BANK OF CANADA
BANQUE DU CANADA

Monetary Policy Report

July 2017

Canada's Inflation-Control Strategy[1]

Inflation targeting and the economy

- The Bank's mandate is to conduct monetary policy to promote the economic and financial well-being of Canadians.
- Canada's experience with inflation targeting since 1991 has shown that the best way to foster confidence in the value of money and to contribute to sustained economic growth, employment gains and improved living standards is by keeping inflation low, stable and predictable.
- In 2016, the Government and the Bank of Canada renewed Canada's inflation-control target for a further five-year period, ending December 31, 2021. The target, as measured by the consumer price index (CPI), remains at the 2 per cent midpoint of the control range of 1 to 3 per cent.

The monetary policy instrument

- The Bank carries out monetary policy through changes in the target for the overnight rate of interest.[2] These changes are transmitted to the economy through their influence on market interest rates, domestic asset prices and the exchange rate, which affect total demand for Canadian goods and services. The balance between this demand and the economy's production capacity is, over time, the primary determinant of inflation pressures in the economy.
- Monetary policy actions take time—usually from six to eight quarters—to work their way through the economy and have their full effect on inflation. For this reason, monetary policy must be forward-looking.
- Consistent with its commitment to clear, transparent communications, the Bank regularly reports its perspective on the forces at work on the economy and their implications for inflation. The *Monetary Policy Report* is a key element of this approach. Policy decisions are typically announced on eight pre-set days during the year, and full updates of the Bank's outlook, including risks to the projection, are published four times per year in the *Monetary Policy Report*.

Inflation targeting is *symmetric* and *flexible*

- Canada's inflation-targeting approach is *symmetric*, which means that the Bank is equally concerned about inflation rising above or falling below the 2 per cent target.
- Canada's inflation-targeting framework is *flexible*. Typically, the Bank seeks to return inflation to target over a horizon of six to eight quarters. However, the most appropriate horizon for returning inflation to target will vary depending on the nature and persistence of the shocks buffeting the economy.

Monitoring inflation

- In the short run, the prices of certain CPI components can be particularly volatile. These components, as well as changes in indirect taxes such as GST, can cause sizable fluctuations in CPI.
- In setting monetary policy, the Bank seeks to look through such transitory movements in CPI inflation and focuses on a set of "core" inflation measures that better reflect the underlying trend of inflation. In this sense, these measures act as an operational guide to help the Bank achieve the CPI inflation target. They are not a replacement for CPI inflation.
- The Bank's three preferred measures of core inflation are CPI-trim, which excludes CPI components whose rates of change in a given month are the most extreme; CPI-median, which corresponds to the price change located at the 50th percentile (in terms of basket weight) of the distribution of price changes; and CPI-common, which uses a statistical procedure to track common price changes across categories in the CPI basket.

1 See *Joint Statement of the Government of Canada and the Bank of Canada on the Renewal of the Inflation-Control Target* (October 24, 2016) and *Renewal of the Inflation-Control Target: Background Information—October 2016*, which are both available on the Bank's website.

2 When interest rates are at very low levels, the Bank has at its disposal a suite of extraordinary policy measures that could be used to provide additional monetary stimulus and/or improve credit market conditions. The *Framework for Conducting Monetary Policy at Low Interest Rates*, available on the Bank's website, describes these measures and the principles guiding their use.

The *Monetary Policy Report* is available on the Bank of Canada's website at bankofcanada.ca.

For further information, contact:

Public Information
Communications Department
Bank of Canada
234 Wellington Street
Ottawa, Ontario K1A 0G9

Telephone: 613-782-8111;
1-800-303-1282 (toll-free in North America)
Email: info@bankofcanada.ca; Website: bankofcanada.ca

ISSN 1201-8783 (Print)
ISSN 1490-1234 (Online)
© Bank of Canada 2017

BANK OF CANADA
BANQUE DU CANADA

Monetary Policy Report

July 2017

This is a report of the Governing Council of the Bank of Canada:
Stephen S. Poloz, Carolyn A. Wilkins, Timothy Lane, Lawrence Schembri, Lynn Patterson and Sylvain Leduc.

Contents

Global Economy

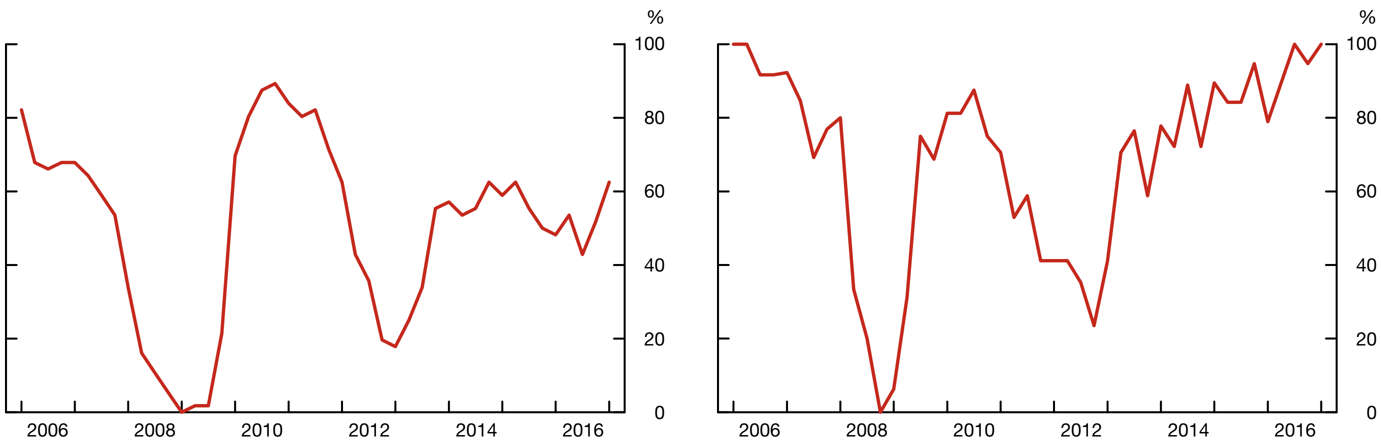
Global economic growth continues to strengthen and broaden across countries and regions (**Chart 1**). The US economy is expanding at a moderate pace, and there are signs of a more consistent pickup in activity across the euro area. Growth has resumed in some emerging-market economies (EMEs) that had been in recession. Both global trade and investment growth have firmed, reflecting the more synchronous expansion worldwide and the bottoming-out of the effects of the oil price shock. Global economic growth is expected to reach around 3 1/2 per cent in 2017 (**Table 1**). Core inflation has eased recently in some advanced economies, owing in large part to temporary factors, while existing slack is being absorbed.

A number of unknowns, particularly with respect to US trade policy, still cloud the outlook. While the global projection continues to incorporate the judgment that such uncertainty will have a negative impact on trade and investment decisions, these unknowns remain a downside risk to the projection.

Chart 1: Growth is broadening across countries globally and within the euro area

a. Share of countries where real GDP growth exceeds its 3-year average,[a] quarterly data

b. Share of countries in the euro area with positive real GDP growth,[b] quarterly data



a. Year-over-year growth is calculated for 56 advanced and emerging-market economies accounting for 86 per cent of global GDP in purchasing power parity.

b. Growth rates are calculated quarter-over-quarter. Data for 2017Q1 exclude Ireland.

Sources: National sources and Eurostat via Haver Analytics and Bank of Canada calculations

Last observation: 2017Q1

Table 1: Projection for global economic growth

	Share of real global GDP[a] (per cent)	Projected growth[b] (per cent)			
		2016	2017	2018	2019
United States	16	1.6 (1.6)	2.2 (2.1)	2.1 (2.3)	1.8 (1.9)
Euro area	12	1.7 (1.7)	1.9 (1.6)	1.7 (1.6)	1.5 (1.5)
Japan	4	1.0 (1.0)	1.1 (1.1)	0.8 (0.8)	0.8 (0.8)
China	17	6.7 (6.7)	6.6 (6.5)	6.3 (6.3)	6.3 (6.3)
Oil-importing EMEs[c]	32	3.6 (3.3)	4.0 (3.7)	4.0 (4.0)	4.2 (4.2)
Rest of the world[d]	19	1.0 (0.9)	1.7 (2.1)	2.5 (2.5)	2.7 (2.8)
World	100	3.0 (2.9)	3.4 (3.3)	3.4 (3.4)	3.4 (3.5)

a. GDP shares are based on International Monetary Fund (IMF) estimates of the purchasing-power-parity valuation of country GDPs for 2015 from the IMF's October 2016 *World Economic Outlook*.

b. Numbers in parentheses are projections used in the previous Report.

c. The oil-importing emerging-market economies (EMEs) grouping excludes China. It is composed of large emerging markets from Asia, Latin America, the Middle East and Africa (such as India, Brazil and South Africa) as well as newly industrialized economies (such as South Korea).

d. "Rest of the world" is a grouping of all other economies not included in the first five regions. It is composed of oil-exporting emerging markets (such as Russia, Nigeria and Saudi Arabia) and other advanced economies (such as Canada, the United Kingdom and Australia).

Source: Bank of Canada

Global financial conditions continue to support growth

Yields on long-term sovereign bonds have edged up since April, but they remain low by historical standards. The increase in yields has been driven by stronger growth and market expectations of less accommodative monetary policy in advanced economies, including the reduction of the Federal Reserve balance sheet that is anticipated to begin later this year. Global credit spreads remain near their post-crisis lows, and equity prices are close to past highs. The US dollar has seen a modest depreciation.

The US economy is expected to grow at a moderate pace

Economic developments in the United States have evolved largely as expected at the time of the April *Monetary Policy Report*. First-quarter growth slowed primarily because of transitory factors, including drag from inventories and a weather-related decline in the consumption of utilities. Meanwhile, growth was supported by an unexpectedly strong and broad increase in business investment, including a sharp rebound in energy investment. Recent data, including labour income and consumption, are in line with an expected rebound in growth in the second quarter. Inflation has been weaker than expected, owing in large part to temporary factors. The pace of job gains remains consistent with a falling unemployment rate.

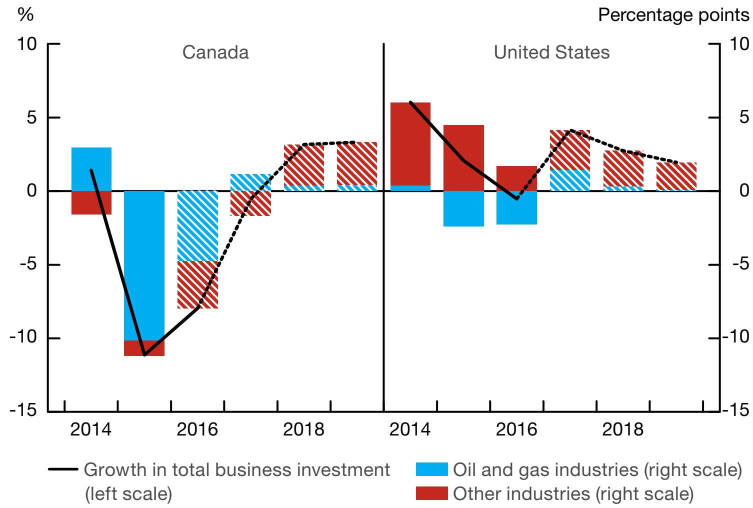
The prospects of expansionary US fiscal policy are less clear than they appeared in April, given delays in decision-making processes. Consequently, the fiscal stimulus assumed in the January and April forecasts has been removed.[1]

US economic fundamentals remain supportive of anticipated growth of around 2 per cent over the projection horizon, slightly above estimated potential growth of 1 3/4 per cent. Consumption growth should remain firm, sustained by gains in labour income. Solid domestic demand is anticipated to continue to support business investment (**Chart 2**). Net exports, in contrast, are likely to remain a source of drag, driven partly by the past appreciation of the US dollar.

1 In the April projection the assumed stimulus added 1/2 per cent to the projected level of US GDP by mid-2019.

Chart 2: Business investment is expected to strengthen in the United States and Canada

Contribution to total business investment growth, annual data



Note: US oil and gas industries include the mining industry.

Sources: Statistics Canada, US Bureau of Labor Statistics via Haver Analytics and Bank of Canada estimates, calculations and projections

Euro area growth prospects are still improving

Recent developments point to more momentum in the euro area than anticipated in April, and growth has become more widespread across member countries. In the first quarter, every member experienced positive growth, which was the second time this happened in the past year (**Chart 1**).

Recent indicators, including the Purchasing Managers' Index and measures of consumer confidence, suggest above-potential growth. Policy uncertainty also appears to have declined in recent months, partly reflecting the outcome of the election in France. Highly accommodative monetary policy and improved credit growth should continue to support a pace of expansion of around 1 3/4 per cent over the 2017–18 period, before tapering off to 1 1/2 per cent in 2019, as the output gap closes.

In Japan sluggish wage gains and slow potential growth suggest a pace of expansion of around 1 per cent over the projection horizon.

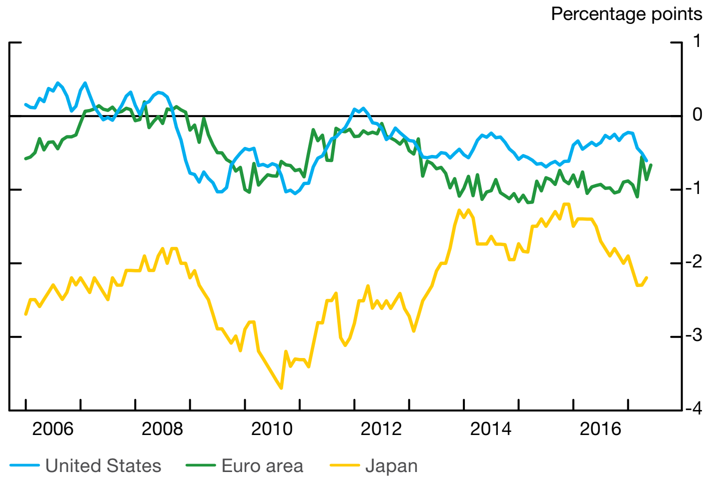
Core inflation remains subdued in advanced economies

Core inflation has been soft in a number of advanced economies (**Chart 3**). In many cases, this reflects remaining excess capacity—especially persistent labour market slack, which has held back wage growth. Wage and price inflation in these economies should pick up over the projection horizon as above-potential growth continues.

However, the fact that core inflation is soft and has also drifted down recently in some advanced economies, despite diminishing economic slack, requires further analysis. In large part, this softening can be attributed to temporary factors. In the United States, for example, increased competition among telecommunications providers and the introduction of certain generic pharmaceuticals have resulted in what are likely one-time declines in price levels.

Chart 3: Core inflation remains subdued in advanced economies

Deviation of core inflation rate from central bank targets, monthly data



Sources: National sources via Haver Analytics and Bank of Canada calculations

Last observations: United States and Japan, May 2017; euro area, June 2017

The slowdown in inflation in several regions, however, suggests that common factors may also be playing a role. One possible explanation is that inflation expectations may have drifted downward resulting from a long period of below-target inflation in many advanced economies. Structural changes related to technological advances in the global economy may also be playing a role. Such advances may have boosted productivity in ways that are not readily measured, adding to global potential growth and thus implying that there is more excess capacity than is captured by standard estimates. The rise of e-commerce may also have heightened retail competition, by enabling retailers to compete across national borders, thus changing pricing behaviour and making prices more sensitive to new information and global market conditions. If lower inflation reflects increased global potential and heightened competition, it suggests higher living standards rather than signalling economic weakness. Evidence on various factors influencing inflation is mixed, and further analysis will be needed to assess their relative importance.[2]

Emerging-market economies continue to drive global growth

The outlook for China's economy remains consistent with the April Report. Growth has been uneven over the first half of the year, with a softer-than-expected first quarter offset by signs of stronger momentum in the second quarter. Credit growth remains elevated but should continue to gradually taper. Growth in China is expected to slow modestly over the projection horizon, from around 6 1/2 per cent in 2017 to 6 1/4 per cent in 2018–19, alongside an ongoing rebalancing toward more consumption-based growth.

There is more near-term momentum in oil-importing EMEs than was expected at the time of the April Report, reflecting a stronger resumption of growth in some countries, such as Brazil. Ongoing recoveries in EMEs that had been in recession and progress on economic reforms in some countries should support a pickup in growth from about 4 per cent in 2017 to around 4 1/4 per cent in 2019.

2 For example, see D. M. Byrne, J. G. Fernald and M. B. Reinsdorf, "Does the United States Have a Productivity Slowdown or a Measurement Problem?" *Brookings Papers on Economic Activity* (Spring 2016) and C. Syverson, "Challenges to Mismeasurement Explanations for the U.S. Productivity Slowdown," NBER Working Paper No. 21974 (February 2016).

The pace of expansion in oil-exporting countries is projected to rise as the impact of the past oil price decline eases. Growth in the "rest of the world" grouping is expected to increase from about 1 3/4 per cent in 2017 to around 2 3/4 per cent in 2019.

Rising US shale oil production is contributing to price declines

Benchmark prices for global crude oil have recently averaged US$50 per barrel (Brent), about 10 per cent lower than assumed in April. The announced extension of the production cut by the Organization of the Petroleum Exporting Countries (OPEC) and other oil producers into early 2018 has not fully relieved market anxiety over stronger-than-anticipated growth in US shale oil production and elevated inventories (**Chart 4**).

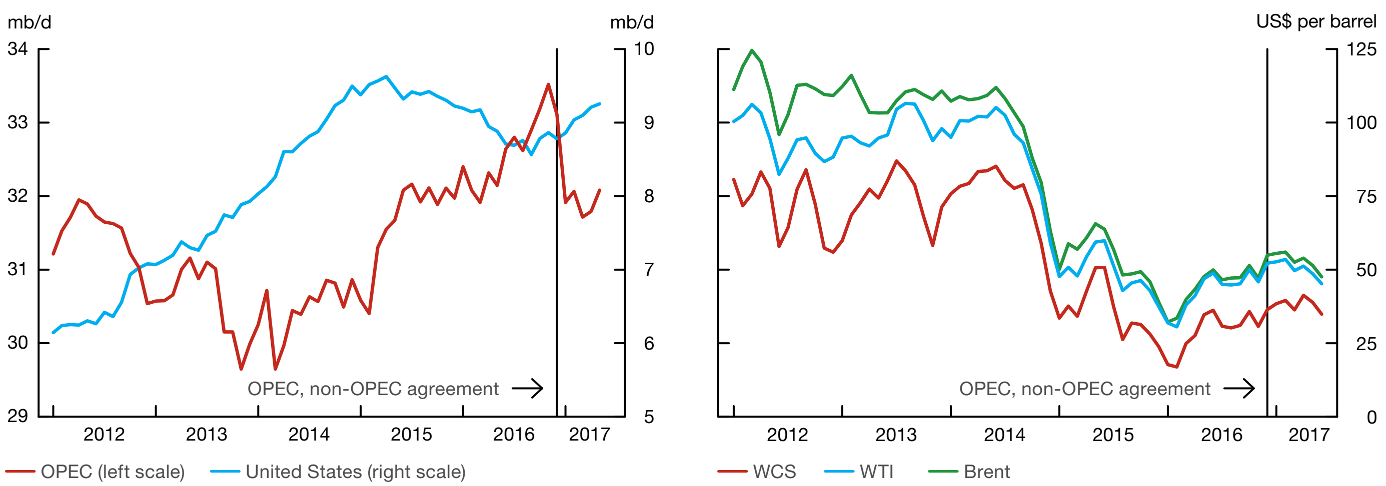
There are both upside and downside risks to oil prices. In the near term, risks are tilted to the downside because technological advances may continue to lower the costs of oil production, particularly the production of US shale oil. Supply could also increase quickly in 2018 if there were a disorderly exit from OPEC's current production agreement. Although technological advances may continue to exert downward pressures beyond 2018, upside risks are expected to dominate, since past investment cuts may lead to insufficient capacity to meet growing demand.

With respect to non-energy commodities, agricultural prices are higher than in April, partly due to weather-related disruptions in North America and Europe. Lumber prices are somewhat weaker as a result of softer US housing starts. Markets had largely priced in the additional anti-dumping duties on Canadian softwood lumber exports announced by the United States in June. Iron ore prices have declined, in part because of ongoing excess supply. Other base metal prices are broadly unchanged on aggregate. Looking ahead, the Bank of Canada's non-energy commodity price index should remain stable over the projection horizon.

Chart 4: Rising US shale oil production is partly offsetting OPEC's rebalancing efforts

a. Crude oil production, monthly data

b. Crude oil prices, monthly data



Note: mb/d represents millions of barrels per day; OPEC refers to the Organization of the Petroleum Exporting Countries, WCS to Western Canada Select, and WTI to West Texas Intermediate.

Sources: Chicago Mercantile Exchange and Intercontinental Exchange via Haver Analytics, New York Mercantile Exchange via Bloomberg L.P., International Energy Agency and Bank of Canada calculations

Last observations: Crude oil production, May 2017; crude oil prices, June 2017

Canadian Economy

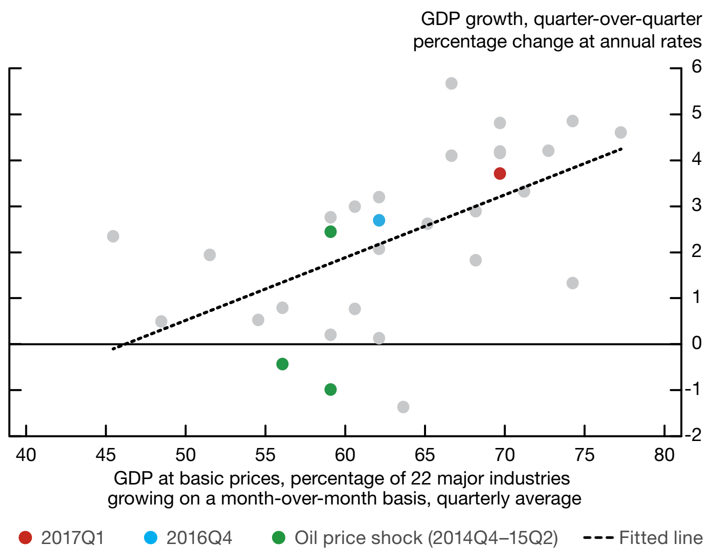
Economic activity has grown strongly in recent quarters. While demand growth is led by robust household spending, early signs that its sources are becoming more balanced include recent pickups in exports and business investment. Growth is also broadening across regions and sectors, with more than two-thirds of industries expanding (**Chart 5**).

Over the projection horizon, the Bank expects the economy to continue to absorb excess capacity by expanding faster than potential output, albeit at a slower pace than in recent quarters. Economic activity will be supported by rising foreign demand, fiscal stimulus and accommodative monetary and financial conditions. Increased exports and investment will contribute to the anticipated broadening in the composition of demand, helping to sustain economic expansion as growth in both residential investment and household consumption slows.

Largely reflecting the surge in growth at the start of the year, real GDP is anticipated to expand by 2.8 per cent in 2017 before moderating to 2.0 per cent in 2018 and 1.6 per cent in 2019 (**Table 2** and **Box 1**). The output gap is expected to close around the end of 2017, earlier than projected in April.

Chart 5: A large share of industries are displaying strong GDP growth in 2017

Relationship between growth diffusion of real GDP at basic prices and growth of GDP at market prices, 2009Q3 to 2017Q1, quarterly data



Sources: Statistics Canada and Bank of Canada calculations

Last observation: 2017Q1

Consumer price index (CPI) inflation has been soft recently, for the most part as a result of food, electricity and automobile prices. Excess supply in the economy has also been a factor. Inflation is forecast to pick up and return close to 2 per cent in the middle of 2018 as relative price movements dissipate and excess capacity is absorbed.

Table 2: Contributions to average annual real GDP growth
Percentage points[a, b]

	2016	2017	2018	2019
Consumption	1.4 (1.3)	1.9 (1.4)	1.3 (1.2)	1.0 (1.1)
Housing	0.2 (0.2)	0.3 (0.3)	0.0 (0.0)	-0.1 (-0.2)
Government	0.5 (0.5)	0.5 (0.6)	0.3 (0.2)	0.0 (0.1)
Business fixed investment	-1.0 (-1.0)	-0.1 (-0.2)	0.3 (0.4)	0.4 (0.4)
Subtotal: Final domestic demand	1.1 (1.0)	2.6 (2.1)	1.9 (1.8)	1.3 (1.4)
Exports	0.4 (0.4)	0.5 (0.6)	0.7 (0.9)	0.8 (0.9)
Imports	0.2 (0.3)	-0.9 (-0.4)	-0.6 (-0.8)	-0.5 (-0.5)
Subtotal: Net exports	0.6 (0.7)	-0.4 (0.2)	0.1 (0.1)	0.3 (0.4)
Inventories	-0.3 (-0.3)	0.6 (0.3)	0.0 (0.0)	0.0 (0.0)
GDP	1.5 (1.4)	2.8 (2.6)	2.0 (1.9)	1.6 (1.8)
Memo items (percentage change):				
Range for potential output	1.1–1.5 (1.1–1.5)	1.0–1.6 (1.0–1.6)	1.1–1.7 (1.1–1.7)	1.1–1.9 (1.1–1.9)
Real gross domestic income (GDI)	0.8 (0.7)	4.0 (3.6)	1.5 (1.6)	1.5 (1.6)
CPI inflation	1.4 (1.4)	1.6 (1.9)	1.8 (2.0)	2.1 (2.1)

a. Numbers in parentheses are from the projection in the previous Report.
b. Numbers may not add to total because of rounding.

Box 1

Key Inputs to the Base-Case Projection

The Bank's projection is always conditional on several key assumptions, and changes to them will affect the outlook for the global and Canadian economies. The Bank regularly reviews these assumptions and assesses the sensitivity of the economic projection to them.

- Oil prices are assumed to remain near recent average levels. The per-barrel prices in US dollars for Brent, West Texas Intermediate and Western Canada Select are about $50, $45 and $35, respectively, weaker than assumed in the April Report.
- By convention, the Bank does not attempt to forecast the exchange rate in the base-case projection. Therefore, over the projection horizon, the Canadian dollar is assumed to remain close to its recent average of 76 cents. This assumption is broadly in line with the April Report.
- The output gap is assumed to show excess capacity of 1/2 per cent in the second quarter of 2017, based on the midpoint of the Bank's estimate that excess capacity in the Canadian economy was in a range of 0 to 1 per cent.[1] This assumption compares with the April assumption of 3/4 per cent excess capacity for the first quarter of 2017.
- Annual potential output growth is assumed to average 1.4 per cent over the 2017–19 projection horizon, close to the midpoint of the Bank's estimated range (Table 2). This assumption is unchanged from April. Further details on the Bank's assessment of potential output are provided in the Appendix to the April 2017 Report.
- The neutral nominal policy rate in Canada is estimated to be between 2.5 and 3.5 per cent. The current projection is based on the midpoint of this range, which is unchanged from the April assumption.

1 The level of potential output in the first quarter of 2017 is unchanged relative to the April Report.

Near-term growth is expected to remain solidly above potential

Growth in GDP in the first quarter of 2017 picked up strongly to 3.7 per cent, in line with expectations in the April Report (**Table 3**, **Chart 6**). Domestic demand was robust: consumption growth strengthened, housing activity rose sharply, and investment in the oil and gas sector rebounded from a prolonged steep decline. A large rebuilding of manufacturing inventories, following a drawdown in the previous quarter, also added significantly to growth. In contrast, outside the resource sector, the expansion of exports and investment spending remained subdued.

GDP growth is projected to average 2 1/2 per cent in the second and third quarters and remain above potential output growth. Recent monthly data indicate that export growth has increased while business investment growth has eased. In particular, relative to the first quarter, oil and gas drilling rig activity has levelled off, and the strong growth in imports of machinery and equipment has slowed. In addition, activity in the housing sector has

Table 3: Summary of the projection for Canada

Year-over-year percentage change[a]

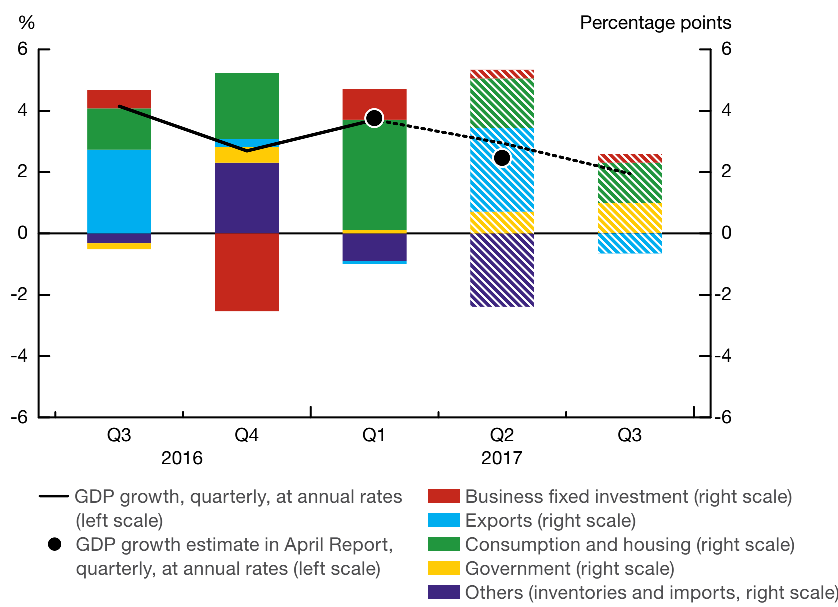
	2016	2017			2016	2017	2018	2019
	Q4	Q1	Q2	Q3	Q4	Q4	Q4	Q4
CPI inflation	1.4 (1.4)	1.9 (2.0)	1.4 (1.7)	1.3	1.4 (1.4)	1.6 (2.1)	2.0 (2.1)	2.1 (2.1)
Real GDP	2.0 (1.9)	2.3 (2.2)	3.4 (3.1)	2.8	2.0 (1.9)	2.7 (2.5)	1.8 (1.9)	1.5 (1.5)
Quarter-over-quarter percentage change at annual rates[b]	2.7 (2.6)	3.7 (3.8)	3.0 (2.5)	2.0				

a. Numbers in parentheses are from the projection in the previous Report. Details on the key inputs into the base-case projection are provided in **Box 1**.

b. Over the projection horizon, 2017Q2 and 2017Q3 are the only quarters for which some information about real GDP growth was available at the time the projection was conducted. This is why quarter-over-quarter percentage changes are not presented past that horizon. For longer horizons, fourth-quarter-over-fourth-quarter percentage changes are presented.

Chart 6: Near-term growth is expected to ease while remaining above potential

Contribution to real GDP growth, quarterly data



Sources: Statistics Canada and Bank of Canada estimates and calculations

Last data plotted: 2017Q3

abated, largely as a result of sharp declines in resales in Toronto and surrounding areas. At the same time, growth in consumer spending is projected to slow to a more sustainable pace as the temporary effect of government transfers and special payments on growth in household disposable income diminishes.[3] As well, motor vehicle sales, which have been stronger than suggested by fundamental drivers of demand, are at an all-time high and are expected to moderate.

Excess capacity in the economy continues to be absorbed

Over the past year, a significant amount of excess capacity in the economy has been absorbed, as indicated by a narrowing in the Bank's two measures of economic slack.[4] Responses to the Bank's summer *Business Outlook Survey* also suggest an increase in capacity pressures. Overall, the Bank judges that in the second quarter of 2017 the degree of excess capacity in the economy was between 0 and 1 per cent. This compares with a range of estimated excess capacity between 1 1/2 and 2 1/2 per cent a year earlier.[5]

Several labour market indicators are consistent with this assessment, suggesting that labour market slack is also being absorbed, although with a lag. In recent months, employment growth has been solid and the unemployment rate has declined. The *Business Outlook Survey* also points to a broad-based tightening in labour market conditions, with increasing reports of the prevalence and intensity of labour shortages. Various wage measures continue to suggest modest growth, although wage growth as measured by the Survey of Employment, Payrolls and Hours has risen to 2.3 per cent on average since the beginning of the year, up from 1.2 per cent on average over 2016.[6, 7] Other indicators suggest slack remains, particularly in energy-intensive sectors and regions. Slack is also reflected in elevated levels of long-term unemployment and below-trend average hours worked.

Temporary factors have dampened inflation in recent months

CPI inflation has fallen since the beginning of the year, reaching an estimated 1.4 per cent on average in the second quarter, while two of the Bank's three measures of core inflation have also continued to decline (**Chart 7**).[8] The slowdown in inflation can be explained mainly by easing consumer energy and automobile price inflation (**Box 2**). Both slower gasoline price inflation and the electricity rebates from the Ontario government have weighed on consumer energy prices. CPI inflation and the core measures are also being held down by current and past economic slack, but this effect has declined in recent quarters. In addition, it is possible that global structural factors, as discussed on page 4, could be contributing to low inflation in Canada.

---

3 While the Canada Child Benefit provided a temporary boost to consumption growth, it will continue to support the level of household spending going forward.

4 The Bank's structural and statistical estimates of the output gap can be found at Statistics > Indicators > Indicators of Capacity and Inflation Pressures for Canada on the Bank's website.

5 This represents our latest estimate, including historical revisions and excluding the impact of the wildfires in Alberta in that quarter. In the July 2016 Report, the Bank estimated that excess capacity, excluding the impact of the wildfires, was between 1 and 2 per cent.

6 This increase in wage growth is observed in the variable weight measure from the Survey of Employment, Payrolls and Hours.

7 Bank staff estimate that the decline in commodity prices may have reduced wage growth by about 0.5 percentage points by mid-2016. For a related discussion, see D. Brouillette, J. Ketcheson, O. Kostyshyna and J. Lachaine, "Wage Growth in Canada and the United States: Factors Behind Recent Weakness," Bank of Canada Staff Analytical Note No. 2017-8 (July 2017) and Box 4 of the April 2017 *Monetary Policy Report*.

8 CPI inflation eased more than anticipated in recent months, primarily because of a slowing in the growth of automobile prices that was more pronounced than expected.

Box 2

Accounting for the Recent Inflation Slowdown in Canada

Canadian consumer price index (CPI) inflation has eased since the beginning of the year. The slowdown in year-over-year inflation is primarily reflected in goods price inflation, while services price inflation has remained relatively steady. In particular, consumer energy price inflation and auto price inflation have declined. Together, these factors reduced inflation by 0.7 percentage points between the first and second quarter of 2017.

Consumer energy price inflation has abated

As expected, the strong rise in consumer energy prices in January 2017 has started to dissipate and has led to a slowdown in CPI inflation of about 0.5 percentage points between the first and second quarter of this year (**Chart 2-A**). This includes, in part, the recent decline in crude oil prices as well as the waning effect of the strong price increases in 2016. In addition, Ontario government measures have reduced the cost of electricity to consumers. As of May, national CPI electricity prices were 5.5 per cent lower than a year earlier.

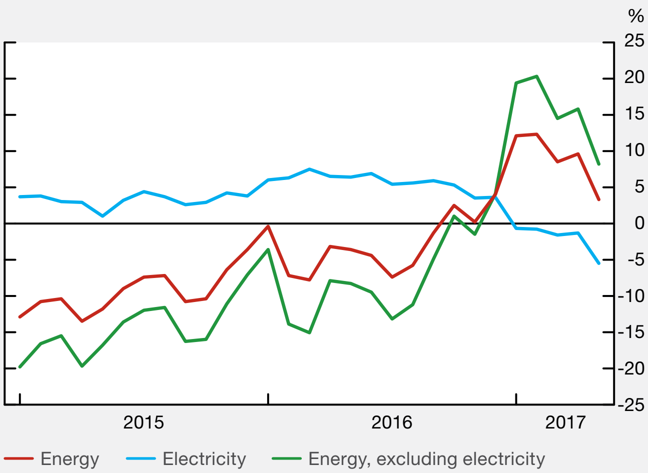
Auto price inflation has slowed significantly

The recent sharp decline in auto price inflation pulled CPI inflation down by about 0.2 percentage points between the first and second quarter of this year (**Chart 2-B**).

Between August 2015 and September 2016, auto prices increased substantially in Canada, likely reflecting strong demand and the effects of a lower Canadian dollar. Since then, auto price inflation has receded steeply, returning close to its historical average in May. This dynamic appears specific to Canada, since inflation in new cars in the United States has remained relatively stable.

Chart 2-A: Consumer energy price inflation has abated

CPI components, year-over-year percentage change, monthly data



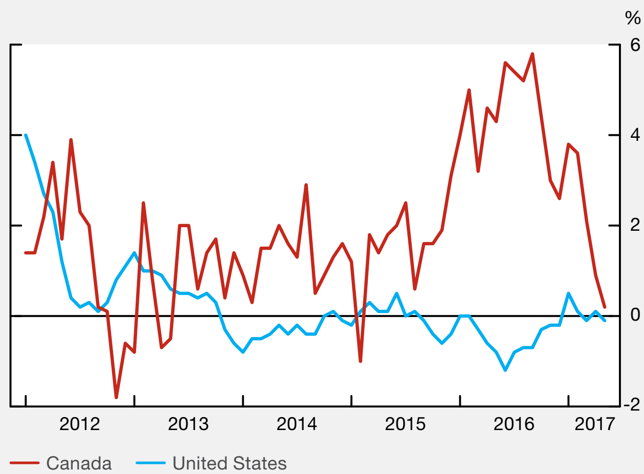
Note: Energy, excluding electricity, includes gasoline, natural gas, and fuel oil and other fuels.

Sources: Statistics Canada and Bank of Canada calculations

Last observation: May 2017

Chart 2-B: Auto price inflation has contributed to the sharp decline in CPI inflation

CPI automobile prices, year-over-year percentage change, monthly data

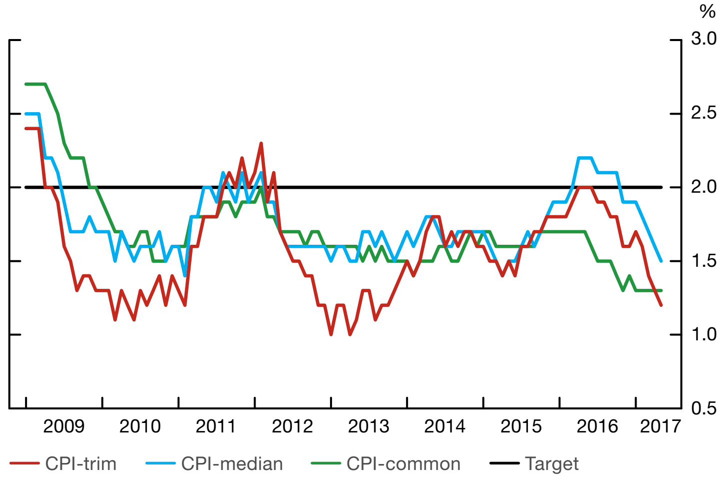


Sources: Statistics Canada, US Bureau of Labor Statistics via Haver Analytics and Bank of Canada calculations

Last observation: May 2017

Chart 7: Two of three core inflation measures have continued to decline

Year-over-year percentage change, monthly data



Sources: Statistics Canada and Bank of Canada

Last observation: May 2017

GDP growth is expected to broaden further

The Bank projects that real GDP growth will remain above that of potential output and broaden further but will moderate over the projection horizon. Real GDP is anticipated to expand by 2.8 per cent in 2017, 2.0 per cent in 2018 and 1.6 per cent in 2019 (**Table 2**). Primarily because household expenditures are more robust than expected, growth is stronger in 2017 and 2018 than projected in April. Consequently, economic slack is absorbed more quickly, with the output gap now anticipated to close around the end of 2017. Growth in 2019 is projected to approach estimated potential output growth.

Growth is expected to continue to broaden across sectors and regions because the economy has largely adjusted to the decline in oil prices that began in the second half of 2014. In particular, the drag on investment spending and economic growth from lower oil prices is mostly over, and growth in commodity-related activity is resuming. This economic adjustment has been supported by accommodative monetary and financial conditions and the past depreciation of the Canadian dollar. However, the adverse effect on incomes lingers, particularly in energy-intensive provinces.

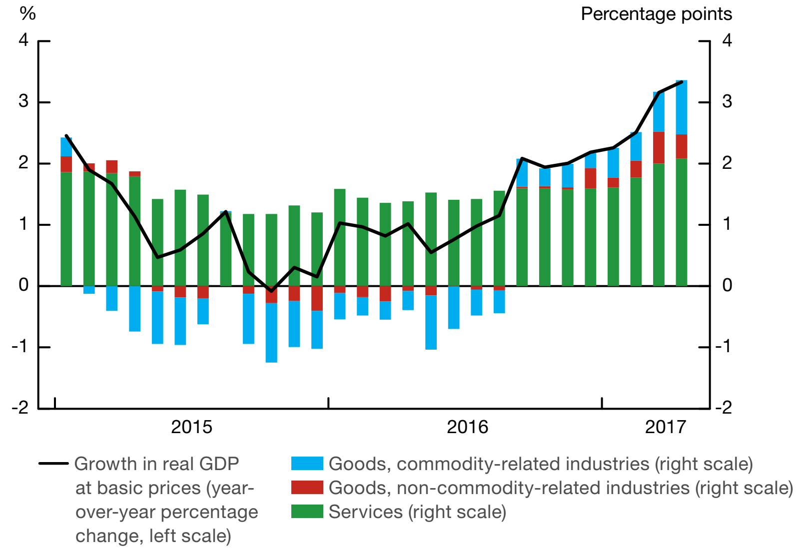
At the same time, production in other goods industries is also picking up, while the solid expansion in the service sector persists (**Chart 8**). Results from the summer *Business Outlook Survey* also suggest that growth will continue to broaden. For example, forward-looking indicators of business activity have generally strengthened across regions and sectors (**Chart 9**).

Beyond 2017, GDP growth is forecast to broaden further across demand categories (**Chart 10**, **Table 2**). Export growth is projected to increase as foreign demand strengthens, leading to increased investment and an expansion in productive capacity. Government spending is also expected to boost growth over the projection horizon, reflecting previously announced fiscal measures.[9] In particular, public investment is expected to be a significant

9 Furthermore, the Bank's base-case economic scenario incorporates the fiscal measures announced since the April Report, including the increase in expenditures contained in the Ontario budget. These additional measures are estimated to provide further support to economic activity in the 2017–18 fiscal year.

Chart 8: The goods sector is increasing its contribution to output growth

Contribution to growth in real GDP at basic prices, seasonally adjusted, monthly data

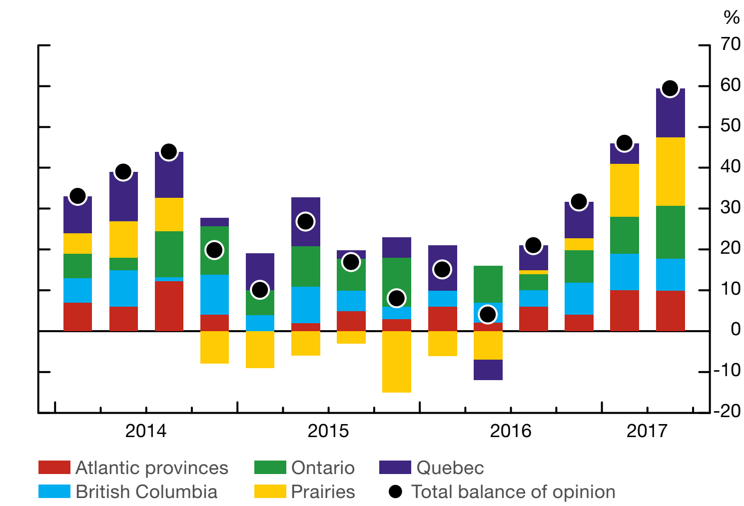


Sources: Statistics Canada and Bank of Canada calculations

Last observation: April 2017

Chart 9: Indicators of future sales have improved in all regions

Contribution to balance of opinion,[a] quarterly data



a. Percentage of firms in the summer *Business Outlook Survey* reporting that recent indicators (order books, advance bookings, sales inquiries, etc.) have improved compared with 12 months ago minus the percentage of firms reporting that indicators have deteriorated

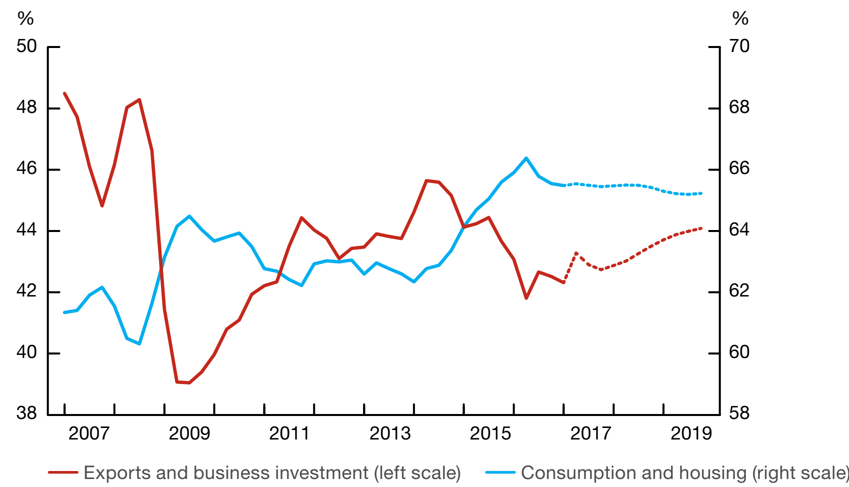
Note: Regional results rely on a small sample size.

Source: Bank of Canada

Last observation: 2017Q2

Chart 10: GDP growth is expected to broaden across demand categories

Nominal share of GDP, quarterly data



Sources: Statistics Canada and Bank of Canada calculations and projections

contributor to economic growth over the near term.[10] Meanwhile, household spending will continue to support growth, but its contribution is anticipated to moderate. Consumption growth will be restrained by elevated levels of household debt and higher longer-term borrowing costs as global long-term yields are projected to gradually rise.

Exports are anticipated to expand with foreign demand…

While Canada's exports have experienced a structural loss of global market share, they have continued to recover and are expected to keep expanding over the projection horizon, roughly in line with the broad-based growth in foreign demand (**Chart 11**).[11] In particular, overall export growth is expected to pick up in the coming quarters—an assessment that is consistent with the summer *Business Outlook Survey*. Many respondents noted that their positive US outlook was a good sign for sales, citing as examples solid activity in the US construction sector, increased demand for information technology services and oil, and increased tourism to Canada. However, as anticipated in April, changes in the production mandates of multinational auto assemblers mean there will be reductions in motor vehicle production later in 2017; as a result, exports of motor vehicles and parts will decline.

Growth in commodity exports is anticipated to increase moderately over the projection. Prices for oil and base metals have declined recently, limiting production growth in these sectors. At the same time, new trade restrictions are heavily constraining softwood lumber exports. Conditions are more favourable for some other non-energy commodities; for example, growth in agricultural production and exports is expected to rise over the projection.

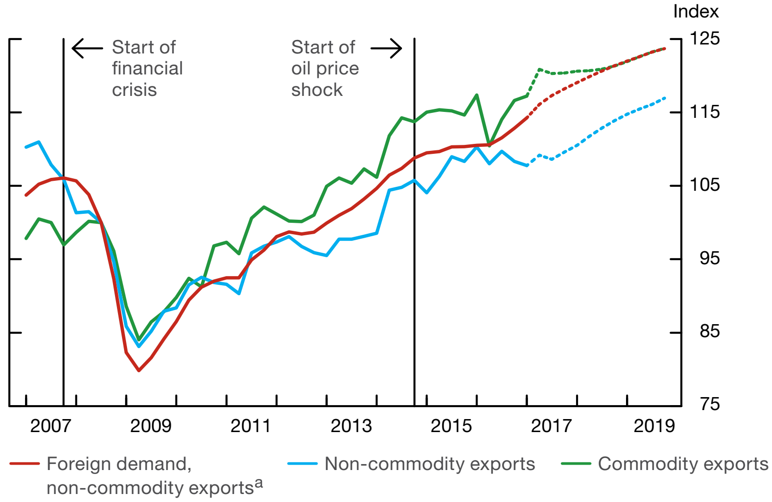
Imports are also expected to grow modestly, supported by growth in domestic demand—particularly consumption and investment. The effect of the past depreciation of the dollar is evident in some sectors such as

10 The 2017 federal budget confirmed that the total spending for infrastructure investment introduced in the 2016 federal budget and the Fall Economic Statement remains unchanged, although more of the spending allocation will occur in the 2018–19 fiscal year.

11 The profile for foreign demand has been revised down relative to the April Report since the projection no longer assumes a fiscal stimulus in the United States; see the Global Economy section of this report. This change in projection assumptions has an adverse effect on exports and subtracts 0.1 per cent from the level of Canadian GDP by the end of 2019.

Chart 11: Exports are projected to benefit from stronger foreign demand

Chained 2007 dollars, index: 2008Q3 = 100, quarterly data



a. Foreign demand for Canadian non-commodity exports is based on GRACE (2007 = 100). For details, see A. Binette, T. Chernis and D. de Munnik, "Global Real Activity for Canadian Exports: GRACE," Bank of Canada Staff Discussion Paper No. 2017-2 (January 2017).

Sources: Statistics Canada and Bank of Canada calculations and projections

tourism, since many Canadians are opting to vacation in Canada rather than abroad. However, there is limited evidence so far in other sectors that the effect of the dollar has led to domestic production replacing imports.

...while business investment is expected to contribute to growth

As with exports, business investment is anticipated to increase over the projection horizon, triggered by expanding economic activity in both the non-resource and resource sectors. The expansion in the resource sector indicates that the adjustment in the level of investment in this sector in 2015 and 2016 to the past oil price shock is largely complete (**Chart 2** on page 3).

Growth in investment outside the resource sector is expected to increase moderately in the near term as more firms expand their capacity to meet future demand.[12] Nevertheless, the recovery in business investment is anticipated to remain below what would normally be expected based on historical experience, partly reflecting structural challenges such as slower labour force growth as well as concerns related to US policy uncertainty.[13]

Investment in the oil and gas sector rebounded sharply in the first quarter but is expected to expand gradually over the projection. The outlook is supported by an analysis of the capital expenditure plans of oil and gas firms and the Bank's consultations with the energy sector. Firms expressed a sense of cautious optimism and are prudently implementing their investment plans. Investment prospects for the sector are, however, highly contingent on the outlook for global oil prices, which have recently declined.[14]

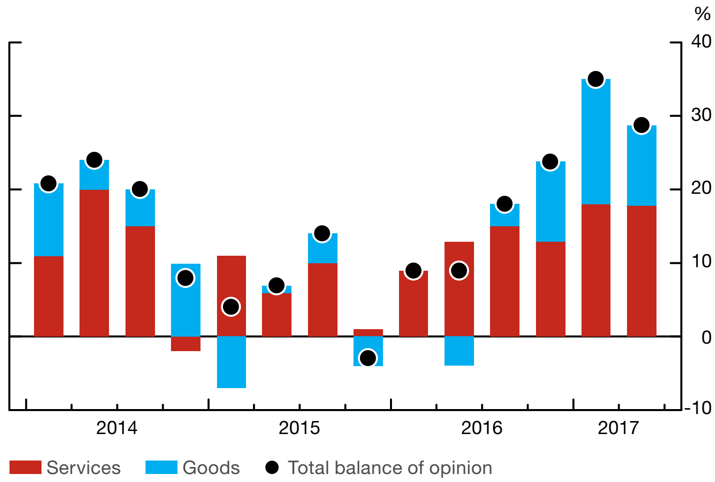
12 Rates of capacity utilization for many industries in the manufacturing sector are close to or at their historical highs. Examples of industries with high capacity utilization rates include chemical products, plastics, textiles, leather and allied products, wood products, furniture, and food and beverages.

13 For further discussion, see R. Barnett and R. R. Mendes, "A Structural Interpretation of the Recent Weakness in Business Investment," Bank of Canada Staff Analytical Note No. 2017-7 (July 2017).

14 Relative to April, oil prices have been revised down by about US$5. This leads to a downward revision to the level of oil and gas investment of about 5 per cent and to the level of GDP of about 0.1 per cent by the end of 2019.

Chart 12: Intentions to invest have increased across sectors in 2017

Contribution to balance of opinion,[a] quarterly data



a. Percentage of firms in the summer *Business Outlook Survey* expecting higher investment spending on machinery and equipment over the next 12 months minus the percentage expecting lower investment spending

Source: Bank of Canada

Last observation: 2017Q2

The summer *Business Outlook Survey* provides evidence that business sentiment continues to improve, which bodes well for investment. Intentions to increase spending on machinery and equipment over the next year remain broad-based across regions and sectors (**Chart 12**).

Consumer spending remains a significant contributor to growth…

Household expenditures are forecast to remain robust in the near term, supported by the expansion of employment, an increase in wage growth and strong credit growth. There are signs that a rebound in incomes is under way in energy-intensive provinces, while incomes outside these provinces continue to register solid gains. Moreover, the strength in consumer spending seen through much of the country is spreading to energy-intensive provinces—a trend that is expected to continue (**Table 4**).

Table 4: Economic activity in energy-intensive provinces is recovering

Percentage change, monthly data

		November 2014 to July 2016	Since July 2016
Employment	Energy-intensive provinces	-4.0	-0.3
	Rest of Canada	3.2	1.2
Retail sales (nominal)	Energy-intensive provinces	-5.7	7.5
	Rest of Canada	9.0	6.5
Housing resales (units)	Energy-intensive provinces	-20.8	-2.7
	Rest of Canada	15.4	-4.0

Note: The energy-intensive provinces are Alberta, Saskatchewan, and Newfoundland and Labrador.
Sources: Statistics Canada, Canadian Real Estate Association and Bank of Canada calculations
Last observations: Employment and retail sales, April 2017; housing resales, May 2017

Overall, growth in consumption is expected to ease as growth in disposable income gradually slows, partly as the effect of the introduction of the Canada Child Benefit fades. High household indebtedness and a slowdown in the housing market are also anticipated to weigh on consumer spending.

... while housing activity is likely to ease

Until very recently, housing market activity had been quite strong in some regions.[15] Of note was the sharp rise in resales and starts through the early spring in Toronto and surrounding areas. In addition, markets appeared to have bottomed out in Alberta, with sales up from their levels a year ago. National house price growth reached 20 per cent on a year-over-year basis in April, led by strong price gains in Toronto and surrounding areas and, to a lesser extent, in the Greater Vancouver Area.[16] Price growth in other parts of Canada was much more subdued.

However, a recent sharp decline in resales and moderation in starts in Toronto and surrounding areas have contributed to a slowdown in housing market activity since April. The Ontario Fair Housing Plan has likely played a role, but it is too early to assess the extent of its effect.[17]

Looking ahead, residential investment is anticipated to contribute less to overall growth. Macroprudential and housing policy measures, as well as higher longer-term borrowing costs resulting from the projected gradual rise in global long-term yields, are all expected to weigh on housing expenditures.[18]

CPI inflation is projected to ease before increasing to around 2 per cent

CPI inflation is anticipated to slow somewhat further in the third quarter, to average 1.3 per cent, owing in large part to the last installment of Ontario electricity rebates in July (**Table 3**).

Inflation is then projected to rise and reach close to 2 per cent in the middle of 2018 (**Chart 13**).[19] Two key relative price movements are expected to together add about 0.6 percentage points to inflation. First, food price inflation, which has been weak for some time, is expected to rebound as agricultural prices rise and as the disinflationary effects of increased competition

15 A more detailed discussion of the housing sector can be found in the June 2017 Bank of Canada *Financial System Review*.

16 This estimate is from the Canadian Real Estate Association MLS Home Price Index and is stronger than the 13 per cent national estimate from the Teranet–National Bank House Price Index Composite 11. This difference is partly explained by a higher weight assigned by the former to the strong price growth in the Greater Toronto Area outside Toronto and Hamilton.

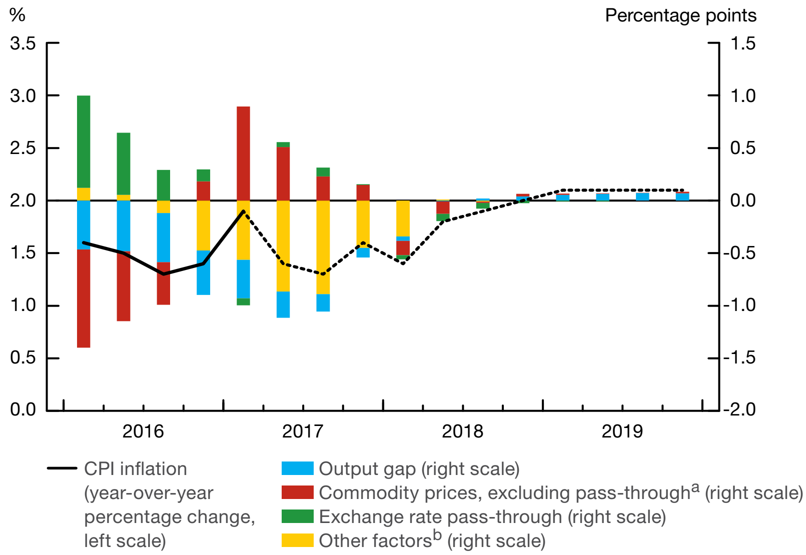
17 In April 2017, the Province of Ontario unveiled its Fair Housing Plan, which introduced a number of demand- and supply-side measures. Along with the previous housing policy changes introduced in 2016, the new measures will promote stability in the housing market and are expected to lead to weaker resale activity in the near term.

18 In addition, on July 6, 2017, the Office of the Superintendent of Financial Institutions released for public consultation draft changes that strengthen and clarify guidelines for mortgage underwriting by federally regulated financial institutions. For more information, see the news release.

19 By convention, the Bank assumes a constant exchange rate over the forecast horizon. Consequently, there is no effect from changes in the exchange rate on inflation once the effects of past movements have dissipated. The effect of commodity prices on inflation is positive but very small over 2019, since oil prices are assumed to remain near their recent average levels throughout the projection, while some non-energy commodity prices are forecast to increase modestly.

Chart 13: CPI inflation is expected to increase and remain close to 2 per cent over the projection

Contribution to the deviation of inflation from 2 per cent



a. This also includes the effect on inflation of the divergence from the typical relationship between gasoline and crude oil prices, the introduction of the cap-and-trade plan in Ontario and the Alberta carbon levy.

b. From 2016Q4 to 2018Q2, on net, other factors mostly represent the expected impact of below-average inflation in food products, which partly reflects improved crop supplies and intensified competition in the retail food sector and the expected impact on electricity prices of Ontario's Fair Hydro Plan.

Sources: Statistics Canada and Bank of Canada estimates, calculations and projections

in the retail food sector fade (**Chart 14**).[20] Second, the dampening impact of the electricity rebates in Ontario on inflation is anticipated to gradually dissipate.

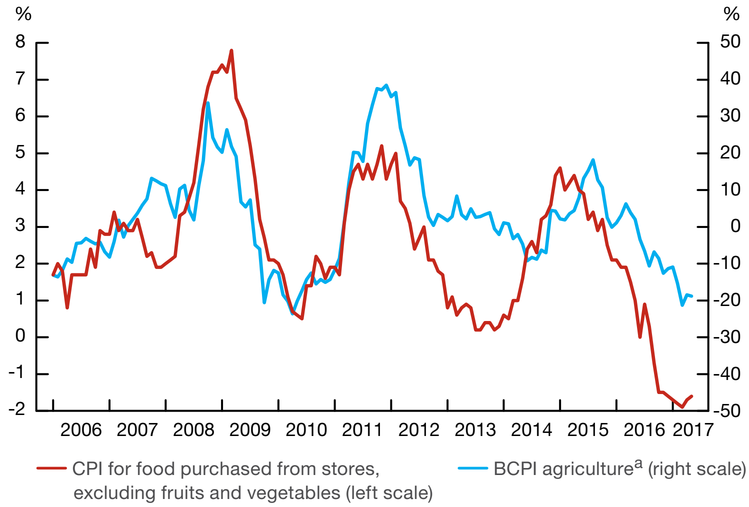
In addition, the expected closing of the output gap will have an impact. In the third quarter of this year, the effect of excess supply subtracts 0.2 percentage points from inflation. As excess supply is absorbed, inflation is expected to return sustainably close to the 2 per cent target.

This projection is consistent with medium- and long-term inflation expectations remaining well anchored. The June 2017 Consensus Economics forecast for CPI inflation is 1.9 per cent in 2017 and 2.0 per cent in 2018. Based on the past dispersion of private sector forecasts, a reasonable range around the base-case projection for CPI inflation is ±0.3 percentage points. This range is intended to convey a sense of forecast uncertainty.

20 Based on global agricultural prices, weakness in food prices has been more pronounced than expected, suggesting that increased competition in the domestic retail food sector has also dampened price growth. Historically, movements in food price inflation have been broadly in line with lagged movements in global agricultural prices. The effect of increased competition in the retail food sector on inflation is assumed to dissipate by early 2018.

Chart 14: Consumer food prices fell by more than agricultural prices would have suggested

Year-over-year percentage change, monthly data



a. Bank of Canada commodity price index, in Canadian dollars and lagged eight months

Sources: Statistics Canada and Bank of Canada calculations

Last observations: CPI, May 2017; BCPI, September 2016

Risks to the Inflation Outlook

The possibility of a notable shift toward protectionist global trade policies remains a source of uncertainty surrounding the outlook. However, it is difficult to fully quantify the implications of this shift without more clarity about the actual policy measures and their timing. The Bank applied judgment to capture the adverse effects of this uncertainty on business investment and exports in the base case. As in April, this helps to better balance the risks around the outlook.

The Bank's outlook for inflation is subject to several upside and downside risks originating from both the external environment and the domestic economy. Overall, the Bank assesses that the risks to the projected path for inflation are roughly balanced. As in past reports, the focus is on a selection of risks identified as most important for the projected path for inflation, drawing from a larger set of risks taken into account in the forecast.

The evolution of the risks since April is summarized in **Table 5**. Two of the risks in the April Report have been modified. First, sluggish business investment in Canada has been incorporated into a broader risk that also includes weaker export growth. Second, higher potential output in Canada is now part of a more comprehensive risk that covers persistent weakness in global and Canadian inflation.[21]

(i) Persistent weakness in global and Canadian inflation

Inflation in some advanced economies, including Canada, has slowed. While much of the recent slowdown can be accounted for by temporary factors, it is possible that global structural factors, discussed on page 4, may be playing a larger role than believed. Over the projection horizon, these structural factors could exert disinflationary pressure in Canada and abroad that is not fully captured in the base-case projection.

Also, as discussed in the April Report, the decline in the measures of core inflation in Canada could indicate that the current level of potential output is higher than estimated, resulting in more excess supply and less inflationary pressure. In addition, as the economy approaches full capacity, firm creation and business investment could rise by more than expected, and workers who have left the labour force or who were underemployed would be fully re-employed, boosting potential output over the projection period.[22]

21 The risks of higher global long-term interest rates and higher commodity prices mentioned in the April Report are not highlighted in this Report but are still being monitored.

22 For background information, see J. Ketcheson, N. Kyui and B. Vincent, "Labour Force Participation: A Comparison of the United States and Canada," Bank of Canada Staff Analytical Note 2017-9 (July 2017).

(ii) Stronger real GDP growth in the United States

While the base case includes US economic growth that is above the rate of potential, an even stronger growth path is also possible. The ongoing recovery together with prospective policy changes, such as fiscal stimulus and deregulation, could trigger “animal spirits,” or a surge in business confidence that leads to an acceleration in the rate of investment, firm creation, innovation and productivity growth. Stronger US household spending and public and private investment would have positive spillovers for Canadian business confidence, investment and exports.

(iii) Weaker exports and sluggish business investment in Canada

While the Bank’s projection for exports and business investment is cautious, there is a risk that competitiveness challenges may be stronger than anticipated. A further loss in the market share of Canadian exporters could postpone prospective investment projects or move some investment activities abroad.

The disappointing performance of business investment since the 2007–09 global financial crisis could also indicate that demographic forces or other structural factors are more relevant than previously estimated.

(iv) Stronger consumption and rising household debt in Canada

Strong motor vehicle and other retail sales combined with the high level of consumer confidence point to robust underlying consumption. While the Bank expects growth in consumption to slow in the coming quarters, its recent strength could persist if wage and household income growth were to increase faster than expected as the labour market approaches full employment. Moreover, the recent strength in credit growth could persist longer than anticipated. While this would provide a boost to economic activity, it could further exacerbate the macroeconomic and financial vulnerabilities associated with high household indebtedness.

(v) A house price correction in overheated markets in Canada

Imbalances in the Canadian housing market are an important vulnerability, particularly in areas where house prices have grown at a faster pace than can be readily explained by fundamentals, such as in the greater Toronto and Vancouver areas.[23] A regional house price correction would have important adverse effects on residential investment, related consumption and real estate services in the affected regions. The fall in house prices could further weigh on consumption through negative wealth and collateral effects and could be amplified by the high levels of household indebtedness. Overall, a regional house price correction would most likely be localized but could have a material negative impact on the macroeconomic outlook.

23 For more details, see Risk 2 in the June 2017 Bank of Canada *Financial System Review* (page 20).

Table 5: Evolution of risks since the April *Monetary Policy Report*

Risk	What has happened	What is being monitored
Persistent weakness in global and Canadian inflation	▪ In some advanced economies, including Canada, excess capacity is being absorbed, but inflation has slowed ▪ Similarly, wage pressures in many economies remain modest despite improving labour markets ▪ CPI and core inflation measures have been weaker than expected	▪ Measures of core inflation in advanced economies, including Canada ▪ Estimates of the output gap ▪ Measures of slack in the labour market, such as involuntary part-time work, hours worked, participation rates and long-term unemployment ▪ Wages and labour productivity ▪ Adoption of new technologies; growth in e-commerce
Stronger real GDP growth in the United States	▪ Recent indicators suggest a rebound in GDP growth in the second quarter, as expected ▪ Labour productivity softened in the first quarter ▪ Policy uncertainty remains elevated	▪ Firm creation, investment and industrial production ▪ Labour force participation rate and labour productivity ▪ Business and consumer confidence ▪ Formal budget and other policy announcements
Weaker exports and sluggish business investment in Canada	▪ Global uncertainty remains elevated ▪ Canadian non-commodity exports have remained relatively flat since 2016 despite an improvement in foreign demand ▪ Surveys of firms suggest an improvement in investment intentions across regions and sectors	▪ Foreign demand measures ▪ Export market shares ▪ Capital expenditure announcements ▪ US business investment and other sources of demand for Canadian exports ▪ Indicators of investment intentions and business sentiment of Canadian firms ▪ Imports of machinery and equipment
Stronger consumption and rising household debt in Canada	▪ The savings rate decreased in 2017Q1 ▪ Consumption strengthened further with motor vehicle sales and retail sales stronger than expected ▪ Household indebtedness has continued to rise	▪ Motor vehicle and retail sales ▪ Consumer sentiment ▪ Housing activity and prices ▪ Household indebtedness and savings behaviour
A house price correction in overheated markets in Canada	▪ Imbalances in the housing market have increased through 2017, but recent data point to a sharp decline in activity in Ontario in 2017Q2	▪ Housing activity and prices ▪ Consumer sentiment ▪ Household spending ▪ Regulatory environment ▪ Residential mortgage credit