. The economy is now projected to return to full capacity in the third quarter of 2011, one quarter later than anticipated in July.

Following three consecutive quarters of sharp contraction, economic growth has resumed in Canada.

Recent Developments

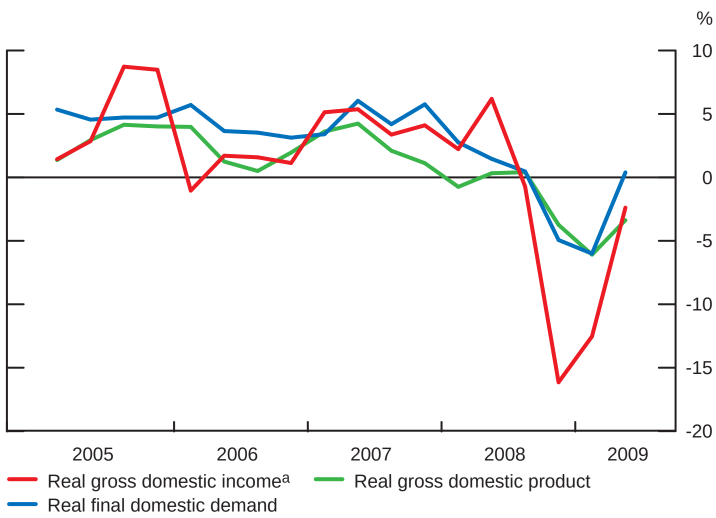
Aggregate Demand and Supply

As expected, the recession in Canada deepened significantly in the second quarter, with real GDP falling by an additional 3.4 per cent (at annual rates), in line with the July projection. Real gross domestic income (GDI) also declined further, but at a much slower pace than in the previous two quarters, owing to a partial rebound in Canada's terms of trade **(Chart 10)**.

As expected, the recession deepened significantly in the second quarter.

Chart 10: Canadian real gross domestic income continued to fall in the second quarter, but by less than real gross domestic product

Quarterly growth at annual rates



a. Real gross domestic income is current-dollar domestic product deflated by the price index for final domestic demand.

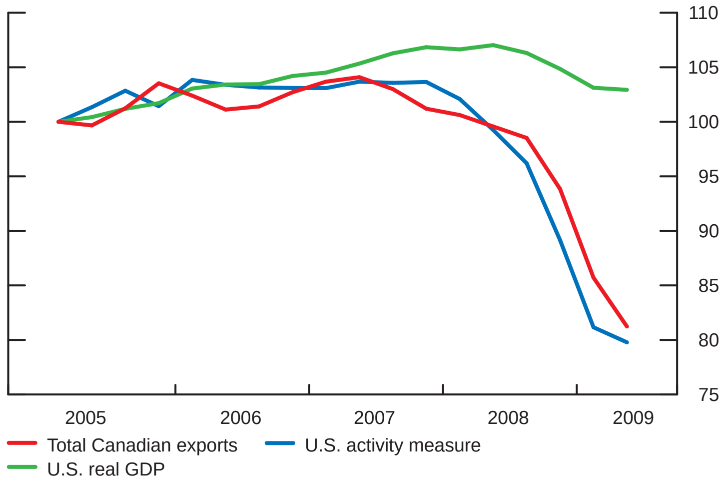
Sources: Statistics Canada and Bank of Canada calculations

Exports continued to plunge, while businesses further curtailed employment and fixed investments.

Exports continued to plunge, consistent with the steep drop in U.S. demand **(Chart 11)**, while businesses further curtailed employment and fixed investments. The drop in exports, following an exceptionally large contraction in the first quarter, marks the eighth consecutive quarterly decline. While the weakness was generalized, exports of machinery and equipment and natural gas posted particularly large declines. The sharp fall in business investment reflected uncertainty about the timing and strength of the global recovery, substantial excess capacity, and deteriorating profits. Although firms drew down inventories at a slightly faster pace, sales fell even more rapidly, causing the stock-to-sales ratio to increase further **(Chart 12)**.

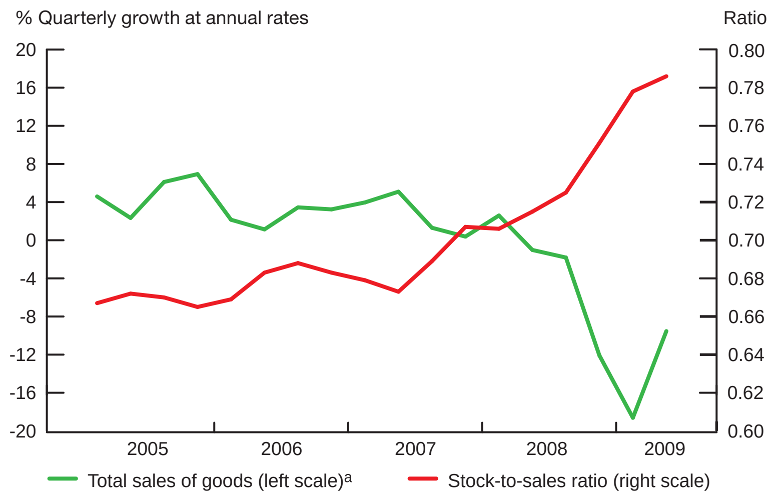
Chart 11: Canadian exports have plunged, largely owing to the weakness in U.S. demand

Index: 2005Q1 = 100



Sources: U.S. Bureau of Economic Analysis, U.S. Federal Reserve, Statistics Canada, and Bank of Canada calculations

Chart 12: Falling sales have led to a further increase in the stock-to-sales ratio



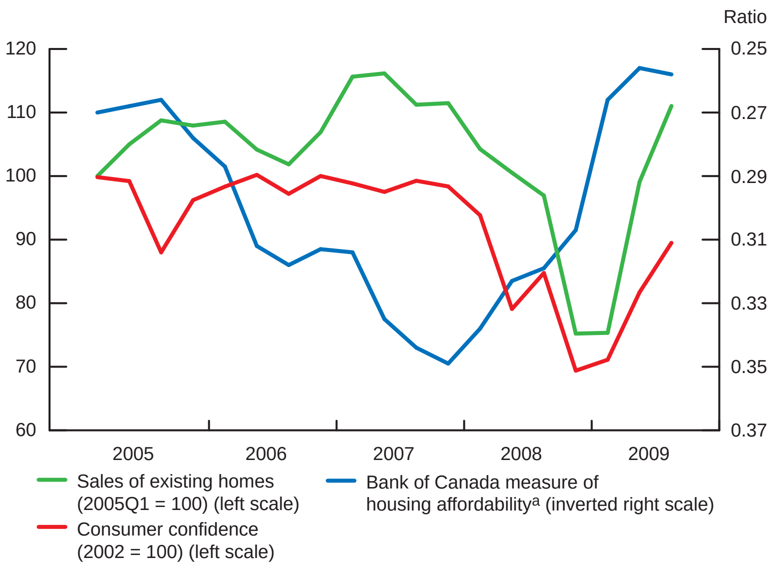
a. Total sales of goods is final domestic demand less consumption of services plus exports of goods, all in constant dollars.

Sources: Statistics Canada and Bank of Canada calculations

In contrast, household spending began to recover in the second quarter in response to substantial monetary and fiscal stimulus and improved consumer confidence. Expenditures on consumer durables and residential investment picked up strongly. In addition to improved affordability, the sharp rebound in sales of existing homes reflected pent-up demand from the height of the financial crisis **(Chart 13)**. Fiscal incentives also helped to fuel renovation activity. Government expenditures were another important source of demand, contributing 1.2 percentage points to growth (at annual rates) in the quarter.

In contrast, household spending began to recover in the second quarter.

Chart 13: Solid growth in the housing sector reflects continued improvements in consumer confidence and favourable affordability
Quarterly data



a. The value for the third quarter of 2009 is an estimate. This measure captures mortgage payments on a typical house purchase as a ratio of average disposable income and does not include property taxes, insurance, and utility costs. A decline in the ratio indicates an improvement in affordability. For more information on this measure, see <http://credit.bankofcanada.ca>.

Sources: Multiple Listing Service (MLS), Conference Board of Canada, and Bank of Canada calculations

Available indicators, including the recent pickup in employment, suggest that real GDP growth resumed in the third quarter. Household spending continued to recover, and the contribution of government expenditures increased. Growth was also boosted by a substantial rise in Canadian automobile production, as major auto companies reopened some of the capacity they had shuttered earlier this year and as inventories that were drawn down as a result of the U.S. CARS program were rebuilt. These factors should lead to a temporary surge in automotive exports **(Technical Box 2)**. Recent data suggest, however, that imports increased even more sharply in the quarter, so that the trade balance continued to subtract from growth. Business investment is also expected to have fallen further, given ongoing uncertainty about the strength of the global recovery. Firms are expected to have continued drawing down inventories, although by a lesser amount than in the second quarter. Coupled with the pickup in sales, these developments should lead to a decline in the stock-to-sales ratio.

Available indicators, including the recent pickup in employment, suggest that real GDP growth resumed in the third quarter.

In the April *Report*, the Bank revised down its estimate of potential output growth over the 2009–11 period, owing to the important structural changes under way in the Canadian economy and the sizable drop in investment. In this *Report*, the Bank has revisited its assumptions for both trend labour productivity and trend labour input, and has concluded that the profile

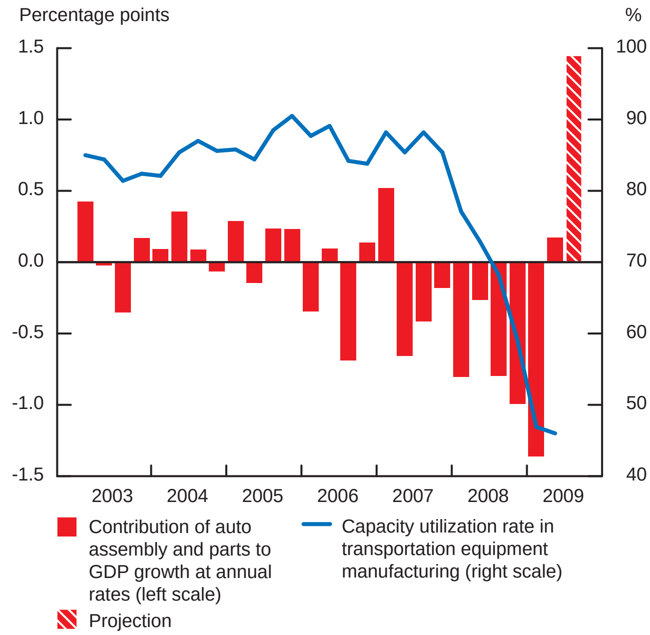
Technical Box 2

The Role of the Automotive Sector in the Recession and the Recovery

The automotive industry is playing a disproportionately large role in the quarterly dynamics of Canadian GDP this year **(Chart 2-A)**.[1] In the first half of 2009, Canadian automotive production plummeted as a result of the restructuring of the North American auto sector and the ongoing decline in motor vehicle sales in the United States. About three-quarters of all vehicles produced in Canada are exported to the United States. Owing to the importance of automotive products in Canadian exports, the latter contracted sharply in the first two quarters of 2009, declining by 30.4 per cent and 19.3 per cent (at annual rates), respectively. The partial resumption of automotive production in the third quarter is expected to provide a large, albeit temporary, boost to growth in both exports and GDP.

Thereafter, Canadian production of motor vehicles and parts is expected to increase gradually. A small econometric model estimated by Bank staff suggests that Canadian motor vehicle production will be roughly 2.2 million units by 2012. Although this represents an 80 per cent increase from the level expected to be achieved in 2009, it is nonetheless well below its pre-crisis average of about 2.6 million units. Indeed, it is expected that motor vehicle sales in the U.S. market will remain low over the next few years, relative to pre-crisis levels, as U.S. households restore their balance sheets.

Chart 2-A: Automotive production is playing an important role in real GDP growth this year



Sources: Statistics Canada and Bank of Canada calculations

1 The automotive industry accounted for about 1.5 per cent of Canadian GDP in 2008.

The growth of potential output is expected to trough at 1.2 per cent in 2009, and then pick up to 1.5 per cent in 2010 and 1.9 per cent in 2011.

assumed in April remains appropriate. The growth of potential output is expected to trough at 1.2 per cent in 2009, and then to gradually pick up to 1.5 per cent in 2010 and 1.9 per cent in 2011 **(Technical Box 3)**. It is important to note that considerable uncertainty surrounds estimates of potential output, especially when the economy is coming out of a deep recession.

Estimated Pressures on Capacity

There continued to be a substantial amount of excess supply in the Canadian economy in the third quarter. The Bank's conventional measure of the output gap was roughly unchanged at -4 per cent **(Chart 14)**. In assessing excess capacity, the Bank considers its conventional measure in conjunction with several other indicators, particularly since this measure tends to have a high margin of error around turning points. The Bank's autumn *Business Outlook Survey* (<http://www.bankofcanada.ca/en/bos/2009/autumn/bos1009e.pdf>) reported that the percentage of firms that would have difficulty meeting an unanticipated increase in demand fell to its lowest level since the series began in 1999.

Technical Box 3

Revisions to Potential Output

Each October, the Bank reassesses the path for potential output that underpins its economic outlook. Potential output is the level of goods and services that the economy can produce on a sustained basis without adding to inflation pressures. It can be thought of as the product of trend labour productivity and trend labour input.

Trend labour productivity is related mainly to the amount of capital per worker and the pace of technological change. The recession has reduced the capital-to-labour ratio, at least over the short term, by reducing investment below its trend and accelerating structural change in the economy. Structural change is a normal feature of any economy, but recessions typically bring some of these changes forward and concentrate them into a shorter time period. In 2008 and in the first half of 2009, many sectors of the economy—most notably the automotive and forestry sectors—underwent significant adjustment. These changes included the permanent removal of some production capital. Much of this capital will eventually be reallocated to other firms, but the process will take time. There will also be adjustment costs as labour is gradually redeployed to other activities. With all of these developments taken into account, as well as the generally poor track record of labour productivity growth over the past several years, the Bank's working hypothesis is that trend labour productivity will decline by 0.2 per cent this year and then rise by 0.2 per cent in 2010 and by 0.9 per cent in 2011 **(Table 3-A)**.

The growth rate of trend labour input is expected to decrease gradually over the next few years, largely reflecting a decline in the growth rate of the working-age population. Trend average hours worked are expected to be broadly stable, while the trend employment ratio is expected to fall only slightly. Taken together, this implies a growth rate of trend labour input of 1.4 per cent in 2009, 1.3 per cent in 2010, and 1.0 per cent in 2011. The expected growth rates for trend labour input are about 0.1 percentage point higher in 2009 and 2010 than assumed in the October 2008 *Report*. This small upward revision reflects two factors: The working-age population has expanded a little more quickly in the past year than anticipated, and the wealth destruction from the financial crisis is expected to boost labour supply slightly over 2009–10. Since both of these effects are assumed to be temporary, the growth rate of trend labour input is slightly slower in 2011 than projected in October 2008.

These profiles for the growth of trend labour productivity and trend labour input imply growth rates for potential output growth of 1.2 per cent in 2009, 1.5 per cent in 2010, and 1.9 per cent in 2011.[1] This path for potential output is the same as in the April *Report*.

Beyond 2011, the impact of restructuring is expected to diminish, helping to boost the growth of total factor productivity. This, combined with a pickup in capital deepening as investment growth strengthens, will raise trend labour productivity growth to 1.2 per cent by 2012, its longer-run average. By contrast, the growth of labour input is expected to slow as the effects of an aging population begin to weigh more heavily. As a result, potential output is assumed to grow by 1.9 per cent in 2012.

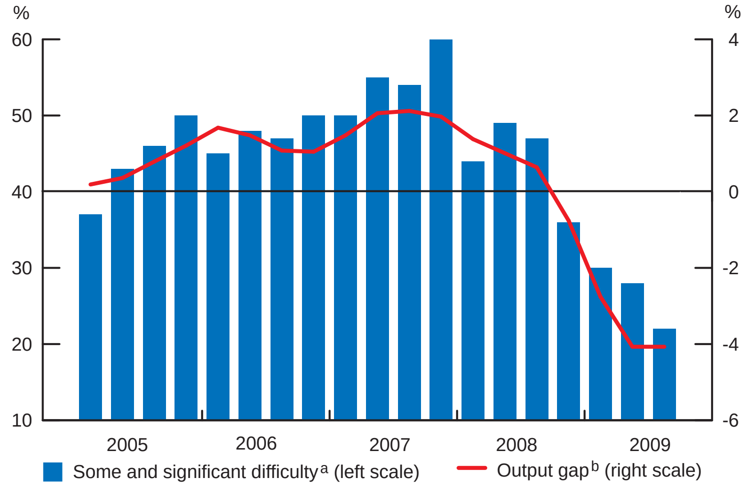
Table 3-A: Assumptions for the growth of potential output

	2009	2010	2011	2012
Potential output:	**1.2** *(2.4)*	**1.5** *(2.5)*	**1.9** *(2.5)*	**1.9**
Trend labour input	1.4 *(1.25)*	1.3 *(1.25)*	1.0 *(1.25)*	0.7
Trend labour productivity	-0.2 *(1.1)*	0.2 *(1.2)*	0.9 *(1.2)*	1.2
Memo item:				
Potential output: April 2009	1.2	1.5	1.9	

Note: Figures in parentheses correspond to the October 2008 scenario.

1 The estimate for 2009 takes into account the various indicators of current capacity pressures.

Chart 14: A substantial degree of excess supply remains in the Canadian economy



a. Response to *Business Outlook Survey* question on capacity pressures. Percentage of firms indicating that they would have either some or significant difficulty meeting an unanticipated increase in demand/sales.
b. Difference between actual output and estimated potential output. The estimate for the third quarter of 2009 is based on a projected increase in output of 2 per cent (at annual rates) for the quarter.
Source: Bank of Canada

Recent indicators suggest that the labour market may have stopped deteriorating, consistent with excess supply reaching its peak level. Employment and average hours worked have picked up in recent months, and the unemployment rate edged back down to 8.4 per cent in September. Weakness in the private sector labour market is nonetheless evident in the Bank's autumn *Business Outlook Survey*, in which the percentage of firms reporting labour shortages remained largely unchanged at a very low level. As well, wage growth—as measured by average hourly earnings of permanent workers—has recently decelerated.

The Bank judges that the economy was operating about 3 1/2 per cent below its production capacity in the third quarter.

After reviewing all the indicators of capacity pressures and taking into account the weakness in potential output associated with the ongoing restructuring in the Canadian economy, the Bank judges that the economy was operating about 3 1/2 per cent below its production capacity in the third quarter of 2009, in line with the July projection.

Inflation and the 2 Per Cent Target

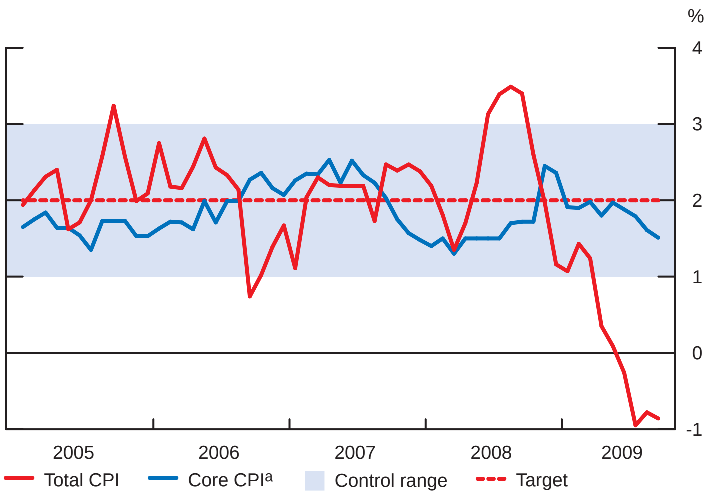
Total CPI inflation troughed at -0.9 per cent in the third quarter. Core inflation fell to 1.5 per cent in September.

Total CPI inflation continued to decline in the third quarter of 2009, as anticipated in the July *Report*. The 12-month rate of change in total CPI troughed at -0.9 per cent in the quarter, as a result of large year-over-year declines in energy prices **(Chart 15)**. Core inflation fell from 1.9 per cent in June to 1.5 per cent in September, owing to the substantial excess supply in the economy and the continued deceleration in core food price inflation.

Measures of inflation expectations have been stable in recent months. Near-term inflation expectations remain at very low levels, in line with past movements in energy prices. The latest Consensus Economics forecasts for 2010 and beyond remain close to the 2 per cent inflation target. The Bank's most recent *Business Outlook Survey* also showed that inflation expectations are concentrated within the Bank's inflation-control target range.

Chart 15: Total CPI inflation has troughed, and core inflation has declined

Year-over-year percentage change, monthly data



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

Source: Statistics Canada

Canadian Financial Conditions

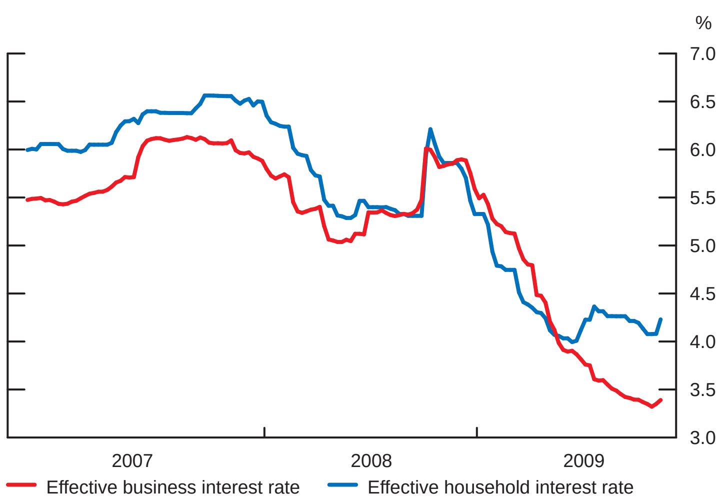
Canada's overall financial conditions continue to improve and to be more favourable than those in most other advanced economies. This improvement has been fairly broad based, as equity markets have continued to rally, credit spreads have narrowed further, and corporate bond issuance has remained strong.

Canada's overall financial conditions continue to improve and to be more favourable than those in most other advanced economies.

In particular, funding costs for Canadian banks remain at very low levels. Household borrowing costs are also very low by historical standards **(Chart 16** and **Table 2)**. Unlike the situation in most other advanced economies, Canadian consumers can readily obtain credit, as evidenced by

Chart 16: Borrowing costs for Canadian households and businesses remain very low

Weekly data



Note: For more information on these series, see <http://credit.bankofcanada.ca/financialconditions>.

Source: Bank of Canada calculations

Table 2: Borrowing costs for households and businesses
Per cent

Date	Overnight rate	Prime rate	Estimated effective variable mortgage rate	Posted 5-year mortgage rate	3-month bankers' acceptances	Long-term corporate bond rate
31 July 2007	4.50	6.25	5.35	7.24	4.75	5.42
18 October 2007	4.50	6.25	5.65	7.43	4.85	5.41
6 December 2007	4.25	6.00	5.40	7.37	4.70	5.36
24 January 2008	4.00	5.75	5.25	7.39	4.06	5.30
24 April 2008	3.00	4.75	4.15	6.99	3.23	5.32
17 July 2008	3.00	4.75	4.20	7.09	3.29	5.48
23 October 2008	2.25	4.00	5.00	7.20	2.68	5.99
11 December 2008	1.50	3.50	4.50	6.73	1.77	6.04
22 January 2009	1.00	3.00	3.80	5.90	1.06	5.90
5 March 2009	0.50	2.50	3.30	5.74	0.69	5.86
23 April 2009	0.25	2.25	3.00	5.25	0.46	5.32
8 June 2009	0.25	2.25	2.85	5.52	0.43	4.83
23 July 2009	0.25	2.25	2.65	5.85	0.44	4.54
14 September 2009	0.25	2.25	2.45	5.50	0.43	4.08
16 October 2009	0.25	2.25	2.25	5.84	0.43	4.17

Sources: Long-term corporate bond rate, Bloomberg; all other series, Bank of Canada

the continued brisk pace in its growth **(Chart 17)**. The strength in household credit is linked to the rebound in the housing market and the pickup in renovation activity.

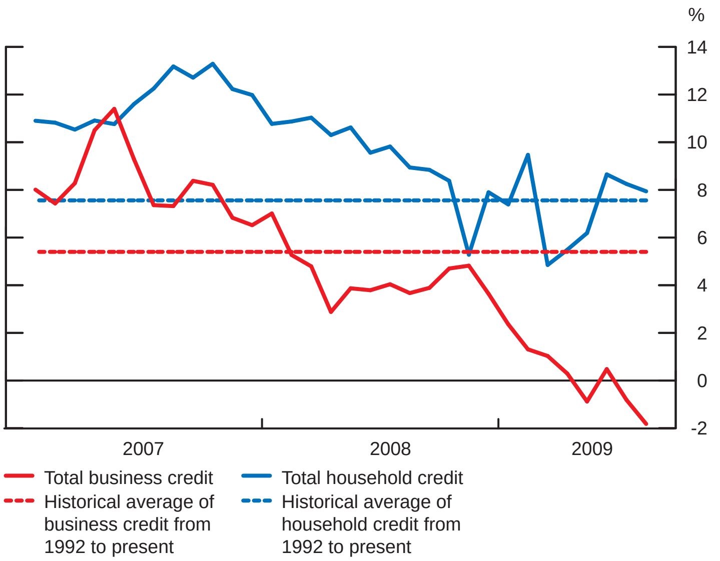
In contrast to household credit, business credit has been very weak recently, registering a modest decline in the three months to August. This sluggishness in business credit mainly reflects the weak outlook for business investment, although the availability of credit has likely also played a role. For larger corporations, the situation has improved over the past few months, as indicated, for instance, by the strong issuance activity in the Canadian corporate bond market. Borrowing costs for Canadian businesses have fallen further in recent months. The effective average interest rate on business borrowing has declined by about 15 basis points since the July *Report*, mainly as a result of the drop in corporate bond rates. Taken together, results from the Bank's latest *Senior Loan Officer Survey* (SLOS) (<http://www.bankofcanada.ca/en/slos/pdf/slos2009Q3.pdf>) and the *Business Outlook Survey* indicate that credit conditions for businesses were little changed in the third quarter, following a period of substantial tightening **(Chart 18)**.

The Bank's financial conditions index (FCI) has continued to improve since the July *Report* and is now well above its 10-year average. The level of the FCI reflects the exceptionally low level of the Bank's policy rate, which is offsetting spreads on corporate bonds that are still above the average for the decade, despite their recent compression. It is worth noting that because the exchange rate enters the FCI with a lag, it is not yet capturing the appreciation of the Canadian dollar since the spring. As well, the FCI assigns a very low weight to the SLOS measure of overall business-lending conditions. For these reasons, the Bank judges that the FCI currently overstates the improvement in financial conditions.

The monetary aggregates have continued to grow strongly. In the three months to August, the narrow aggregate M1+ grew at an annual rate of

Chart 17: The growth of household credit remains robust, while business credit continues to weaken

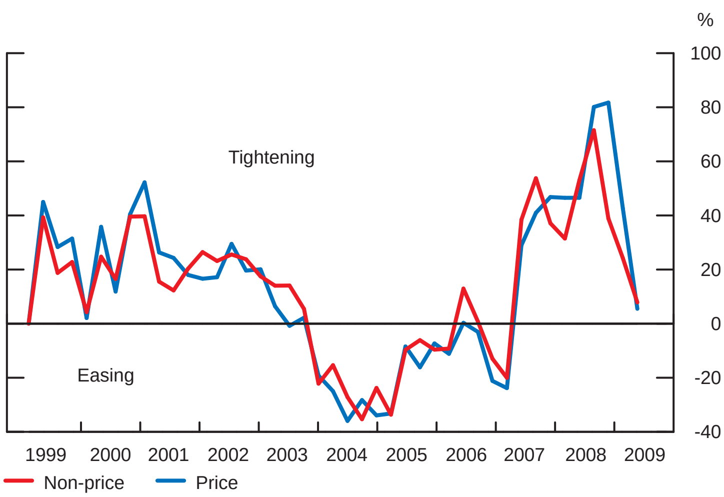
3-month percentage change (at annual rates)



Source: Bank of Canada

Chart 18: After a period of substantial tightening, credit conditions for businesses were little changed in the third quarter

Price and non-price lending conditions: Balance of opinion from *Senior Loan Officer Survey*[a]



a. The balance of opinion is calculated as the weighted percentage of surveyed financial institutions reporting tightened credit conditions minus the weighted percentage reporting eased credit conditions.

Note: Each series is the simple average of the balances of opinion for the small business, commercial, and corporate sectors.

Source: Bank of Canada

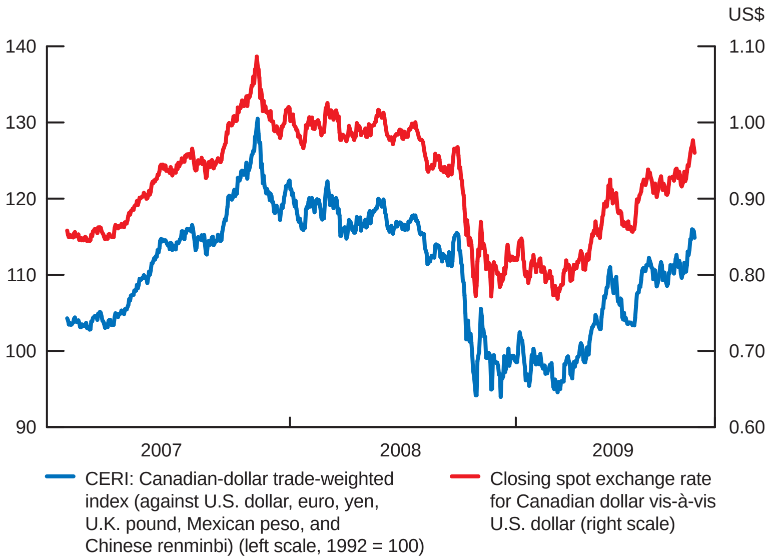
18.2 per cent, while M2++ grew by 7.0 per cent. It is difficult to assess the implications of monetary expansion for economic activity, since the demand for money is likely to be abnormally high in an environment of very low interest rates and tight credit conditions. The continued robust growth in narrow money reflects the desire of both households and firms to keep money in liquid assets until it is clear that the economic recovery is taking hold. Consistent with our base-case projection, the growth in money balances is expected to gradually decline over time.

Exchange Rate

The Canadian dollar has appreciated sharply since the July Report*.*

The Canadian dollar remained relatively stable from July to early October, trading in a range of 90 to 94 cents U.S. More recently, however, it has appreciated sharply, averaging about 96 cents U.S. in the past 10 days, much higher than the 87 cents U.S. assumed at the time of the July *Report* **(Chart 19)**. While higher commodity prices have been supportive, movements in the Canadian dollar over the period appear to have been increasingly driven by a broader depreciation of the U.S. dollar against most major currencies.

Chart 19: The Canadian dollar has appreciated sharply since the July *Report*
Daily data



Note: A rise in the index indicates an appreciation of the Canadian dollar.
Source: Bank of Canada

Policy Response

Monetary policy in Canada has continued to be exceptionally stimulative. On 10 September and 20 October, the Bank of Canada maintained its target for the overnight interest rate at 1/4 per cent—the effective lower bound for this rate—and reaffirmed its commitment, conditional on the inflation outlook, to hold the policy rate at that level until the end of the second quarter of 2010.

Outlook for the Canadian Economy

The Bank's base-case projection incorporates the following key assumptions: a Canada/U.S. exchange rate averaging 96 cents U.S.; energy prices in line with recent futures prices; prices for non-energy commodities increasing progressively as the global economy recovers; and global credit conditions continuing to gradually improve.

Aggregate Demand and Supply

Overall, the outlook for Canadian GDP growth is similar to that presented in the July *Report* **(Table 3)**. The Bank now projects that growth will be slightly stronger in the second half of 2009 than expected in July **(Chart 20)**. In part, this more favourable near-term outlook reflects temporary factors, such as the rebound in auto production and pent-up demand for housing. On an average annual basis, the economy is projected to contract by 2.4 per cent

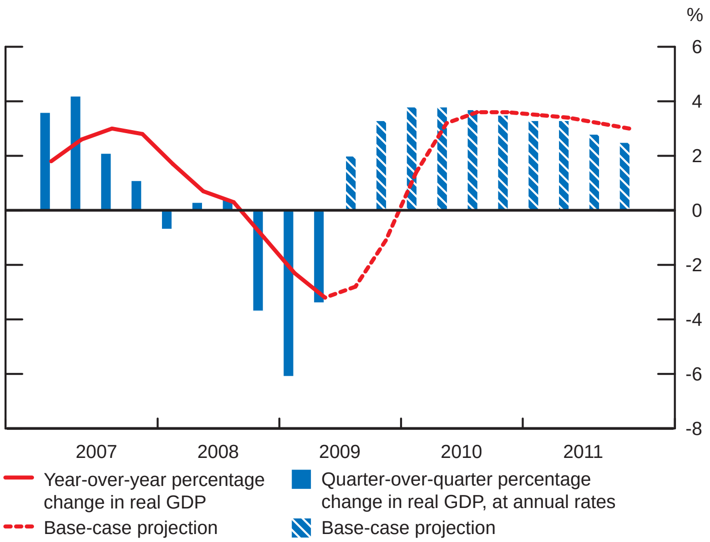
Table 3: Contributions to average annual real GDP growth

Percentage points[a]

	2008	2009	2010	2011
Consumption	1.7 *(1.7)*	0.0 *(-0.2)*	1.7 *(1.3)*	1.9 *(1.4)*
Housing	-0.2 *(-0.2)*	-0.5 *(-0.6)*	0.3 *(0.1)*	0.1 *(0.2)*
Government	1.2 *(1.1)*	1.0 *(1.0)*	1.3 *(1.3)*	-0.3 *(-0.4)*
Business fixed investment	0.0 *(0.0)*	-1.9 *(-1.6)*	0.1 *(0.1)*	0.9 *(0.9)*
Subtotal: Final domestic demand	2.7 *(2.6)*	-1.4 *(-1.4)*	3.4 *(2.8)*	2.6 *(2.1)*
Exports	-1.5 *(-1.6)*	-4.4 *(-5.3)*	1.9 *(2.0)*	1.9 *(2.4)*
Imports	-0.3 *(-0.3)*	4.6 *(5.7)*	-2.9 *(-2.8)*	-2.0 *(-2.3)*
Subtotal: Net exports	-1.8 *(-1.9)*	0.2 *(0.4)*	-1.0 *(-0.8)*	-0.1 *(0.1)*
Inventories	-0.5 *(-0.3)*	-1.2 *(-1.3)*	0.6 *(1.0)*	0.8 *(1.3)*
GDP	**0.4** *(0.4)*	**-2.4** *(-2.3)*	**3.0** *(3.0)*	**3.3** *(3.5)*
Memo items:				
Potential output	1.7 *(1.7)*	1.2 *(1.1)*	1.5 *(1.5)*	1.9 *(1.9)*
Real gross domestic income (GDI)	2.0 *(2.0)*	-5.6 *(-5.9)*	4.4 *(3.9)*	4.0 *(4.4)*

a. Figures in parentheses are from the base-case projection in the July *Monetary Policy Report*.

Chart 20: Real GDP growth is expected to rebound in the second half of 2009



Sources: Statistics Canada and Bank of Canada calculations

this year and to grow by 3.0 per cent in 2010 and 3.3 per cent in 2011, slightly weaker than expected in July.[2]

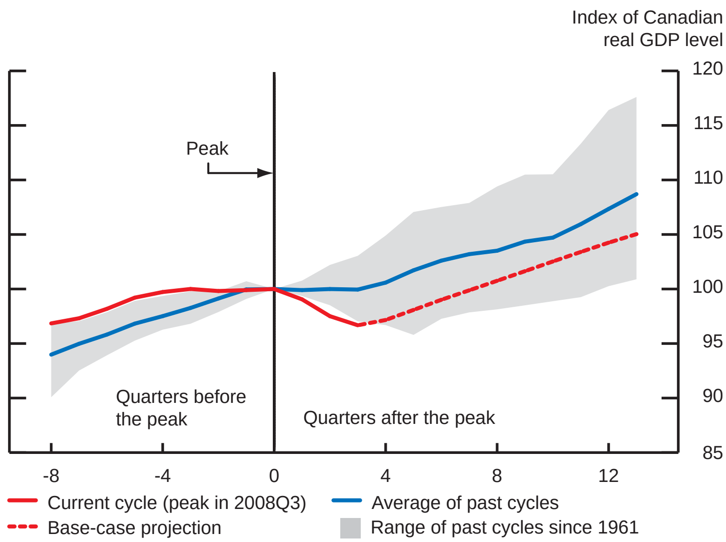
The economy is projected to contract by 2.4 per cent this year and to grow by 3.0 per cent in 2010 and 3.3 per cent in 2011.

The recovery of the Canadian economy is expected to be supported by a number of domestic factors—notably, the substantial amount of monetary and fiscal stimulus, the recent increase in household wealth, and our well-functioning financial system. It also hinges on the resumption of growth in the global economy and the associated firming of commodity prices, which will provide support to both domestic demand and exports. However, the high value of the Canadian dollar will act as a drag on demand for Canadian

2 The annual growth rate projected for 2009 is slightly lower than in July, owing to downward revisions in real GDP data for the first quarter, which more than offset the slightly stronger growth projected for the second half of the year.

Chart 21: The recovery in Canada should be more modest than in previous cycles

Comparison of Canadian real GDP across business cycles; peak of cycle = 100, quarterly data



Sources: Statistics Canada and Bank of Canada calculations

products. Overall, the recovery in Canada is projected to be somewhat more modest than the average of previous cycles **(Chart 21)**.

Consumer spending is expected to grow at a solid pace throughout the projection horizon. In the near term, improvements in wealth and in consumer confidence, as well as the re-emergence of demand postponed from previous quarters, will help to fuel spending. As these effects diminish, growth in consumer spending should be supported by the recovery in the growth of labour income. Growth in housing investment is projected to be brisk until early 2010, and then to slow down as the effects of temporary factors—such as pent-up demand and the home renovation tax credit—subside and affordability declines. In the wake of a short, severe recession, and with residual economic uncertainty, the personal savings rate remains elevated over the projection horizon.

Business fixed investment is projected to recover in early 2010, following five quarters of contraction. As in past cycles, growth in business investment is expected to lag the recovery, given the large amount of unused capacity, and then to rebound strongly once the recovery is well under way. The gradual improvement in financial conditions and economic activity, as well as higher commodity prices, should help to boost business spending. In light of recent information, firms are now expected to draw down their inventories at a slower pace than in July.

As detailed in the July *Report*, Canadian exporters should benefit disproportionately from the U.S. recovery in 2010–11, since the projected growth in the Bank's U.S. activity index is considerably higher than that in U.S. real GDP over this period.[3] The higher Canadian dollar will, however, dampen the expansion of exports. Import volumes are projected to increase at a solid pace, in line with the recovery in the domestic economy, the rebound in exports, and the past appreciation of the Canadian dollar.

3 See Technical Box 2 in the July *Report* for more information on the U.S. activity index used at the Bank of Canada.

As growth in the Canadian economy resumes, excess supply will gradually be absorbed, and the economy is expected to reach its production capacity in the third quarter of 2011.

The Projection for Inflation

Inflation pressures in Canada are expected to be slightly more subdued, compared with the July *Report,* with inflation returning to the Bank's target one quarter later than anticipated in July.

Inflation pressures in Canada are expected to be slightly more subdued compared with the July Report.

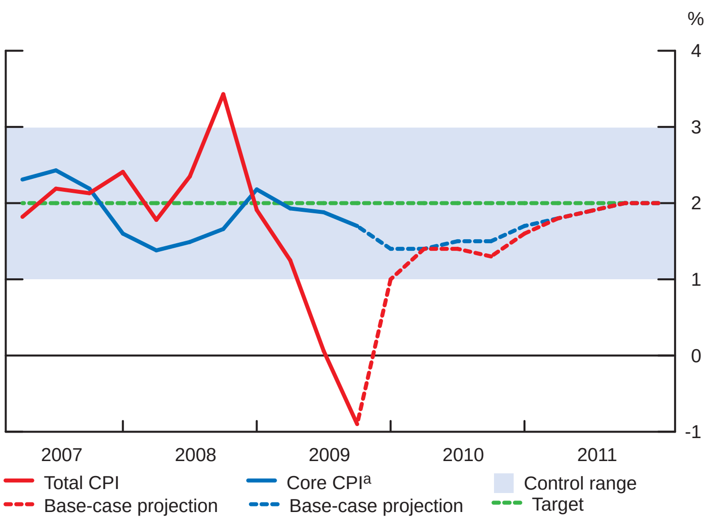
The core rate of inflation is projected to decline, reaching a trough of 1.4 per cent in the fourth quarter of 2009, owing to the substantial excess supply that has emerged in the economy, together with a noticeable deceleration in the growth of core food prices **(Table 4)**. With excess supply gradually absorbed, and with inflation expectations well anchored, the core rate is projected to return to 2 per cent in the third quarter of 2011 **(Chart 22)**.

Table 4: Summary of the base-case projection[a]

	2008	2009				2010				2011			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Real GDP (quarter-over-quarter percentage change)	-3.7 *(-3.7)*	-6.1 *(-5.4)*	-3.4 *(-3.5)*	2.0 *(1.3)*	3.3 *(3.0)*	3.8 *(4.0)*	3.8 *(4.0)*	3.7 *(3.8)*	3.5 *(3.8)*	3.3 *(3.8)*	3.3 *(3.3)*	2.8 *(2.8)*	2.5 *(2.8)*
Real GDP (year-over-year percentage change)	-1.0 *(-1.0)*	-2.3 *(-2.1)*	-3.2 *(-3.1)*	-2.8 *(-2.9)*	-1.1 *(-1.2)*	1.4 *(1.2)*	3.2 *(3.1)*	3.6 *(3.7)*	3.6 *(3.9)*	3.5 *(3.8)*	3.4 *(3.7)*	3.2 *(3.4)*	3.0 *(3.2)*
Core inflation (year-over-year percentage change)	2.2 *(2.2)*	2.0 *(2.0)*	1.9 *(1.9)*	1.7 *(1.6)*	1.4 *(1.4)*	1.4 *(1.4)*	1.5 *(1.6)*	1.5 *(1.6)*	1.7 *(1.7)*	1.8 *(1.9)*	1.9 *(2.0)*	2.0 *(2.0)*	2.0 *(2.0)*
Total CPI (year-over-year percentage change)	2.0 *(2.0)*	1.2 *(1.2)*	0.1 *(0.1)*	-0.9 *(-0.7)*	1.0 *(1.2)*	1.4 *(1.4)*	1.4 *(1.4)*	1.3 *(1.3)*	1.6 *(1.7)*	1.8 *(1.8)*	1.9 *(2.0)*	2.0 *(2.0)*	2.0 *(2.0)*
WTI[b] (level)	58 *(58)*	43 *(43)*	60 *(60)*	68 *(62)*	73 *(64)*	75 *(67)*	76 *(68)*	77 *(69)*	78 *(70)*	79 *(71)*	80 *(72)*	80 *(73)*	81 *(74)*

a. Figures in parentheses are from the base-case projection in the July *Monetary Policy Report.*
b. Assumptions for the price of West Texas Intermediate crude oil (US$ per barrel), based on an average of futures contracts over the two weeks ending 16 October 2009.

Chart 22: Total CPI and core inflation in Canada are projected to return to 2 per cent in the third quarter of 2011
Year-over-year percentage change, quarterly data



a. CPI excluding eight of the most volatile components and the effect of changes in indirect taxes on the remaining components
Sources: Statistics Canada and Bank of Canada calculations

Both core and total CPI inflation are expected to return to the Bank's 2 per cent target in the third quarter of 2011.

As noted earlier, total CPI inflation has fallen much more rapidly than the core rate, to -0.9 per cent in the third quarter of 2009, reflecting large year-over-year drops in energy prices. With the base-year effects for gasoline prices dropping out of the data, this is expected to be the trough for total CPI inflation, which should quickly rise to 1.0 per cent in the fourth quarter. In line with developments in the core inflation rate, total CPI inflation is also expected to return to the Bank's 2 per cent target in the third quarter of 2011.[4]

The uncertainty surrounding the Bank's inflation projection is illustrated using fan charts. **Chart 23** and **Chart 24** depict the 50 per cent and 90 per cent confidence bands for year-over-year core and total CPI inflation from the fourth quarter of 2009 to the end of 2011.[5] In particular, they show the slight downward tilt to the confidence bands that results from monetary policy operating at the effective lower bound.

Chart 23: Projection for core CPI inflation
Year-over-year percentage change

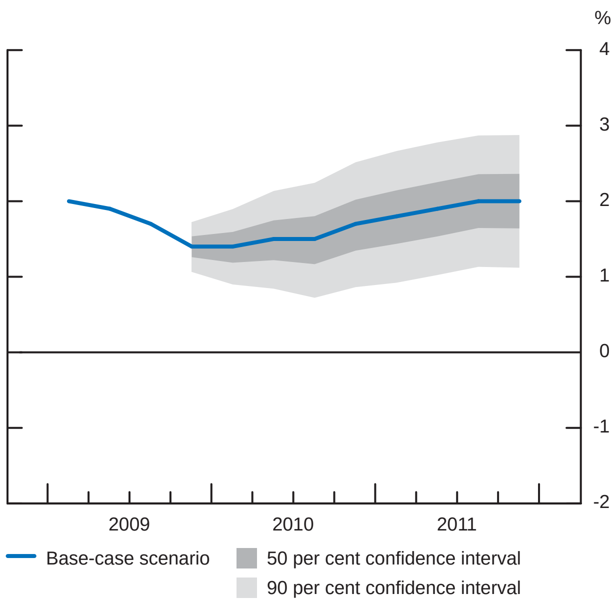
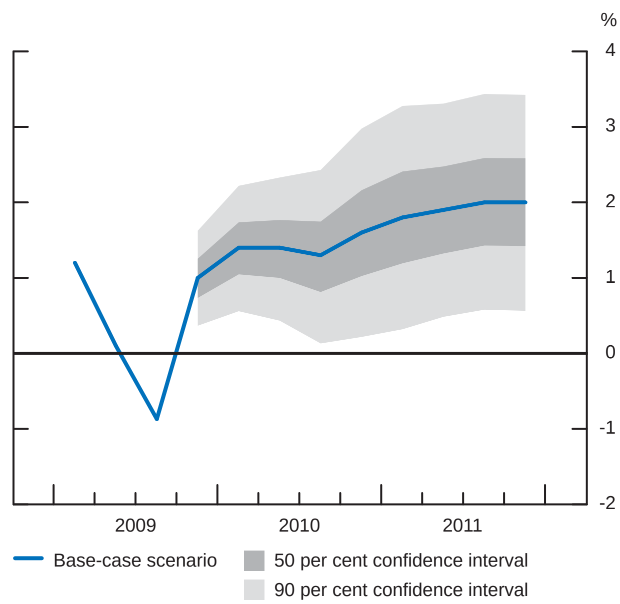


Chart 24: Projection for total CPI inflation
Year-over-year percentage change



4 This projection does not incorporate the impact of the harmonized sales tax that will be introduced in Ontario and British Columbia in July 2010.

5 Technical details on the construction of the fan charts are available at <http://www.bankofcanada.ca/en/mpr/pdf/backgrounder_fancharts.pdf>.

Risks to the Outlook

The risks to the outlook remain elevated, although they have diminished somewhat since the July *Report*, with accumulating evidence of a recovery in the global and Canadian economies.

The main upside risks to inflation relate to the possibility of a stronger-than-anticipated recovery in the global economy. The recovery is projected to be more subdued than usual, since complex processes of deleveraging and real adjustment are yet to be completed in the aftermath of the financial crisis. It is possible, however, that the global recovery will be more vigorous than expected—in view of the extraordinary degree of monetary and fiscal stimulus in most advanced countries and in line with the historical tendency for a steeper downturn to be followed by a steeper recovery. A stronger global recovery would be transmitted to Canada via trade, financial, confidence, and commodity-price channels. There is also the risk that Canadian domestic demand could be more robust and have a more sustained momentum than projected. In particular, Canadian households may increase their spending on consumption and residential investment more strongly than projected as the recovery takes hold. Both globally and in Canada, wealth effects stemming from sustained improvements in financial conditions may add increased impetus to the recovery.

On the downside, a stronger-than-assumed Canadian dollar, driven by global portfolio movements out of U.S.-dollar assets, could act as a significant further drag on growth and put additional downward pressure on inflation. Another important downside risk to the inflation outlook is that the global recovery could be even more protracted than projected. Up to this point, the recovery has been supported by aggressive monetary and fiscal stimulus across all G-20 countries. Self-sustaining growth in private demand, which will be required for a solid recovery, may take longer than expected to materialize.

While the Bank judges that these underlying macroeconomic risks to the projection are roughly balanced, the overall risks to the inflation projection are tilted slightly to the downside as a result of monetary policy operating at the effective lower bound. The reason for this tilt is that the Bank could respond with conventional monetary tightening in the event that upside risks materialized. In contrast, if downside risks materialized, the Bank would have to implement unconventional policies, for which greater prudence would be warranted.

Over the medium term, global macroeconomic imbalances continue to pose significant risks to the outlook. Current account imbalances have been attenuated during the recession, as U.S. households have curtailed their spending, while in China, the stimulus package has boosted domestic demand. However, in the absence of policies to bring about a sustained rotation of global demand, these imbalances may widen again with the recovery, carrying the risk of disorderly adjustments.