OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
CANADA
BUREAU DU DIRECTEUR PARLEMENTAIRE DU BUDGET

Economic and Fiscal Assessment

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The *Federal Accountability Act* mandates the Parliamentary Budget Officer (PBO) to provide independent analysis to the Senate and House of Commons on the state of the nation's finances, government estimates and trends in the national economy.

This report seeks to fulfill the May 27 2009 Standing Committee of Finance request that "the Parliamentary Budget Officer provide the committee with its assessment of economic growth projections, the unemployment rate and federal government revenues and expenditures for the next five years."

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* The authors would like to thank Mostafa Askari, Kevin Page and Stephen Tapp for their helpful comments. Any errors or omissions are the responsibility of the authors.

Key Points

The global economy is in the midst of the worst economic downturn since the Second World War. Both developed and emerging economies have seen dramatic reductions in economic activity. Most important for Canada, the sharp contraction in the U.S. economy has been led by large declines in a number of sectors that are of particular importance to Canadian exporters. Reflecting, in part, the weakness in global demand, commodity prices have declined sharply since peaking in mid-2008, resulting in a significant contraction in Canadian nominal gross domestic product (GDP) – the broadest measure of the Government's tax base.

Based on the June 2009 PBO survey of private sector forecasters, the outlook for nominal GDP is substantially lower than the Government's risk-adjusted projection in Budget 2009; as well, the outlook for the unemployment rate is significantly higher than expected at the time of Budget 2009.

(Per cent)	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Real GDP growth	-2.4	2.2	3.5	3.8	3.3	2.9
Nominal GDP growth	-4.8	3.6	5.7	6.3	5.4	4.9
Unemployment rate	8.7	9.4	8.9	8.1	7.2	6.8

Given the revised economic outlook, updated assumptions, and announced post-budget measures, PBO is now projecting cumulative budgetary deficits of $155.9 billion over the 5-year projection period 2009-10 to 2013-14. The budget deficit is expected to peak at $48.6 billion (3.2 per cent of GDP) in 2009-10, improving to $16.7 billion (0.9 per cent of GDP) by 2013-14.

($ billions)	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Revenues	233.7	223.4	235.6	250.3	265.6	280.7
Expenses	237.2	272.0	277.0	277.9	287.2	297.4
Budgetary Balance	**-3.5**	**-48.6**	**-41.3**	**-27.6**	**-21.6**	**-16.7**
Percent of GDP						
Budgetary Balance	-0.2	-3.2	-2.6	-1.7	-1.2	-0.9

Although there is a high degree of uncertainty surrounding estimates of potential output and structural budget balances, PBO's calculations suggest that the budget is not structurally balanced over the medium term. That said, the structural deficits projected in 2012-13 and 2013-14 are small relative to the size of the economy.

PBO judges that the risks to its fiscal outlook are roughly balanced in the near term. However, the balance of risks to the medium-term fiscal outlook is tilted to the downside.

Contents

1. Recent Economic Developments[1]

External Environment

The global economy is in the midst of the worst economic downturn since the Second World War. In September of last year what had been a global credit crunch turned into a full-fledged global financial crisis. Since that time both developed and emerging economies have seen dramatic reductions in economic activity prompting an unprecedented global policy response by both monetary and fiscal policy authorities. Real gross domestic product (GDP) has contracted in all G7 countries over the last year (Table 1-1). The IMF is currently forecasting that the global economy will contract by 1.3 per cent in 2009, the first annual decline in global economic activity since at least 1960.

Table 1-1

Real GDP in G7 Countries, 2008Q2 to 2009Q1

(Per cent change at annual rates)

	2008Q2	2008Q3	2008Q4	2009Q1
Canada	0.3	0.4	-3.7	-5.4
United States	2.8	-0.5	-6.3	-5.5
United Kingdom	-0.2	-2.9	-7.0	-9.3
Germany	-2.0	-2.1	-8.6	-14.4
France	-1.6	-0.8	-5.7	-4.8
Italy	-2.2	-3.1	-8.3	-10.1
Japan	-2.2	-2.9	-13.5	-14.2

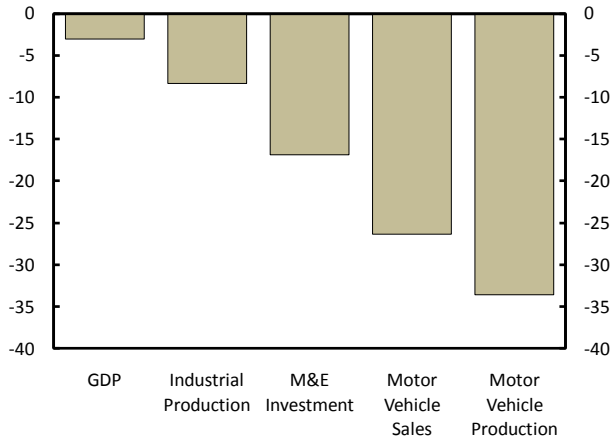
Sources: Office of the Parliamentary Budget Officer; Haver Analytics.

From a Canadian perspective, external demand has fallen more than the headline real GDP figures would suggest. For example, the U.S. economy contracted by 6.3 and 5.5 per cent in 2008Q4 and 2009Q1 respectively, but over the last two quarters there was a significantly larger contraction in a number of key U.S. sectors that are important to Canadian exporters. Specifically, U.S. industrial and motor vehicle production, motor vehicle sales and investment in machinery and equipment have all declined markedly over the last two quarters (Figure 1-1). Monthly data suggest that the recent weakness has continued in the second quarter. With no change in June, U.S. industrial and motor vehicle production will decline by over 10 per cent, and U.S. motor vehicle sales have remained at depressed levels despite a small bounce back in the second quarter.

Figure 1-1

Change in Key U.S. Sectors since 2008Q3

(Cumulative per cent change)



Sources: Office of the Parliamentary Budget Officer; Bureau of Economic Analysis; Haver Analytics

Notes: The figures in this chart represent the cumulative decline since the third quarter of 2008.

Policy Interest Rates

Monetary authorities around the world have responded quickly and aggressively to the current global economic slowdown by cutting short-term lending rates to historically low levels and effectively zero per cent in some cases (Figure 1-2). In Canada, the Bank of Canada has lowered the target overnight interest rate by 425 basis points since November 2007, and it now sits at 0.25 per cent. The Bank has set the current level of the overnight rate as the effective lower bound and has committed to hold rates at this level until the

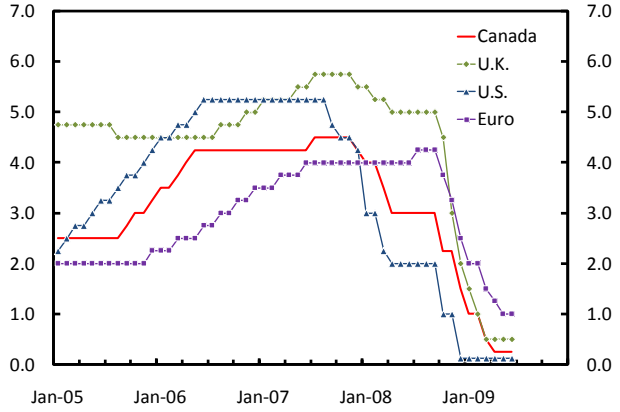
[1] All quarterly growth rates in Section 1 through Section 3 are expressed at annual rates, and all monthly growth rates are period over period, unless otherwise noted.

end of the second quarter of 2010 conditional on its outlook for inflation.

Figure 1-2

Official/Policy Interest Rates, 2005 to 2009

(Per cent)



Sources: Office of the Parliamentary Budget Officer; Haver Analytics

Notes: Data in the figure represent the official/policy interest rates of the Bank of Canada, Bank of England, Federal Reserve and European Central Bank.

Commodity Prices

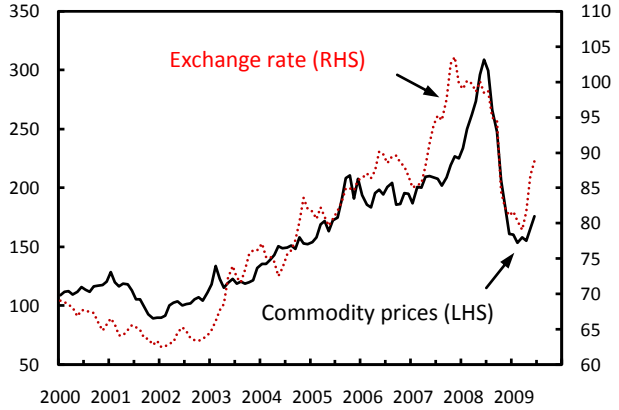
Commodity prices, based on the Bank of Canada's index, peaked in June 2008 when oil, natural gas and most non-energy commodity prices were at, or near, all-time highs. Reflecting, in part, the weakness in global demand, commodity prices have declined sharply since that time with the Bank's index falling by more than 50 per cent before hitting a trough in the second half of February (Figure 1-3).

Commodity prices have subsequently recovered only 14 per cent of their lost ground. This partial recovery is primarily due to an increase in oil prices which have risen from a trough of $31 per barrel at the end of last year to around $70 per barrel of late. However, the recovery in oil prices has not led to a generalized recovery in commodity prices, and natural gas and non-energy commodity prices remain 71 and 27 per cent below their earlier peaks respectively.

Figure 1-3

Commodity Prices and the Canadian Dollar, 2000 to 2009

(Levels)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: Commodity prices are based on the Bank of Canada's commodity price index which is expressed in U.S. dollars (1981-1990 = 100).

The exchange rate is expressed in U.S. cents.

Canadian Dollar

The Canada-U.S. exchange rate fell significantly in the second half of last year and the first half of 2009 as commodity prices retreated and investors moved funds into the U.S. as a safe haven against the global downturn. However, the Canadian dollar has appreciated by around 12 per cent relative to its U.S. counterpart since reaching a trough of 77 U.S. cents on March 9 (Figure 1-3). The recent strength of the Canadian dollar has been driven by a generalized decline in the U.S. dollar against most major currencies and an improvement in commodity prices.

Financial and Credit Markets

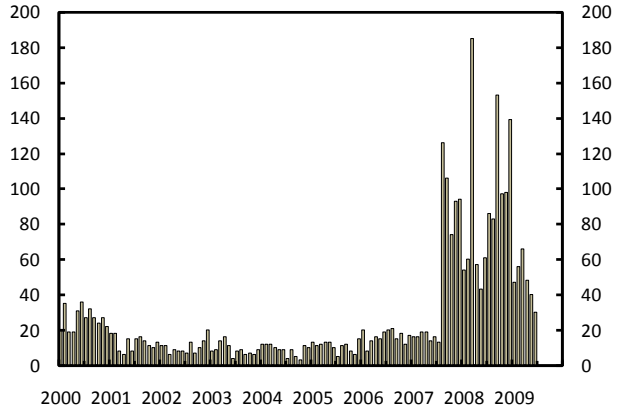
Corporate borrowing spreads increased significantly in August 2007 when investors first learned of the exposure that many financial institutions had to subprime mortgage-backed securities (Figure 1-4). Spreads slowly narrowed through the remainder of 2007, but subsequently spiked further in 2008. First, spreads increased in March due to the market unrest caused by the

emergency funding from the Federal Reserve to Bear Stearns and its subsequent sale to J.P. Morgan. Second, spreads widened again in September after Lehman Brothers entered bankruptcy protection and the Federal Reserve was forced to loan American International Group $85 billion in order to save it from a similar fate. Since that time corporate borrowing spreads have remained volatile, but have recently narrowed to their lowest point since the onset of the global credit crunch.

Figure 1-4

Corporate Paper Spread, 2000 to 2009

(Basis points)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

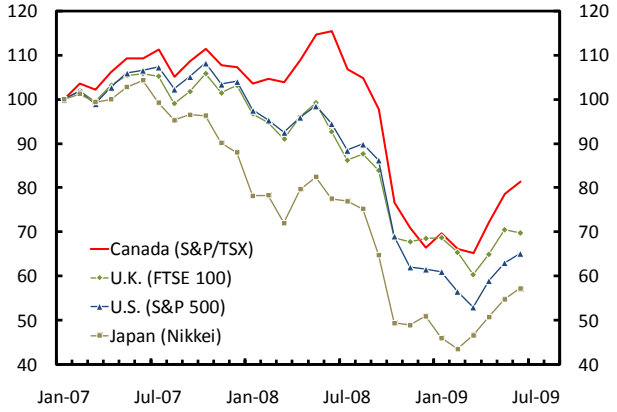
Notes: Corporate spreads are measured as the difference between the 90-day prime corporate paper rate and the Canadian 3-month Treasury bill rate.

Global stock markets have also recovered somewhat in the last few months. After peaking throughout 2007 global stock indices declined significantly and based on monthly data fell by as much as 58 per cent, peak-to-trough, before reaching a trough in March of this year. The TSX was the exception late in 2007 and early in 2008 as it increased through this period reflecting the strength of the run-up in commodity prices noted earlier, which pushed the index to a historical peak in June 2008 (Figure 1-5). The TSX subsequently declined by over 40 per cent, which was less severe a decline than those observed in a number of other countries. Since March the TSX, like most indices, has partially reversed earlier declines, increasing by just over 20 per cent, but still remains roughly 30 per cent below its peak in June of last year.

Figure 1-5

Stock Indices, 2007 to 2009

(Index, January 2007 = 100)



Sources: Office of the Parliamentary Budget Officer; Haver Analytics

2. Domestic Economy

A. National Accounts (2009Q1)

On June 1st, Statistics Canada released the National Income and Expenditure Accounts which showed that Canadian real GDP declined by 5.4 per cent in the first quarter, its second largest decline since 1961, but less severe than PBO and private sector economists had anticipated.

However, focusing on headline real GDP growth may not provide the most fulsome picture of Canada's economic performance in the first quarter. First, examining other performance indicators such as nominal GDP and real gross domestic income (GDI) is also important since they respectively represent the broadest measure of the tax base and the best measure of the purchasing power of individuals and businesses in Canada. Second, understanding the components that contributed to headline real GDP can provide additional insight into the current state of real economic activity.

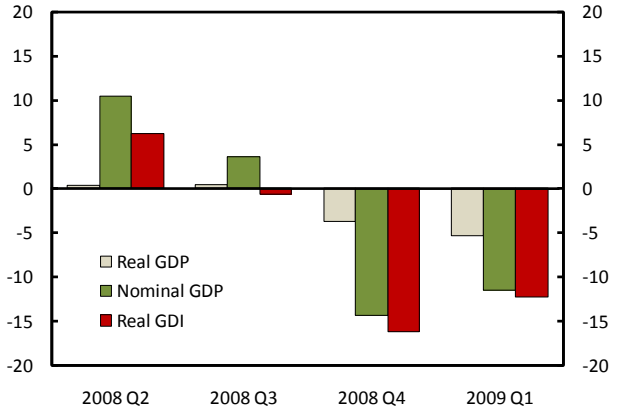
Nominal GDP

Nominal GDP declined by 11.5 per cent in the first quarter after falling 14.4 per cent in the fourth quarter of 2008 (Figure 2-1). These are the two largest declines in nominal GDP on record – dating back to 1961 and combined represent a $109 billion reduction, at annual rates, in this measure of the tax base.

Figure 2-1

Real GDP, Nominal GDP and Real GDI

(Per cent change, annual rates)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Real GDI

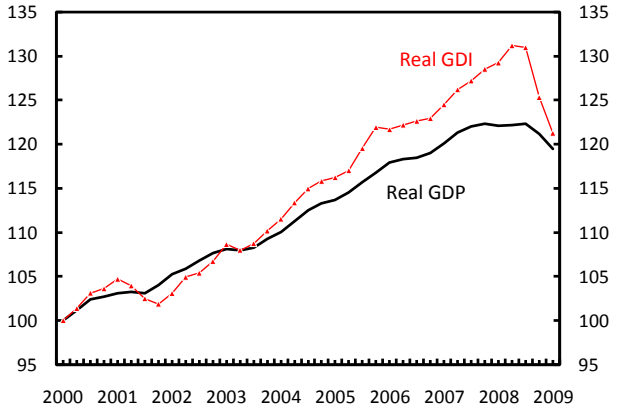
While real GDP provides a measure of the volume of domestic production, real GDI also captures the increase in purchasing power from terms of trade gains (i.e. gains from the difference between Canada's export and import prices).[2]

Figure 2-2 shows a comparison of real GDP and real GDI since 2000. As commodity prices, and consequently the terms of trade, increased through 2002 to the middle of 2008, the purchasing power of households and businesses in Canada increased significantly and a positive gap between real GDI and real GDP emerged, ultimately peaking in the second quarter of 2008. With the rapid reversal in commodity prices and declines in the Canadian dollar experienced in the last two quarters, real GDI declined by 16.2 per cent and 12.3 per cent in 2008Q4 and 2009Q1, respectively (Figure 2-1). This decline closed most of the gap between real GDP and real GDI, which is currently at roughly the same level it was in the second quarter of 2005, essentially erasing four years worth of gains in the purchasing power of households and businesses in Canada (Figure 2-2).

Figure 2-2

Real GDP and Real GDI, 2000Q1 to 2009Q1

(Index, 2000Q1 = 100)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Components of Real GDP

Both final domestic demand and inventory investment were weak in the first quarter of the year, but these declines were partially offset by a record drop in imports, which should not be interpreted as a sign of strength in the domestic economy. Specifically, final domestic demand declined 5.7 per cent in the first quarter of 2009, the largest decline since 1990Q2, due to declines in business investment, residential construction and personal expenditures (Table 2-1). Business investment was exceptionally weak with investment in machinery and equipment and non-residential construction falling by 35.7 and 14.3 per cent, respectively. Residential investment contracted for the fifth consecutive quarter declining by 21 per cent due primarily to a

[2] For a more detailed review of real GDI as well as a comparison between recent trends in real GDI in Canada and the United States see the PBO Briefing Note titled, "Canada's Recent Economic Performance" published March 10, 2009.

significant decline in new housing construction. Finally, personal expenditures declined for a second consecutive quarter (-1.6 per cent) as consumers continued to pull back on purchases of durable goods in particular, although all components of personal expenditures declined in the quarter.

Table 2-1

Summary of the First-Quarter National Accounts

(Per cent and percentage points at annual rates)

	Growth	Contribution to Growth
Real GDP	-5.4	-5.4
Final Domestic Demand	-5.7	-5.8
Consumption	-1.6	-0.9
Government Spending	1.2	0.3
Residential Investment	-21.0	-1.5
Business Investment	-25.8	-3.8
Net Trade	N.A.	3.6
Exports	-30.4	-11.1
Imports	-37.8	14.7
Inventory Investment	N.A.	-4.2
Statistical Discrepancy	N.A.	0.7
Addendum:		
GDP Inflation	-6.5	N.A.
Nominal GDP	-11.5	N.A.
Real GDI	-12.3	N.A.

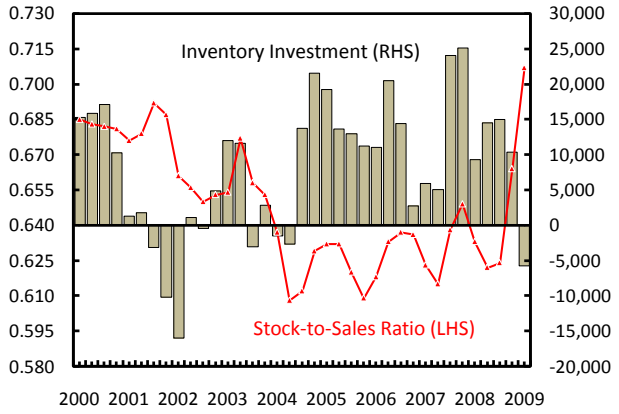
Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Inventory investment declined in the first quarter of 2009 and subtracted 4.2 percentage points from growth. Although this was the first decline in inventory investment since the second quarter of 2004, a significant drop in sales caused the stock-to-sales ratio[3] to increase further in the first quarter, pushing it to its highest level since the first quarter of 1999 (Figure 2-3).

Figure 2-3

Inventory Investment and Stock-to-Sales Ratio

(Level)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: The stock-to-sales ratio is measured in nominal dollars and is calculated as the stock of inventories divided by the level of sales. Inventory investment is expressed in millions of chained 2002 dollars.

Finally, net trade (i.e., exports minus imports) contributed 3.6 percentage points to growth partially offsetting the declines in final domestic demand and inventory investment. Although Canadian exports declined by 30.4 per cent in the first quarter due primarily to a significant decline in foreign demand for automotive products, industrial goods and materials and machinery and equipment, net trade contributed positively to growth in the quarter as imports contracted by 37.8 per cent. The decline in imports was the largest decline on record and added 14.7 percentage points to growth in the first quarter after contributing 8.9 percentage points to growth in the preceding quarter. Moreover, imports contributed significantly more to growth than PBO's demand-supply analysis would have suggested given the observed movements in final domestic demand, inventory investment and exports.[4]

[3] For a detailed analysis of the stock-to-sales ratio consult Annex A.

[4] See Annex B for more details on PBO's demand-supply analysis.

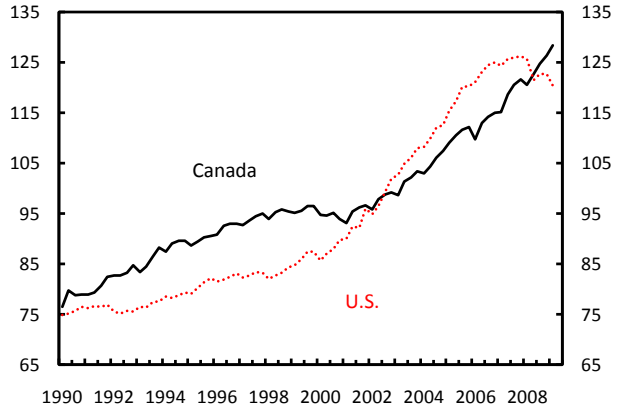
Household Assets and Liabilities

The net worth of Canadian households declined 1.3 per cent in the first quarter following declines of 2.9 per cent and 4.6 per cent in 2008Q3 and 2008Q4, respectively. As Statistics Canada has noted, the decline in net worth relative to disposable income has been larger in the United States than in Canada. However, it is important not to overlook the fact that Canadian households are currently carrying a significant amount of debt. In fact, Canadian household mortgage and consumer credit debt as a share of personal disposable income has increased substantially in the last decade and now stands at 128.3 per cent (Figure 2-4). This level of debt could restrain consumer spending in Canada going forward, especially once the global recovery begins to take hold and interest rates begin to rise further from their historically low levels.

Figure 2-4

Mortgage and Consumer Credit Debt Relative to Personal Disposable Income

(Per cent)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Bureau of Economic Analysis; Haver Analytics

Notes: Calculated as the sum of household mortgage and consumer credit liabilities divided by personal disposable income. Canadian household figures include unincorporated businesses while the U.S. figures do not. U.S. figures include non-profit businesses while Canadian figures do not.

B. Recent Economic Indicators

Recent economic indicators have provided a mixed picture of the current economic situation. Many economists have commented that existing home sales, motor vehicle sales, manufacturing shipments and wholesale trade as well as an improvement in consumer and business confidence point to a recession that is entering the recovery stage. However, other indicators such as monthly GDP, monthly merchandise exports, housing starts, motor vehicle production, and employment point to a further contraction in the Canadian economy.

It is important to remember that monthly indicators are volatile and therefore caution should be taken when using them to discern trends in the economy. In addition, any large changes in indicators should be put into perspective using recent history.

Labour Market

The Canadian economy has lost 362,500 jobs, on a net basis, since October, equal to 2.1 per cent of total employment (Figure 2-5). On a monthly basis, the pace of job losses has decelerated since the beginning of the year having declined by 0.2 per cent in May compared to a fall of 0.8 per cent in January.

The vast majority of job losses has taken place in the goods sector (89 per cent), with manufacturing and construction accounting for over 90 per cent of the losses in the sector. Employment in the service sector has remained essentially unchanged over the same period, having declined by only 0.3 per cent. However, despite the service sector's better relative performance there have been notable employment losses in specific industries such as retail and wholesale trade and transportation services. For further detail regarding labour market developments see the PBO Briefing Note *Canadian Labour Market Developments* by Stephen Tapp (July 2009).

On a provincial basis, 8 of the 10 provinces have suffered net employment losses since October.

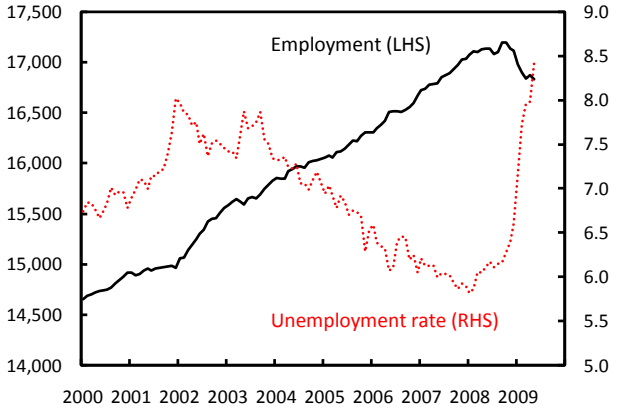
However, because of the significant job losses in the manufacturing sector Ontario has accounted for a disproportionately large portion of the recent job losses relative to its share of total employment. Specifically, the Ontario economy has lost 233,600 jobs, or 64 per cent of economy-wide employment losses, since October compared to its 39 per cent share of employment. In contrast, Saskatchewan and Manitoba are the only two provinces to have net employment gains over the same period with small increases of 0.7 per cent and 0.2 per cent, respectively.

Since October, employment losses have led to a significant increase in unemployment. As a consequence, the unemployment rate has risen sharply, reaching 8.4 per cent in May, its highest level since 1998 (Figure 2-5).

Figure 2-5

Employment and the Unemployment Rate

(Level)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

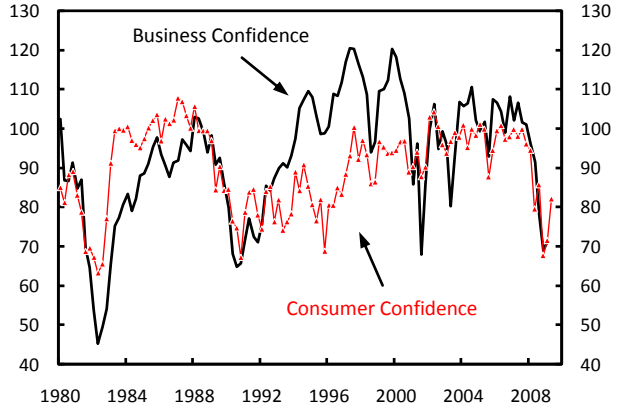
Consumer and Business Confidence

Both consumer and business confidence have increased recently. Consumer confidence increased 14.2 points since its low point in December of 2008. However the level of consumer and business confidence remains significantly below its recent historical average. (Figure 2-6).

Figure 2-6

Consumer Confidence and Business Confidence, 1980Q1 to 2009Q1

(Index 2002=100)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Conference Board of Canada; Haver Analytics

Housing Market

Existing home sales have risen for four consecutive months and have now recovered 61 per cent of the decline observed over the May 2007 to January 2009 period (Figure 2-7). Even with no further increase in June they are set to increase 159 per cent from the level observed in the first quarter. This growth comes during a period in which mortgage rates are at historically low levels and home prices have declined significantly, thus improving affordability.

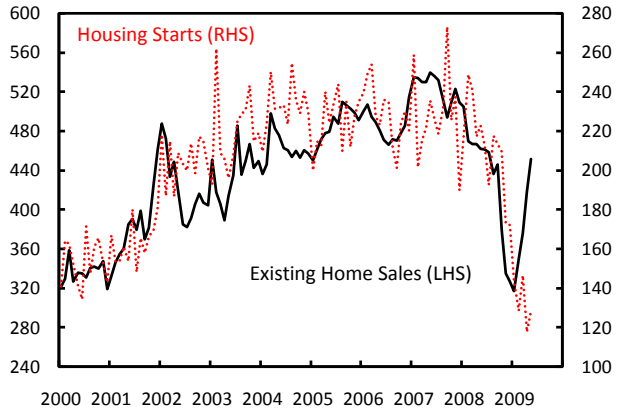
New housing starts rose by 9.2 per cent in May following a 19.7 per cent decline in April. As a result, housing starts will likely decline in the second quarter, the fifth consecutive quarterly decline. The increase in May could signal that housing starts are beginning to stabilize but at a significantly lower level than what took place over the last ten years (Figure 2-7). The Canadian Mortgage and Housing Corporation (CMHC) anticipates that housing starts will average 146,000 units over the 2009-2010 period after averaging 221,000 starts over the 2002-2008 period.[5]

[5] Canada and Mortgage and Housing Corporation, *Housing Market Outlook*, page 1.

Figure 2-7

Total Housing Starts and Existing Home Sales, January 2000 to June 2009

(Thousands)



Sources: Office of the Parliamentary Budget Officer; Canada Mortgage and Housing Corporation; Canadian Real Estate Association; Haver Analytics; Conference Board of Canada

Notes: Housing starts are expressed in thousands of units, seasonally adjusted at an annual rate (right scale).
Existing home sales are expressed in thousands of units, seasonally adjusted at an annual rate (left scale).

GDP at Basic Prices

Real economic activity contracted 0.1 per cent in April following a decline of 0.3 per cent in March. Manufacturing production declined by 1.0 per cent, and the output of the energy sector declined by 0.5 per cent. These declines together with a decline of 0.6 per cent in retail sales, more than offset increases in wholesale trade and the output of real estate agents which increased by 0.5 and 8.2 per cent, respectively.

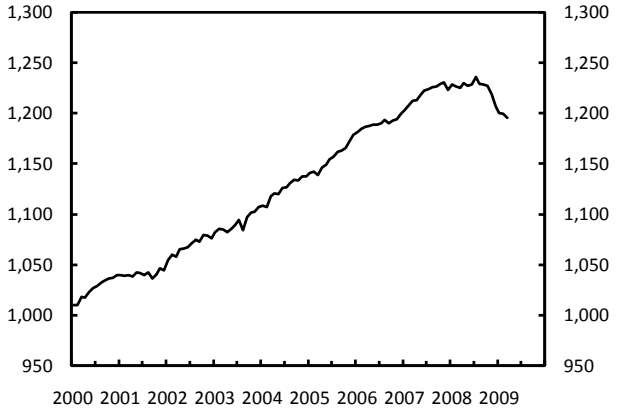
April's contraction was the ninth consecutive decline in monthly GDP at basic prices, which now stands at its October 2006 level (Figure 2-8) suggesting that firms have significantly reduced output to cope with the decreased demand for their goods and services. Much of the recent decline in monthly GDP can be attributed to reductions in motor vehicle production which has declined 57 per cent since the fourth quarter of 2006 (Figure 2-9).

The economy-wide stock-to-sales ratio increased in the first quarter as sales declines outstripped a drawdown in inventories suggesting further adjustments to output may be forthcoming. Plant shutdowns at Chrysler in May and June and anticipated shutdowns at General Motors will also likely impact output in the near term.

Figure 2-8

Monthy GDP at Basic Prices, 2000 to 2009

(Level)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: Monthly GDP at basic prices is expressed in billions of chained 2002 dollars and is seasonally adjusted at an annual rate.

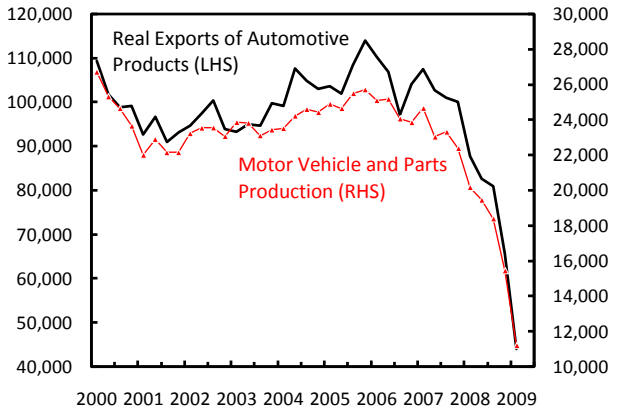
Merchandise Exports

Real exports declined by 2.7 per cent in April after falling 2.4 per cent March as reductions in U.S. production have been focused in sectors that are particularly important to Canadian exports. Since the U.S. recession began in December 2007, exports of motor vehicles, industrial products and machinery and equipment have declined by 48 per cent, 21 per cent and 9.4 per cent, respectively (Figure 2-9). While exports of these components have experienced sporadic gains in recent months, a sustained increase in foreign demand will be required for a meaningful recovery in Canadian exports.

Figure 2-9

Motor Vehicle Manufacturing and Real Exports, 2000Q1 to 2009Q1

(Millions of 2002 dollars)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: Both series are quarterly, expressed in millions of chained 2002 dollars and seasonally adjusted at annual rates.

3. Canadian Economic Outlook

PBO surveys private sector forecasters as part of its economic and fiscal forecasting process.[6] The June 2009 PBO private sector survey contains the responses from ten private forecasters for six key economic variables including real GDP growth, GDP inflation, 3-month Treasury bill rates, 10-year government bond rates, the unemployment rate and CPI inflation. PBO also surveys private sector forecasters on their near-term outlook for real GDP growth and GDP inflation.

Near-term Economic Outlook, 2009Q2-2009Q4

Real GDP growth

Real GDP growth in both the fourth quarter of 2008 and the first quarter of 2009 (-3.7 and -5.4 per cent, respectively) was weaker than private sector forecasters expected at the time of Budget 2009 (-2.3 and -2.6 per cent respectively).

Based on the June 2009 PBO survey, forecasters expect real GDP to decline by 2.9 per cent in the second quarter, and then to increase by 0.3 per cent and 2.6 per cent in the third and fourth quarters, respectively. Figure 3-1 shows that while the recession is expected to end in the same quarter as anticipated in Budget 2009, the growth profile is considerably weaker in the second quarter (1.6 percentage points lower) and third quarter (1.5 percentage points lower) although slightly stronger in the fourth quarter (0.3 percentage points higher).

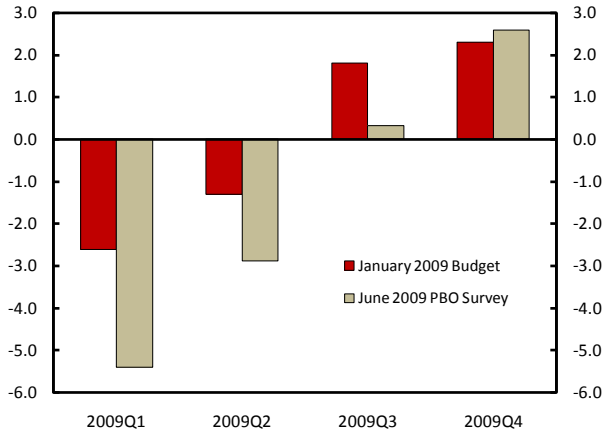
GDP Inflation

GDP inflation in the fourth quarter of 2008 and the first quarter of 2009 was also weaker than anticipated at the time of Budget 2009. Private sector forecasters now anticipate GDP inflation of -0.7 per cent in the second quarter. GDP inflation of 0.7 per cent and 1.2 per cent is expected for the third and fourth quarters, respectively.

Figure 3-1

Near-term Outlooks for Real GDP Growth

(Per cent, annual rates)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics; Finance Canada

[6] All private sector forecasts that were no older than three months and were available before June 15 were included in the June 2009 survey.

Canadian Economic Outlook 2009-2014

Real GDP Growth

Reflecting larger-than-expected declines in real GDP in the fourth quarter of 2008 and the first quarter of 2009, as well as revisions to growth prospects over the remainder of 2009, the private sector outlook for annual real GDP growth in 2009 has been revised down from -0.8 per cent at the time of Budget 2009 to -2.4 per cent, based on the June 2009 PBO survey (Table 3-1). This would mark the second weakest annual growth performance since 1962, with the weakest occurring in 1982 at -2.9 per cent. Annex C presents the complete June 2009 PBO survey results and single-year forecasts.

Table 3-1

Real GDP Growth Outlook

(Per cent)

	2008	2009	2010	2011-2014
Budget 2009	0.7	-0.8	2.4	3.0
June 2009 PBO survey	0.4	-2.4	2.2	3.4

Sources: Office of the Parliamentary Budget Officer; Finance Canada

With growth expected to improve in the U.S. and globally in the second half of 2009 through 2010, Canadian real GDP growth is expected to rebound to 2.2 per cent in 2010, which is still slightly weaker than the 2.4 per cent anticipated in Budget 2009. That being said, the current private sector outlook reflects expectations of the impact on real GDP growth of Budget 2009 stimulus measures, which implies that the downward revisions to the baseline outlook were substantial, more than offsetting the estimated positive impacts of the stimulus measures.

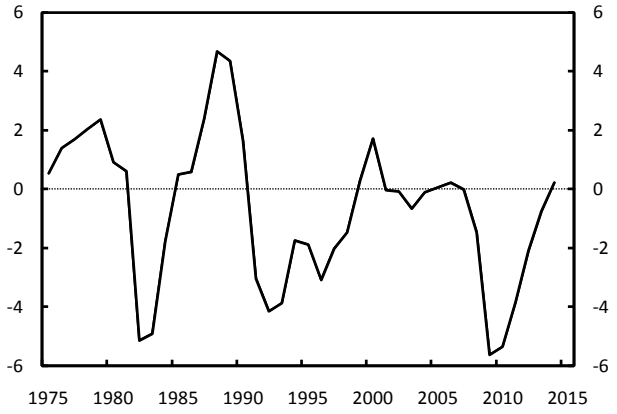
Based on the June 2009 PBO survey, private sector forecasters expect real GDP growth to average 3.4 per cent over 2011-2014, higher than the 3.0 per cent projected in the budget. The higher medium-term growth forecast likely reflects differences in the composition of the Department of Finance Canada and PBO surveys.

Over the medium term (2011-2014), real GDP growth is expected to outpace estimates of the Canadian economy's potential growth, resulting in a narrowing of the output gap i.e., the percentage deviation of real GDP from potential GDP (Figure 3-2).

Figure 3-2

Output Gap

(Per cent of potential GDP)



Sources: Finance Canada (1975-2007); Office of the Parliamentary Budget Officer (2008-2014)

Based on Department of Finance Canada estimates of the output gap in 2007 and assuming potential GDP grows at 1.9 per cent annually (Box 3-1), the June 2009 PBO survey implies that the Canadian economy should reach a trough (relative to its potential) at -5.6 per cent in 2009 before returning to its potential capacity by 2014. On a cumulative basis, this represents a loss of $267 billion in unrealized output (adjusted for inflation), similar in percentage terms to the cumulative loss experienced in the 1990 recession.

Box 3-1: Potential GDP Growth

In its April 2009 *Monetary Policy Report* the Bank of Canada revised down its estimate of potential output growth from 2.4 per cent to 1.2 per cent in 2009, from 2.5 per cent to 1.5 per cent in 2010, and from 2.5 per cent to 1.9 per cent in 2011. According to the Bank, this revision stems from significant structural changes taking place in the Canadian economy as well as cyclical weakness which have lowered trend labour productivity growth. In its Budget 2009 analyses, PBO assumed potential growth of 2.4 per cent, in line with previous Bank of Canada estimates. Reflecting downward revisions to the Bank's estimates, and in line with current private sector estimates (e.g., TD Economics estimates Canada's potential growth at 2.0 per cent), PBO has assumed potential growth of 1.9 per cent annually, 0.5 percentage points lower than its previous assumption. PBO is currently constructing its own estimates of potential output and will present its research in future briefings on trends in the national economy.

GDP Inflation

GDP inflation in the final quarter of 2008 (-11.0 per cent) and the first quarter of 2009 (-6.5 per cent) was also much weaker than private sector forecasters expected at the time of Budget 2009 despite expectations that commodity prices would remain relatively weak through 2009 (e.g., Budget 2009 projected oil prices to average $50.2 U.S. dollars per barrel in 2009). However, private sector forecasters' annual forecasts of GDP inflation for 2009 in Budget 2009 do not appear to have fully reflected this weakness.

While oil prices have trended upward since Budget 2009 was tabled, the sharper-than-expected declines in the GDP deflator observed to date have prompted private sector forecasters to lower their GDP inflation forecasts substantially relative to Budget 2009. Based on the June 2009 PBO survey, private sector forecasters expect GDP inflation of -2.5 per cent in 2009 and 1.4 per cent in 2010 compared to -0.4 per cent and 1.7 per cent respectively in Budget 2009. Over the medium term 2011-2014, the outlook for GDP inflation based on the June 2009 PBO survey (2.1 per cent on average) remains in line with the Budget 2009 forecast (2.2 per cent on average).

Nominal GDP Growth

As a result of significant downward revisions to both real GDP growth and GDP inflation, the outlook for nominal GDP growth in 2009 and 2010 has been revised down substantially from the risk-adjusted planning assumptions on which Budget 2009 was based. Nominal GDP growth, based on the June 2009 PBO survey, is projected at -4.8 per cent in 2009 and 3.6 per cent in 2010, well below the risk-adjusted assumptions of -2.7 per cent and 4.3 per cent respectively in Budget 2009 (Table 3-2).[7] Over the medium term 2011-2014, the private sector outlook for nominal GDP growth based on the June PBO survey (5.6 per cent on average) is only marginally lower than the growth assumed in Budget 2009 (5.7 per cent on average).

Table 3-2

Nominal GDP Growth Outlook

(Per cent)

	2008	2009	2010	2011-2014
Budget 2009*	4.4	-2.7	4.3	5.7
June 2009 PBO survey	4.4	-4.8	3.6	5.6

* Risk-adjusted fiscal planning assumptions used in Budget 2009

Sources: Office of the Parliamentary Budget Officer; Finance Canada

Based on the June 2009 PBO survey, the level of nominal GDP – the broadest measure of the Government's tax base – is projected to be significantly lower than the risk-adjusted levels in Budget 2009: from $37 billion (or 2.4 per cent) lower in 2009 to $71 billion (or 3.5 per cent) lower in 2014 (Table C-1 in Annex C).

[7] In the January 2009 Department of Finance survey, private sector forecasters anticipated nominal GDP growth of 4.8 per cent in 2008, -1.2 per cent in 2009 and 4.2 per cent in 2010.

Interest Rates

Table 3-3 presents the private sector outlook for short and long-term interest rates. Reflecting the Bank of Canada's reduction in the overnight target rate to the effective lower bound of 0.25 per cent in April 2009 and its commitment, conditional on the inflation outlook, to maintain its policy rate at that level until the end of June 2010, private sector forecasters have revised their forecasts of short-term interest rates in 2009 and 2010 down from expectations at the time of Budget 2009. Based on the June 2009 PBO survey, forecasters expect short-term interest rates to average 0.4 per cent in 2009 and 1.0 per cent in 2010, 40 basis points and 70 basis points lower, respectively, relative to Budget 2009. The medium-term outlook for short-term rates in the June survey is slightly lower on average than forecast in Budget 2009, consistent with a more gradual increase in the Bank of Canada's policy rate.

Table 3-3

Interest Rate Outlook

(Per cent)

	2008	2009	2010	2011-2014
3-month Treasury Bill				
Budget 2009	2.3	0.8	1.7	4.0
June 2009 PBO survey	2.3	0.4	1.0	3.8
10-year Bond Rate				
Budget 2009	3.6	2.8	3.4	5.0
June 2009 PBO survey	3.6	3.1	3.5	4.7

Sources: Office of the Parliamentary Budget Officer; Finance Canada

Private sector forecasters expect long-term interest rates in 2009 and 2010 to be slightly higher (30 basis points and 10 basis points respectively) than anticipated at the time of Budget 2009, based on the June 2009 PBO survey. This increase likely reflects higher-than-expected rates on longer-term government securities recently observed in Canada as well as the U.S., consistent with an increased investor appetite for riskier assets, a re-anchoring of inflation expectations and improved economic growth prospects. However, private sector forecasters have lowered their medium-term outlooks for long-term rates, with 10-year Government of Canada benchmark rates averaging 4.7 per cent compared to 5.0 per cent in Budget 2009, consistent with a more gradual pace of monetary policy tightening.

Unemployment Rate

Private sector forecasters have revised up their outlook for the unemployment rate both in the near term and over the medium term[8]. Based on the June 2009 PBO survey, forecasters expect the unemployment rate to average 8.7 per cent in 2009, rising further to 9.4 per cent on average in 2010 – significantly higher than the 7.5 per cent and 7.7 per cent, respectively, anticipated at the time of Budget 2009 (Table 3-4). The upward revision likely reflects larger-than-expected increases in the unemployment rate since the budget was tabled in January 2009 as well as weaker near-term output growth, which would lower firms' demand for labour.

Table 3-4

Unemployment Rate Outlook

(Per cent)

	2008	2009	2010	2011-2014
Budget 2009	6.1	7.5	7.7	6.4
June 2009 PBO survey	6.2	8.7	9.4	7.7

Sources: Office of the Parliamentary Budget Officer; Finance Canada

Based on PBO assumptions, the June private sector outlook for the unemployment rate in 2009 implies that the level of employment by the end of 2009 would be about 320,000 jobs lower than expected at the time of the budget; by the end of 2010, the level of employment would be almost 350,000 jobs lower than anticipated at the time of Budget 2009.

[8] For further detail regarding the outlook for unemployment and employment levels, see the PBO Briefing Note *Canadian Labour Market Developments* by Stephen Tapp (July 2009).

The unemployment rate is then projected to decline gradually, averaging 7.7 per cent over 2011-2014, but remain approximately 1.3 percentage points higher, on average, than forecast in Budget 2009. The significant upward revision over the medium term represents a marked change in view compared to earlier private sector expectations. Based on the June 2009 PBO survey, forecasters anticipate a more gradual return to their previous long-run or 'structural' estimates of unemployment which have typically ranged around 6.0 to 6.5 per cent. This slower pace could reflect expectations of a more difficult restructuring in the Canadian economy, particularly in the automotive and forestry sectors.

4. Key Economic and Fiscal Assumptions

Key Economic Assumptions

While PBO's survey of private sector forecasters provides the macroeconomic outlook, producing detailed fiscal projections requires additional economic assumptions to generate forecasts of the individual tax bases. Indeed, the income and expenditure composition of nominal GDP plays an important role in the fiscal projection because different components of GDP are taxed at different rates.

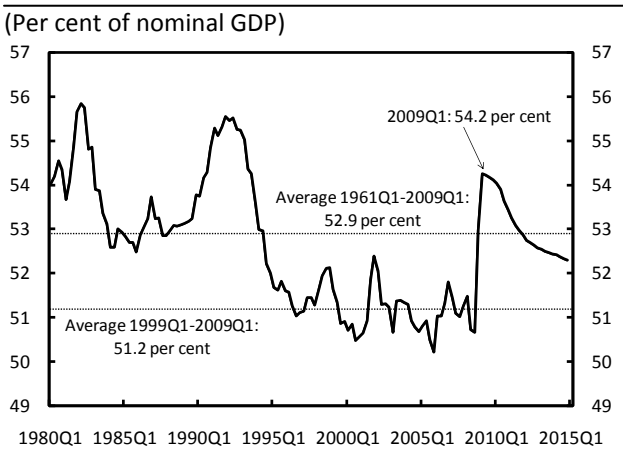
Previously, PBO maintained what it deemed to be relatively 'neutral' assumptions about the composition of nominal GDP by keeping income components relatively stable as a share of nominal GDP, near their current levels, over the projection horizon. Faced with the recent dramatic movements in some of these components and in an attempt to provide a more plausible fiscal outlook, PBO has revised some of its assumptions regarding the income composition of GDP.[9] Annex D provides additional detail regarding this change in assumptions.

Figures 4-1 and 4-2 present PBO assumptions about the share of wages, salaries and supplementary labour income in nominal GDP and the share of corporate profits (before taxes) in nominal GDP over the projection period 2009Q2 to 2014Q4.

After spiking to a 15-year high in the first quarter of 2009, PBO has assumed that the share of wages, salaries and supplementary labour income – which constitute the majority of the projected tax base for personal income taxes (PIT) – in nominal GDP gradually declines by about two percentage points toward the mid-point between its average over the past 10 years (51.2 per cent) and its average since 1961Q1.

Figure 4-1

Wages, Salaries and Supplementary Labour Income



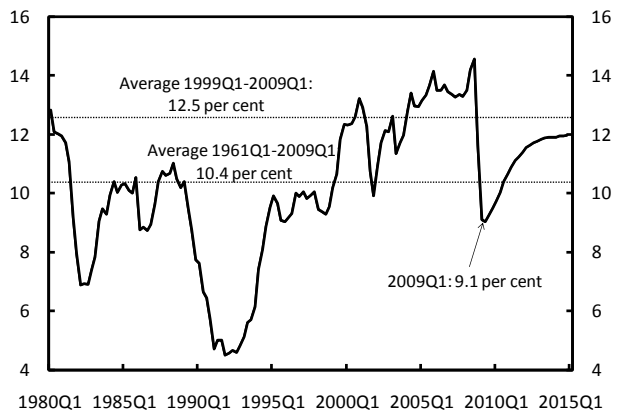
Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Corporate profits relative to nominal GDP plunged to a 13-year low in the first quarter of 2009. Mirroring the decline in the share of wages, PBO has assumed that the share of corporate profits in nominal GDP gradually rises by almost three percentage points to roughly the mid-point between its average over the past 10 years (12.5 per cent) and its average since 1961Q1.

[9] In order to improve its analysis and projections, PBO requested from the Department of Finance Canada the income and expenditure assumptions underlying nominal GDP (as well as the data to calculate effective tax rates) that were used to develop the status quo fiscal projections in Budget 2009. This information has been deemed a Cabinet confidence by the Privy Council Office and therefore has not been provided.

Figure 4-2

Corporate Profits Before Taxes



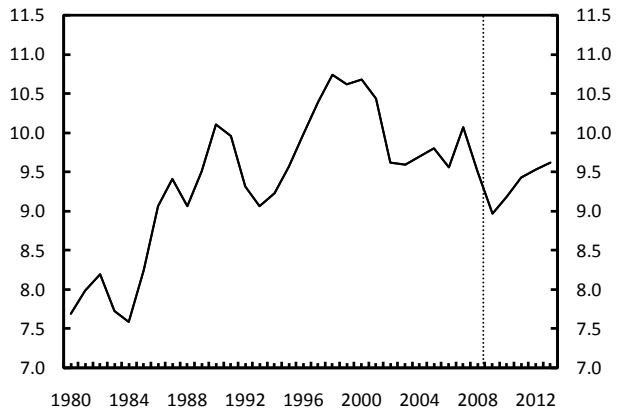
Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Key Fiscal Assumptions

PBO has also revised its effective personal income tax rate projection to adopt an effective rate profile that more closely resembles that which occurred during the last recession, and therefore, a more plausible profile for personal income tax revenues over the current projection period. Figure 4-3 shows historical and PBO's current personal income tax effective rate projection. A detailed discussion of this change is contained in Annex D.

Figure 4-3

Personal Income Tax Effective Rate



Sources: Office of the Parliamentary Budget Officer; Statistics Canada

A final important change in assumptions underlying fiscal projections contained in this report relates to the treatment of Employment Insurance (EI) premium rates. In PBO's previous reports, EI premium rates were assumed to remain constant at 2009 levels throughout the projection period. Given the large deficit projected to occur in the account over the next two years, PBO has revised its assumption to include the legislated maximum rate increase in EI premiums in each of the final three years of the projection period. This change results in EI premium revenues that are considerably higher by the final year of the projection period than would be the case if rates were held constant.

All told, the impact on the Government's budgetary balance of revisions to PBO assumptions regarding GDP income shares, effective PIT tax rate and EI premium rates is to reduce the budgetary balance by $9.3 billion in 2009-10 and by $1.5 billion in 2013-14. That is, had PBO not changed its assumptions, the Government's revenues would have been $9.3 billion higher in 2009-10 and $1.5 billion higher in 2013-14.

5. Fiscal Outlook 2008-09 to 2013-14

Based on the revised economic outlook, updated assumptions and announced post-budget measures, PBO is now projecting cumulative deficits of $155.9 billion over the 5-year projection period, with a peak deficit of $48.6 billion (3.2 per cent of GDP) in 2009-10, in line with the $50.2 billion deficit projected in the Government's June report (Table 5-1).

The deficit is expected to improve marginally in 2010-11, to $41.3 billion (2.6 per cent of GDP), before improving to $16.7 billion (0.9 per cent of GDP) in the final year of the projection period.

The lower deficit projections, compared to Budget 2009, average about $15 billion per year lower consistently across the projection period. In the near term, the larger deficit is largely a result of post-Budget 2009 spending measures, while the larger deficit figures in the latter years of the

projection period are largely a result of lower income tax revenue projections.

Table 5-1

Budgetary Revenues, Expenses and Balance

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Revenues	233.7	223.4	235.6	250.3	265.6	280.7
Expenses	237.2	272.0	277.0	277.9	287.2	297.4
Budgetary Balance	**-3.5**	**-48.6**	**-41.3**	**-27.6**	**-21.6**	**-16.7**
Federal Debt	461.1	509.7	551.0	578.7	600.3	617.0
Percent of GDP						
Budgetary Balance	-0.2	-3.2	-2.6	-1.7	-1.2	-0.9
Federal Debt	28.8	33.5	34.9	34.7	33.8	33.0
Budget 2009						
Budgetary Balance	-1.1	-33.7	-29.8	-13.0	-7.3	0.7

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Outlook for Budgetary Revenues

PBO's projection of budgetary revenues has been significantly reduced over the latter years of the projection period compared to both PBO's January 2009 report and Budget 2009 (Table 5-2). Total budgetary revenues are expected to be $2.6 billion lower in 2008-09 than reported in Budget 2009, with the difference growing to $13.6 billion lower in the final year of the projection period. The gap is largely due to significant differences in projections of personal and corporate income tax revenues. However, these differences are partially offset by much stronger projected growth in EI premium revenues due in part to a change in PBO assumptions regarding the raising of EI premium rates over the projection horizon.

Table 5-2

Budgetary Revenues

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**233.7**	**223.4**	**235.6**	**250.3**	**265.6**	**280.7**
Budget 2009	236.4	224.9	239.9	259.4	276.4	294.3
Difference	-2.6	-1.5	-4.3	-9.1	-10.8	-13.6

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Personal Income Tax Revenues

Table 5-3

Personal Income Tax Revenues

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**116.0**	**110.0**	**116.6**	**125.3**	**133.8**	**141.7**
Budget 2009	117.1	110.3	117.9	125.8	136.1	146.0
Difference	-1.0	-0.3	-1.3	-0.6	-2.2	-4.3

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Personal income tax revenues are expected to grow $2.9 billion to $116.0 billion in 2008-09 before falling to $110.0 billion in 2009-10 (Table 5-3). The expected decline in 2009-10 reflects weak personal income growth and the approximately $5.6 billion in personal income tax stimulus measures initiated in Budget 2009. Personal income tax revenues are then expected to grow at approximately 6.5 per cent per year on average over the remainder of the projection period as personal incomes rebound.

PBO's projection of personal income tax revenues has been revised down substantially since PBO's January report owing to a revision of effective rate estimates and the inclusion of Budget 2009 personal income tax measures. PBO's revision to effective rates was made to adopt an effective rate profile that more closely resembles that which occurred during the last recession, and therefore, a more plausible profile for personal income tax revenues over the current projection period. A complete discussion can be found in Annex D.

Corporate Income Tax Revenues

Table 5-4

Corporate Income Tax Revenues

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**30.0**	**23.7**	**25.9**	**27.2**	**27.6**	**29.7**
Budget 2009	31.8	26.4	30.8	35.4	36.2	39.5
Difference	-1.7	-2.7	-4.8	-8.2	-8.7	-9.8

Sources: Office of the Parliamentary Budget Officer, Finance Canada

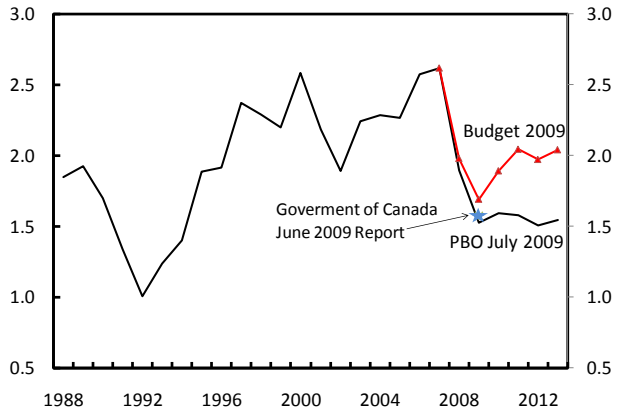
Corporate income tax revenues are expected to drop sharply in 2008-09 to $30.0 billion, followed by a second drop to $23.7 billion in 2009-10. Corporate income tax revenues are then expected to rebound, reaching $29.7 billion by 2013-14 as corporate profits recover. However, revenues are dampened by the implementation of the remaining planned reduction in statutory corporate income tax rates, which are scheduled to fall to 15 per cent by 2011-12, from 19.0 per cent in 2009-10.

As can be seen in Table 5-4, PBO is currently projecting corporate income tax revenues to remain well below levels forecast in Budget 2009, up to $9.8 billion lower by 2013-14. The difference is likely due to three factors: i) The weaker nominal GDP outlook; ii) PBO's likely lower corporate profits share of GDP assumption; and, iii) PBO's likely lower projected effective tax rates. Figure 5-1 below shows historical and PBO and Budget 2009 projected corporate income tax revenues as a share of GDP. As can be seen in the figure, PBO's projection of corporate income tax revenues remains fairly stable as a share of GDP, as increases in the corporate income share of GDP are offset by the implementation of reductions in statutory tax rates. Budget 2009 assumes a much stronger rebound due either to a much stronger expected rebound in the corporate profit share or, possibly, a more limited impact of statutory rate reductions.

Figure 5-1

Corporate Income Tax Revenues

(Per cent of nominal GDP)



Sources: Office of the Parliamentary Budget Officer, Finance Canada

Goods and Services Tax Revenues

Goods and Services Tax (GST) revenues are expected to decline to $25.3 billion in 2008-09 from $29.9 billion in 2007-08, based on year-to-date Fiscal Monitor results. PBO expects GST revenues to rebound in line with consumer spending beginning in 2009-10, rising to $26.7 billion. Revenues are expected to reach $31.9 billion by the final year of the projection period (Table 5-5).

Table 5-5

Goods and Services Tax Revenues

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**25.3**	**26.7**	**27.5**	**29.0**	**30.4**	**31.9**
Budget 2009	26.4	25.8	27.3	29.5	31.3	33.0
Difference	-1.1	0.9	0.2	-0.5	-0.9	-1.1

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Compared to Budget 2009, GST revenues are about $1.0 billion lower in the outer years of the projection period likely owing to expected weaker consumer spending.

Employment Insurance Premium Revenues

EI premium revenues are expected to remain relatively flat at close to $17 billion until 2010 before rising by about $3.0 billion per year over the final three years of the projection period (Table 5-6). The increase occurs due to a rebound in growth in labour force employment and wages as well as assumed $0.15 annual increases in EI premiums, the maximum allowable under current legislation, beginning in 2011. Budget 2009 announced that the Government would hold premium rates at 2008 levels in both 2009 and 2010.

Table 5-6

Employment Insurance Premium Revenues

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**16.7**	**16.8**	**17.7**	**20.3**	**23.3**	**26.3**
Budget 2009	16.6	16.8	17.3	18.4	19.7	20.4
Difference	0.1	0.0	0.4	1.9	3.6	5.9

Sources: Office of the Parliamentary Budget Officer, Finance Canada

PBO's change in assumption, from static rates throughout the projection period, was made to keep projections consistent with current legislation, in particular given the growing size of the deficit projected in the EI account over the next two years as a result of higher projected benefit payments. Even with the premium rate increase, and excluding the cost of Budget 2009 spending measures that will not be recouped through premium rate increases, the EI account is expected to be in deficit throughout the projection period.

The difference between the PBO and Budget 2009 projection ($5.9 billion) likely reflects differences in premium rate assumptions and/or wage and employment growth assumptions. PBO does not have access to the Government's projection assumptions.

All Other Revenues

Table 5-7

All Other Revenues

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**45.6**	**46.3**	**47.9**	**48.6**	**50.5**	**51.1**
Budget 2009	44.5	45.7	46.6	50.3	53.1	55.5
Difference	1.1	0.6	1.3	-1.8	-2.6	-4.4

Sources: Office of the Parliamentary Budget Officer, Finance Canada

The PBO projection remains considerably lower ($4.4 billion) than the Budget 2009 forecast in the final year of the projection period (Table 5-7). In the PBO projection, most elements of other revenues are growing with nominal GDP, or population plus inflation. PBO does not include the proposed $2 billion in expected gains from the sale of assets in its other revenue projection as details regarding the calculation of the expected gain have not been made available at this time.

Outlook for Budgetary Expenses

Program expenses are projected to be higher relative to Budget 2009 largely due to measures announced since Budget 2009 and higher than-previously expected EI benefit payments likely owing to higher expected unemployment (Table 5-8).

Table 5-8

Program Expenses

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**206.2**	**242.7**	**244.6**	**241.1**	**247.3**	**255.7**
Budget 2009	206.8	229.1	236.5	235.1	244.5	254.1
Difference	-0.5	13.6	8.1	6.0	2.8	1.7

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Direct Program Spending

The Budget 2009 direct program spending (DPS) forecast, adjusted to remove savings that have been recorded by the Government but have yet to be identified, forms PBO's underlying DPS projection. Table 5-9 highlights those items, including announced new measures, and changes in underlying assumptions by the Department of Finance Canada, which affect the DPS projection.

Table 5-9

Direct Program Spending – Post-budget Changes

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Underlying DPS	99.6	114.7	117.8	114.0	118.0	122.4
New Measures						
Auto industry loans		8.0				
CHT Top-up		0.5				
Ontario GST Harmonization			3.0	1.3		
Forestry Initiative			0.4	0.4	0.3	
June 2009 Report forecast changes	-1.2	0.6				
July 2009 PBO DPS	**98.4**	**123.7**	**121.2**	**115.7**	**118.3**	**122.4**

Sources: Office of the Parliamentary Budget Officer, Finance Canada

New measures include the $8.0 billion in aid to the auto industry and $0.5 billion in the Canada Health Transfer top-up payment announced in the Government's June 2009 report, as well as $4.3 billion in payments to the Government of Ontario to offset costs associated with the move to a harmonized value added tax and the $1.0 billion for the forestry sector, *the Pulp and Paper Green Transformation Program*, announced on June 17, 2009.[10] Changes to the underlying DPS forecast reported in the Government's June 2009 report also affect the DPS outlook. The result is a DPS outlook that is $11.1 billion higher in 2009-10 and $4.9 billion higher in 2010-11 than the Budget 2009 forecast (Table 5-10).

[10] The profile for the Pulp and Paper Green Transformation Program is assumed to be distributed roughly equally over the three years that firms are eligible to receive funds. The GST Harmonization profile is based on the Memoranda of Agreement Concerning a Canada-Ontario Comprehensive Integrated Tax Co-ordination Agreement.

Table 5-10

Direct Program Expenses

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**98.4**	**123.7**	**121.2**	**115.7**	**118.3**	**122.4**
Budget 2009	99.6	112.7	116.3	112.9	117.4	121.8
Difference	-1.2	11.1	4.9	2.7	0.9	0.6

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Major Transfers to Persons

Major transfers to persons, which include elderly benefits, EI benefit payments and children's benefits, are expected to be $2.2 billion higher in 2009-10, $3.1 billion in 2010-11 and $3.5 billion higher in 2011-12 (Table 5-11). The higher transfer payments are entirely due to higher expected EI benefit payments likely as a result of the higher expected number of unemployed over the projection period.

Table 5-11

Major Transfers to Persons

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**61.3**	**68.6**	**71.2**	**71.5**	**73.1**	**74.7**
Budget 2009	60.9	66.4	68.1	68.0	70.3	72.6
Difference	0.4	2.2	3.1	3.5	2.8	2.1

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Major Transfers to Other Levels of Government

Major transfers to other levels of government are projected to be $1.0 billion lower than the Budget 2009 projection by the end of the projection period owing in part to reduced expected Equalization payments resulting from lower nominal GDP growth, to which payments are indexed (Table 5-12).

Table 5-12

Major Transfers to Other Levels of Government

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**46.5**	**50.4**	**52.2**	**54.0**	**55.9**	**58.7**
Budget 2009	46.3	50.1	52.1	54.2	56.9	59.7
Difference	0.2	0.3	0.1	-0.3	-0.9	-1.0

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Public Debt Charges

Public debt charges are projected to be somewhat lower than Budget 2009 projections over the first three years of the projection period, likely owing to lower expected interest rates, but somewhat higher by 2013-14 ($2.1 billion), due in part to rising debt levels which begin to fuel higher servicing costs (Table 5-13).

Table 5-13

Public Debt Charges

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
PBO July 2009	**31.0**	**29.3**	**32.4**	**36.8**	**39.9**	**41.7**
Budget 2009	30.7	29.5	33.3	37.2	39.2	39.6
Difference	0.3	-0.2	-0.8	-0.4	0.7	2.1

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Structural Budget Balance Estimates

In the absence of publically available estimates, to help assess the projected budgetary position over the cycle, PBO has developed an approach to produce rough estimates of 'structural' or cyclically-adjusted budget balances. Table 5-14 presents updated PBO estimates of the Government's structural budget balance over 2008-09 to 2013-14 based on the revised assumption of 1.9 per cent growth in potential output and incorporating new fiscal measures.

In addition, given the substantial increase in projected public debt charges over the projection horizon, and to bring PBO's approach more into line with OECD practices, PBO has revised its assumption regarding public debt charges.[11] Rather than assuming public debt charges remain constant at their 2007-08 level over the projection horizon (i.e., in an attempt to identify cyclical and structural components of debt charges), PBO's current estimates are based on projected public debt charges (Table 5-13). This treatment is consistent with OECD's view that debt charges are not cyclical.[12] Lastly, PBO has maintained its assumption of 2.1 per cent GDP inflation annually, in line with the June 2009 PBO survey forecast average over 2011-2014.

Table 5-14

Structural and Cyclical Budget Balance Estimates

($ billions)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Budgetary balance	-3.5	-48.6	-41.3	-27.6	-21.6	-16.7
Structural balance	4.8	-0.1	-2.6	-7.3	-11.8	-11.9
Cyclical balance	-8.3	-48.5	-38.7	-20.3	-9.8	-4.8

Source: Office of the Parliamentary Budget Officer

Although there is a high degree of uncertainty surrounding estimates of potential output and structural budget balances, PBO's rough calculations suggest that the budget is not structurally balanced over the medium term. That said, the structural deficits projected in 2012-13 and 2013-14 are small relative to the size of the economy.[13] Indeed, they amount to less than 1 per

[11] This revised assumption is also consistent with Finance Canada's methodology. The approach used in Department of Finance Canada Working Paper 2003-06 by Stephen Murchison and Janine Robbins excludes debt charges from its cyclical adjustment procedure.

[12] Under PBO's previous assumption of constant public debt charges, estimated structural deficits would average $4.1 billion over 2009-10 to 2013-14.

[13] PBO estimates the output gap at -2.1 per cent in 2012, -0.8 per cent in 2013 and 0.2 per cent in 2014. As a check on the reasonableness of the estimates of the cyclical budget balance, PBO compared its estimates with those implied by Finance Canada's estimated sensitivity of the budget balance to the output gap. Using Finance Canada's estimated sensitivity would imply slightly smaller cyclical deficits and

cent of (potential) GDP annually. In comparison, Finance Canada estimates (on a National Accounts basis and therefore not strictly comparable) that over the periods 1981-1986 and 1990-1995, structural deficits averaged, respectively, 5.3 and 4.0 per cent of (potential) GDP.

It is important to note however that to a large extent PBO has simply adopted the Government's underlying program spending projection to represent structural expenditures. PBO estimates are therefore dependent on spending growth that averages less than 4 per cent in the last four years of the projection period, well below historical rates and the projected growth rate of the economy. Further, the projection of relatively small structural deficits is of course also conditional on the Government ensuring that none of the time-limited Budget 2009 stimulus measures become structural. Should some of these measures in fact become permanent, this would all else equal result in larger structural deficits.

6. Risks to the Fiscal Outlook

Risks to PBO projections of revenues, expenditures and budget balances relate primarily to risks to the economic outlook, the uncertain relationship between effective tax rates and tax bases and the ability of the Government to fully implement its spending plan.

Although the June 2009 PBO survey of private sector forecasters provides a reasonable macroeconomic basis for fiscal planning, there are both downside and upside risks to the private sector economic outlook. On the downside, the main risk is that real GDP growth could be weaker than private sector forecasters' current expectations reflecting the possibility that the global downturn, particularly given its synchronized and financial nature, could be deeper or more protracted.[14]

On the upside, the outlook for GDP inflation could exceed private sector forecasts in the June 2009 PBO survey reflecting uncertainties in mapping expected commodity price and terms of trade movements into GDP inflation forecasts. Emerging market economies could also recover faster than expected, pushing commodity prices higher and putting upward pressure on GDP inflation in Canada.

At present the economic outlook remains highly uncertain. PBO judges that the downside risk to real GDP growth and upside risk to GDP inflation imply that the risks surrounding the outlook for nominal GDP growth are roughly balanced. That said, considerable variation exists among private sector forecasters (Table 6-1).

Table 6-1

June 2009 PBO Survey

(per cent)

	2009	2010	2011	2012	2013	2014
Real GDP growth						
Average forecast	-2.4	2.2	3.5	3.8	3.3	2.9
High forecast	-1.7	3.0	3.8	4.5	3.8	3.1
	(0.7)	*(1.5)*	*(1.8)*	*(2.5)*	*(3.0)*	*(3.2)*
Low forecast	-2.7	1.3	3.0	3.2	3.1	2.7
	(-0.3)	*(-1.2)*	*(-1.7)*	*(-2.2)*	*(-2.4)*	*(-2.6)*
GDP inflation						
Average forecast	-2.5	1.4	2.1	2.5	2.0	1.9
High forecast	-1.2	2.5	2.5	3.1	2.2	1.9
	(1.3)	*(2.4)*	*(2.7)*	*(3.4)*	*(3.5)*	*(3.5)*
Low forecast	-4.8	-1.8	1.4	2.0	1.8	1.9
	(-2.4)	*(-5.5)*	*(-6.2)*	*(-6.6)*	*(-6.8)*	*(-6.8)*

Note: Numbers in parentheses represent the percentage deviation of the forecasted level of real GDP/GDP price under the high/low forecast from its corresponding forecasted level based on the average forecast.

Source: Office of the Parliamentary Budget Officer

therefore slightly larger structural deficits (approximately $0.4 billion higher over 2011-12 to 2013-14).

[14] Recent research by Clasesens et al, *What Happens During Recession, Crunches and Busts?* (2008, IMF WP/08/274) and Reinhart and Rogoff, *The Aftermath of Financial Crisis* (2008) both analyze the cross-country evidence and find evidence that financial, credit and housing related recessions tend to be longer and more severe. Chapter three of the IMF's April 2009 *World Economic Outlook* examines recessions and recoveries in advanced economies and finds that the current recession is likely to be unusually long and severe.

Moreover, while the risks to nominal GDP growth appear to be roughly balanced, the fiscal implications of these risks are not symmetric and therefore not offsetting. That is, lower real GDP growth could be offset by higher GDP inflation leaving nominal GDP growth unchanged; however, the Government's budgetary balance would be (negatively) impacted since shocks to real GDP growth typically have a larger fiscal impact than shocks to GDP inflation.

To illustrate potential fiscal implications of the economic risks identified above, and to gauge the sensitivity of the baseline PBO fiscal projections, PBO has estimated the impacts on the budgetary balance of economic shocks arising from: 1) a permanent 1 per cent reduction in the level of real GDP; and, 2) a permanent 1 per cent increase in the level of the GDP deflator, both relative to the projection based on the average private sector forecasts in the June 2009 PBO survey (Table 6-2).

Table 6-2

Estimated Impacts of Economic Shocks on the Budgetary Balance

($ billions)

	2009-10	2010-11	2011-12	2012-13	2013-14
1% reduction in real GDP	-3.1	-3.2	-3.4	-3.6	-3.9
1% increase in GDP price	+1.5	+1.5	+1.7	+1.9	+2.2

Source: Office of the Parliamentary Budget Officer

The impact of a 1 per cent reduction in real GDP is estimated under the assumption that employment is also permanently lower. EI rate premiums are assumed to remain at their levels in the baseline projection. The reduction in real GDP lowers taxable income while EI payments increase as the number of unemployed rises, which together lower the Government's budgetary balance by $3.1 billion in 2009-10. As the deterioration in the budget balance adds to the stock of debt, increased interest payments contribute to reducing the budgetary balance by $3.9 billion in 2013-14.

The impact of a 1 per cent increase in GDP price (i.e., the GDP deflator) is estimated assuming that the Consumer Price Index (CPI) is also permanently higher, in line with the shock to GDP price. EI rate premiums are again assumed to remain at their levels in the baseline projection. The increase in GDP price raises taxable income however EI payments rise slightly, reflecting increased benefits based on higher wages and salaries. Old Age Security payments also increase since they are indexed to movements in the CPI. The increase in revenue is only partly offset by higher expenditures resulting in an increase in the budgetary balance of $1.5 billion in 2009-10, which rises to $2.2 billion in 2013-14.

With respect to effective tax rates and revenue bases, there remains considerable uncertainty going forward. In the case of personal income taxes, PBO's current profile assumes effective rates recover at a pace somewhat faster than the last recession, when the rise in effective rates was aided somewhat by the non-indexation of brackets to inflation. For corporate income taxes, uncertainty regarding effective rates is further increased by corporations' ability to carry forward previous losses, which has the potential to delay the rebound in corporate income tax revenues even as the economy recovers.

A potential upside risk to the fiscal outlook in the near term is the ability of the Government to fully implement its stimulus package, in particular funds set aside for multi-jurisdictional infrastructure projects. Infrastructure Canada has historically lapsed large amounts of this type of planned spending, with one in every three planned infrastructure dollars going unspent in the past two fiscal years for which data is available.

On the whole, PBO judges that the risks to its fiscal outlook are balanced in the near term. However, taking into consideration the risks to the economic outlook, as well as the uncertainty surrounding effective rate assumptions, the balance of risks to its fiscal outlook over the medium term is tilted to the downside.

Annex A – Stock-to-Sales Ratio Analysis[15]

PBO analysis suggests that the economy-wide stock-to-sales ratio is distorted by changes in the terms of trade and that the goal of estimating future inventory investment may be better served by using the nominal stock-to-sales ratios on an individual industry basis.

This annex provides a description of the methodology used by Statistics Canada to calculate real and nominal stock-to-sales ratios, as well as an analysis of the factors that influence movements in these two series, before detailing the rationale behind PBO's preference for nominal stock-to-sales ratios for projection purposes.

Background

Inventories are held by businesses because they enable them to adjust smoothly to changes in sales and production. At the aggregate level, changes in inventory investment contribute significantly to real GDP growth and as a consequence is one of the measures that is tracked closely by economists. The stock-to-sales ratio is measure of how long it will take to deplete inventories at the current rate of sales and therefore can be used as a bridge between future sales and future inventory investment.[16]

Because economists are typically interested in estimating real business inventory investment, and ultimately real GDP growth, the stock-to-sales measure they most often use is the real economy-wide stock-to-sales ratio. Statistics Canada also frequently quotes this measure in its write up of the National Income and Expenditure Accounts noting in the 2009Q1 Canadian Economic Accounts Quarterly Review that "[d]espite inventories being drawn down, a larger drop in sales pushed the economy-wide stock-to-sales ratio up, equivalent to 71 days of sales compared to 68 days the previous quarter."[17]

Methodology

Data used to create industry-level stock-to-sales ratios are collected on a monthly basis using three different surveys. For the manufacturing industry, the Monthly Survey of Manufacturing asks respondents to provide the total amount of sales and the book value of inventories (in dollars). Similar questions are asked of the retail trade and wholesale trade industries using the Monthly Retail Trade Survey and the Monthly Wholesale Trade Survey. After any National Account adjustments, these survey values are used to produce quarterly nominal stock-to-sales ratios for the manufacturing, retail and wholesale industries.[18]

Quarterly economy-wide stock-to-sales ratios cannot be calculated by simply adding up the industry-level sales and industry level stocks since a large portion of industry sales include intermediate sales.[19] The sum of manufacturing, wholesale and retail inventories will also not equal economy-wide inventories because it excludes other inventories such as mining and natural gas.

Economy-wide stock-to-sales ratios are produced using National Income and Expenditure Accounts definitions of sales and inventories. Sales are the

[15] The authors would like to thank Giovanni Salvatore from Statistics Canada for his helpful comments.

[16] Economists typically take a historical average of the stock-to-sales ratio and assert that it is the equilibrium value. Then, based on a forecasted path for sales and the current level of the stock-to-sales ratio, they can estimate future inventory investment.

[17] Statistics Canada, "Canadian Economic Accounts Quarterly Review, first quarter 2009," Catalogue no. 13-010-X, page 12.

[18] These ratios have their own V-numbers in the CANSIM database: manufacturing (v41501087), wholesale (v41501084), retail (v41501086); and, economy-wide (v41501088).

[19] For example, a manufacturer of motor vehicles will sell its product to a wholesaler who will subsequently sell it to a retailer before it is sold to the final user. Adding up manufacturing, wholesale and retail sales for these motor vehicles, without subtracting the intermediate sales, would lead to double counting.

sum of personal expenditures on goods, government expenditures on goods, residential and business investment and exports of goods. The National Accounts definition of inventory investment (business sector only) is used to produce the nominal inventory stock figure, which is used together with nominal sales to construct economy-wide stock-to-sales ratios.

The industry-level surveys discussed above do not ask respondents to provide information on prices which are required to produce real stock-to-sales ratios. Instead, Statistics Canada uses price information from a variety of sources including import prices, industry product prices, and consumer prices to produce the real sales figures included in the each of the monthly releases.[20] Real industry-level stock-to-sales ratios are not produced by Statistics Canada, however, an economy-wide real stock-to-sales ratio series is produced (V-number 41501703) by deflating economy-wide sales and inventories using the National Income and Expenditure Accounts methodology.

Real versus nominal stock-to-sales ratios

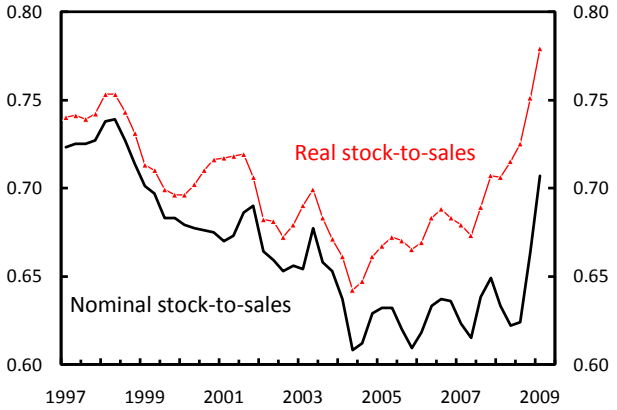
There is no theoretical reason to expect large differences between the prices used to deflate inventories and the prices used to deflate sales. Indeed a study conducted by Statistics Canada on trends in stock-to-sales ratios notes that, "with the focus on the ratio of stocks to sales, deflating both by prices to convert to constant dollars makes no difference."[21]

However, Figure A-1 shows that the economy-wide real stock-to-sales ratio and the economy-wide nominal stock-to-sales ratio have diverged since the beginning of 2004, when the real stock-to-sales ratio began trending upwards at a significantly faster pace. The fact that differences exist between these two series points to differences in the prices used for deflation.

Figure A-1

Real and Nominal Stock-to-sales Ratios

(Level)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: The stock-to-sales ratio is calculated as the stock of inventories divided by the level of sales.

Figure A-2 shows how the real stock-sales-ratio can be written as the product of the nominal stock-to-sales ratio and the ratio of the price of sales to the price of stocks (Equation 1).

Figure A-2

Real and Nominal Stock-to-sales Ratios

$$SSR_r = \left(\frac{Inv_r}{Sales_r}\right)$$

$$SSR_r = \left(\frac{Inv_n}{PInv}\right) \cdot \left(\frac{PSales}{Sales_n}\right)$$

$$SSR_r = \left(\frac{Inv_n}{Sales_n}\right) \cdot \left(\frac{PSales}{PInv}\right)$$

$$SSR_r = SSR_n \cdot \left(\frac{PSales}{PInv}\right) \qquad \text{(Eq. 1)}$$

Notes: SSR is stock-to-sales ratio. Subscripts denote real (r) and nominal (n). PSales is the implicit price of sales and PInv are the implicit prices of inventories.

As noted above, economy-wide sales are made up of similar components as GDP but exclude imports

[20] Real manufacturing shipments is V-number 4331190, real wholesale sales is V-number 21335739 and real retail sales is V-number 21645485.

[21] P. Cross and G. Salvatore, "The Changing Role of Inventories in the Business Cycle," feature article in the Canadian Economic Observer, November 2003, page 3.1.

and inventories (i.e. C, I, G, and X). For simplicity, the prices used to deflate the nominal sales series can be written as a function of the prices used to deflate the expenditure components (Equation 2).[22]

$$PSales = f(PC, PI, PG, PX) \qquad \text{(Equation 2)}$$

Deflating nominal inventory investment in the National Accounts is a much more complicated process that involves deflating book values as well as re-valuing[23] the book values to account for changes in prices that occurred between when the goods entered inventories and when they leave inventories.[24] The prices underlying the inventory deflation contain many of the same prices used to deflate sales with the exception of import prices, which influence the price of inventories but not sales, and export prices which influence the price of sales but not inventories (Equation 3).

$$PInv = f(PC, PI, PG, PM) \qquad \text{(Equation 3)}$$

Real stock-to-sales and terms of trade

After dividing the price of sales by the price of inventories (Equation 2 divided by Equation 3), the impacts of many of the prices common to both series would in fact cancel each other out, as expected, and what would remain is the price of exports divided by the price of imports – the terms of trade. Indeed, PBO analysis finds that the ratio of the prices of sales to price of inventories is highly influenced by the terms of trade.

A regression of the nominal stock-to-sales ratio on the real stock-to-sales ratio has an adjusted r-squared value of 0.76 suggesting that 76 percent of the variation in the nominal stock to sales ratio is explained by variations in the real stock to sales ratio (if the deflators were the same for the numerator and denominator, this value would be 1). Adding the terms of trade (contemporaneous and lagged) increases the adjusted r-squared of the regression to 0.97 suggesting nearly all of the variation remaining in the nominal stock-to-sales ratio can be explained by the terms of trade.[25]

Therefore, PBO analysis suggests that the economy-wide real stock to sales ratio can be distorted by the terms of trade and therefore caution should be taken when calculating historical averages for the stock-to-sales ratio and the near-term outlook for inventory investment. To avoid these potential problems, PBO uses the nominal stock-to-sales ratios of the individual industries when putting together its own near-term outlook for inventory investment.

[22] The actual process for deflating sales occurs at a much lower level of aggregation in each of the expenditure components.

[23] The revaluer deflator is a function of the turnover rate (i.e. the stock-to-sales ratio) of the individual inventory series. The higher the turnover rate the greater the number of months worth of prices are included in the revaluer deflator.

[24] Consult Chapter 10 of the Guide to the Income and Expenditure Accounts, Catalogue no. 13-017-X, for a detailed description on deflating inventory investment.

[25] Augmented Dickey-Fuller (ADF) tests confirmed that terms of trade and stock-to-sales ratios are I(1) variables. In addition, a cointegrating relationship was found between terms of trade and the ratio of the price of sales and the price of inventories ensuring that the r-squared estimates do not suffer from the spurious regression problem.

Annex B – Demand-Supply Analysis

PBO has recently begun putting together its own near-term outlook and within-quarter monitoring of the Canadian economy based on the expenditure side of the National Accounts. When producing its near-term outlook, PBO performs what it calls a demand-supply analysis to ensure that the outlook for each of the components of real GDP is also consistent with PBO's outlook for imports. Because GDP is by definition a measure of domestic production, when its measured using the expenditure approach imports must subtracted from final domestic demand, inventory investment and exports. This subtraction is required to account for the fact that each of these components has domestically produced and imported content.

In general, this demand-supply analysis is a reasonably reliable indicator of import growth. However, in the last two quarters, particularly the first quarter of 2009, imports were much weaker than the demand-supply analysis suggested given the profiles for final domestic demand, inventory investment and exports, and thus contributed more to real GDP growth.

Due to the size of the discrepancy in the first quarter of 2009 it seems particularly important to examine potential reasons why the two measures could deviate. Therefore, the remainder of the annex explains the demand-supply analysis, examines the historical properties and discusses potential reasons for the recent divergence.

Constructing the Demand-Supply Analysis (DSA)

PBO's demand-supply analysis is calculated as follows:

$$\text{DSA} = CTG_M - \sum_{i=1}^{5} \lambda_i * CTG_i$$

where:

i) λ_i are the respective import propensities (based on the 2003 input-output tables) of consumption, government, residential construction, business investment and exports;
ii) CTG_i is the respective contributions to real GDP growth of consumption, government, residential construction, business investment and exports;
iii) CTG_M is the contribution to real GDP growth of imports.

The demand-supply analysis is then compared to the contribution to growth of inventory investment since this is the only component not included in its construction.

Historical Properties of the Demand-Supply Analysis

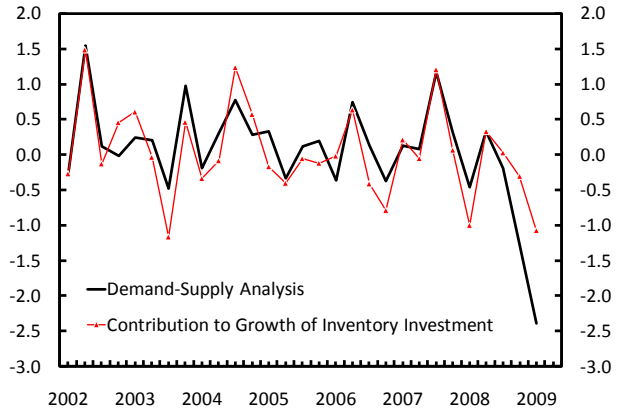
Figure B-1 illustrates that the demand-supply analysis tracks the contribution to growth of inventory investment very closely since 2002, but that they have diverged significantly in the last two quarters. Furthermore, Figure B-2 plots the residuals from the DSA which also highlights the magnitude of the recent divergence between the contribution to growth of imports and the DSA. [26]

[26] This analysis assumes a coefficient of 1 on the CTG of inventory investment.

Figure B-1

Demand-Supply Analysis

(Percentage points)



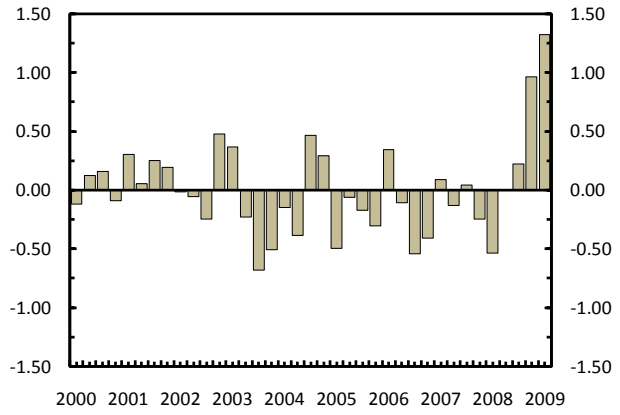
Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: Both series are expressed as contributions to growth at an annual rate.

Figure B-2

Residual of Demand-Supply Analysis

(Percentage points)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Notes: A positive value implies the contribution to growth from imports is greater than the balance between final domestic demand, exports and inventory investment would suggest.

Potential causes of the DSA residuals

The contribution to growth from imports and the DSA can diverge for at least three reasons. First, domestic production could be increasing at a faster rate than in the previous period and contributing more to domestic inventories. Second, the import propensities of the components of GDP can change over time. Third, large movements in relative prices may cause the two measures to diverge from one another over different periods of time.

In the current context the most likely explanation for the divergence between the actual data and the demand-supply analysis appears to be a relative price shock. The recent movements in the Canadian dollar have been exceptionally large by historical standards and have led to a significant increase in the implicit import deflator in 2008Q4 relative to the implicit deflators of the other components of GDP.

Annex C – Economic and Fiscal Outlook Summary Tables

Table C-1

June 2009 PBO survey versus Budget 2009 Economic Outlook

(Per cent)

	2008	2009	2010	2011	2012	2013	2014	2011-2014
Real GDP growth								
January 2009 budget	0.7	-0.8	2.4	-	-	-	-	3.0
June 2009 PBO survey	0.4	-2.4	2.2	3.5	3.8	3.3	2.9	3.4
GDP inflation								
January 2009 budget	4.1	-0.4	1.7	-	-	-	-	2.2
June 2009 PBO survey	3.9	-2.5	1.4	2.1	2.5	2.0	1.9	2.1
Nominal GDP growth								
Budget 2009 fiscal planning	4.4	-2.7	4.3	6.4	6.1	5.3	5.0	5.7
June 2009 PBO survey	4.4	-4.8	3.6	5.7	6.3	5.4	4.9	5.6
Nominal GDP level ($ billions)								
Budget 2009 fiscal planning	1,604	1,560	1,627	1,731	1,838	1,935	2,031	-
June 2009 PBO survey	1,600	1,523	1,578	1,669	1,774	1,870	1,960	-
3-month treasury bill rate								
January 2009 budget	2.3	0.8	1.7	-	-	-	-	4.0
June 2009 PBO survey	2.3	0.4	1.0	2.7	3.6	4.5	4.6	3.8
10-year government bond rate								
January 2009 budget	3.6	2.8	3.4	-	-	-	-	5.0
June 2009 PBO survey	3.6	3.1	3.5	3.8	4.3	5.1	5.4	4.7
Unemployment rate								
January 2009 budget	6.1	7.5	7.7	-	-	-	-	6.4
June 2009 PBO survey	6.2	8.7	9.4	8.9	8.1	7.2	6.8	7.7
Total CPI inflation								
January 2009 budget	2.4	0.7	1.9	-	-	-	-	2.0
June 2009 PBO survey	2.4	0.3	1.7	2.2	2.1	2.2	2.0	2.1

Sources: Office of the Parliamentary Budget Officer, Finance Canada

Table C-2

Federal Revenues, Expenses and Budgetary Balance - PBO July Assessment versus Budget 2009

$billions

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Budgetary Revenue							
Total Revenue							
July 2009 Report	**242.4**	**233.7**	**223.4**	**235.6**	**250.3**	**265.6**	**280.7**
Budget 2009	242.4	236.4	224.9	239.9	259.4	276.4	294.3
Difference	0.0	-2.6	-1.5	-4.3	-9.1	-10.8	-13.6
Personal Income Tax							
PBO July 2009 Report	113.1	116.0	110.0	116.6	125.3	133.8	141.7
Budget 2009	113.1	117.1	110.3	117.9	125.8	136.1	146.0
Difference	0.0	-1.0	-0.3	-1.3	-0.6	-2.2	-4.3
Corporate Income Tax							
PBO July 2009 Report	40.6	30.0	23.7	25.9	27.2	27.6	29.7
Budget 2009	40.6	31.8	26.4	30.8	35.4	36.2	39.5
Difference	0.0	-1.7	-2.7	-4.8	-8.2	-8.7	-9.8
Goods and Services Tax							
PBO July 2009 Report	29.9	25.3	26.7	27.5	29.0	30.4	31.9
Budget 2009	29.9	26.4	25.8	27.3	29.5	31.3	33.0
Difference	0.0	-1.1	0.9	0.2	-0.5	-0.9	-1.1
Employment Insurance Premium							
PBO July 2009 Report	16.6	16.7	16.8	17.7	20.3	23.3	26.3
Budget 2009	16.6	16.6	16.8	17.3	18.4	19.7	20.4
Difference	0.0	0.1	0.0	0.4	1.9	3.6	5.9
All Other Revenues							
PBO July 2009 Report	42.3	45.6	46.3	47.9	48.6	50.5	51.1
Budget 2009	42.3	44.5	45.7	46.6	50.3	53.1	55.5
Difference	0.0	1.1	0.6	1.3	-1.8	-2.6	-4.4
Budgetary Expenses							
Total Program Expenses							
July 2009 Report	199.5	206.2	242.7	244.6	241.1	247.3	255.7
Budget 2009	199.5	206.8	229.1	236.5	235.1	244.5	254.1
Difference	0.0	-0.5	13.6	8.1	6.0	2.8	1.7
Major Transfers to Persons							
PBO July 2009 Report	58.1	61.3	68.6	71.2	71.5	73.1	74.7
Budget 2009	58.1	60.9	66.4	68.1	68.0	70.3	72.6
Difference	0.0	0.4	2.2	3.1	3.5	2.8	2.1
Major Transfers to Other Levels of Government							
PBO July 2009 Report	46.2	46.5	50.4	52.2	54.0	55.9	58.7
Budget 2009	46.2	46.3	50.1	52.1	54.2	56.9	59.7
Difference	0.0	0.2	0.3	0.1	-0.3	-0.9	-1.0
Public Debt Charges							
PBO July 2009 Report	33.3	31.0	29.3	32.4	36.8	39.9	41.7
Budget 2009	33.3	30.7	29.5	33.3	37.2	39.2	39.6
Difference	0.0	0.3	-0.2	-0.8	-0.4	0.7	2.1
Budgetary Balance							
PBO July 2009 Report	**9.6**	**-3.5**	**-48.6**	**-41.3**	**-27.6**	**-21.6**	**-16.7**
Budget 2009	9.6	-1.1	-33.7	-29.8	-13.0	-7.3	0.7
Difference	0.0	-2.4	-14.9	-11.5	-14.7	-14.4	-17.4

Annex D – Key PBO Economic and Fiscal Assumptions

Changes to Key Assumptions

The income and expenditure composition of nominal GDP plays an important role in fiscal projections because different components of GDP are taxed at different rates. Moreover, their effective tax rates are not static over the projection horizon and fluctuate in response to policy changes, changes to the composition of taxable income and the timing of tax payments/rebates.

Given the recent dramatic movements in some of these components and in an attempt to provide a more plausible fiscal outlook, PBO has revised some of its assumptions regarding the income composition of GDP and its effective tax rates.

GDP Income Share Assumptions

Table D-1 presents PBO's assumptions regarding the income components of the nominal GDP projection over 2009 to 2014 (based on the June 2009 PBO survey). Previously, PBO maintained relatively 'neutral' assumptions about the composition of nominal GDP by keeping income components relatively stable as a share of nominal GDP, near their current levels, over the projection horizon.

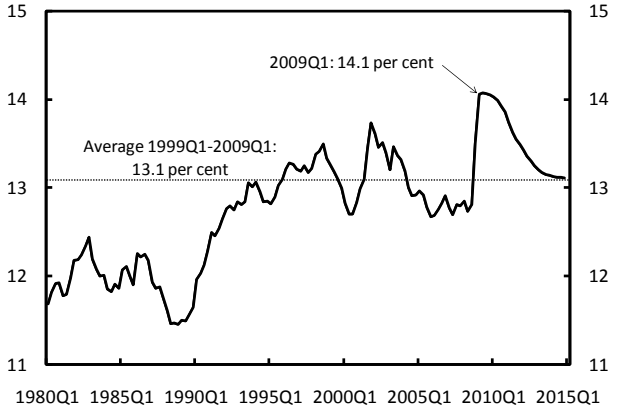
In PBO's current projection, key taxable income components (wages and salaries, corporation profits, interest and investment income as well as non-farm unincorporated business net income), relative to nominal GDP, are assumed to converge from their 2009Q1 levels to roughly the midpoint of their respective averages over the past 10 years (i.e., since 1999Q1) and since 1961Q1.

The share of capital consumption allowances (CCA), which stood at 14.1 per cent in 2009Q1, plays a key role in the fiscal projection by impacting the proportion of nominal GDP that is subject to tax. PBO has assumed that the share of CCA in nominal GDP converges to its average over the past 10 years (13.1 per cent), consistent with what appears to be a structural break in this component share occurring in the early 1990s.

Figure D-1

Capital Consumption Allowances

(Per cent of nominal GDP)



Sources: Office of the Parliamentary Budget Officer; Statistics Canada; Haver Analytics

Effective Personal Income Tax Rates

PBO's July projection of personal income tax (PIT) revenues has been significantly reduced in large part due to a change in assumed PIT effective rates over the projection period. In PBO's January 2009 report, PIT effective rates were assumed to maintain a consistent 1.2 elasticity, relative to personal income over the period, based in part on work done in 2002 at the Department of Finance.[27] While realistic in expansionary periods, this assumption is inconsistent with the behaviour of PIT effective rates over recessionary periods, in particular that of the early 1990s recession.

The projection used in this report is an average of those used in the January 2009 report and those that result from the analysis described below.

[27] Understanding Personal Income Tax Revenue Fluctuations, Phillip King and Ron McMorran, Department of Finance Working Paper 2002-07.

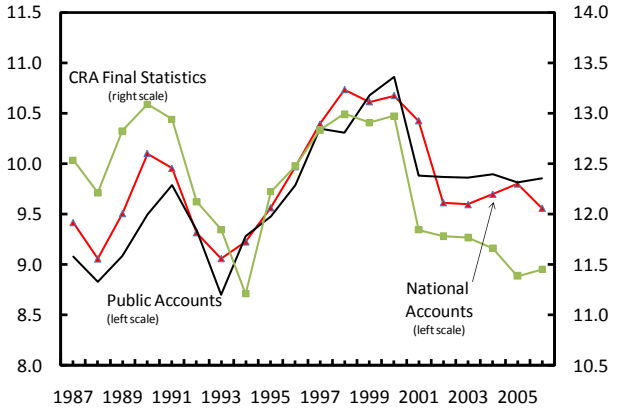
These 'averaged' effective rates can be considered relatively optimistic as they result in an effective rate profile that recovers faster than what occurred in the most recent recession, where rising effective rates were likely aided by the non-indexation of the tax system, whereas PIT brackets and basic personal credit amounts are now fully indexed to inflation.

There are three sources of data on PIT revenues: Statistics Canada's National Income and Expenditure Accounts; the Public Accounts of Canada; and Canada Revenue Agency's (CRA) Final Statistics. Each source provides estimates of PIT revenues under different accounting standards. Differences between estimates in these three datasets have not been fully reconciled. However, as can be seen in Figure D-2, estimates of PIT effective rates from the three sources are highly correlated and each shows a rapid decline in effective rates over the 1990-94 period.

Figure D-2

National Accounts, Public Accounts and CRA Final Statistics effective rates

(Per cent)



Sources: Statistics Canada; Public Accounts of Canada, CRA Final Statistics

CRA's Final Statistics dataset provides by far the most detailed information for undertaking analysis of the movement in PIT effective rates.[28] CRA's Final Statistics Table 2, for example, provides details of 22 components of assessed income, as well as detailing the impact of all major income tax deductions and non-refundable credits on taxable income and final taxes payable by income group. As a result, analysis of changes in effective rates, as well as base projections, was undertaken using this dataset. The results were then translated to National and Public Accounts projections using the following relationship:

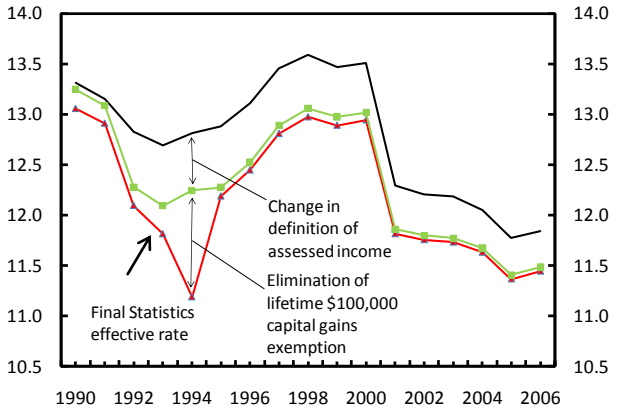
$$ER_{NA} = {}^{PIT_{NA}}/_{PIT_{CRA}} \times {}^{AI_{CRA}}/_{YP_{NA}} \times ER_{CRA}$$

Where: ER = Effective Rate; NA = National Accounts basis; CRA = Final Statistics basis; AI = Assessed Income; and, YP = Personal Income.

Figure D-3

Estimated impact of one-time changes on PIT Effective Rates

(Per cent)



Sources: CRA Final Statistics, Parliamentary Budget Office

PBO preliminary analysis indicates that of the nearly 2 percentage point decline in effective rates over the 1990-94 period, roughly three-quarters was due to two one-time factors: i) a change in the definition of assessed income to include tax-exempt income in 1992, which caused a permanent downward shift in effective rates; and ii) the removal of the $100,000 lifetime capital gains exemption after 1994, which triggered a surge in non-taxable capital gains redemptions in

[28] CRA makes their data set available online at: http://www.cra-arc.gc.ca/gncy/stts/fnl-eng.html. The website contains data for the five most recent years. CRA helpfully provided data on the past 20 years via email. This information is available from the PBO with permission from CRA.

1994, lowering effective rates temporarily (Figure D-3).

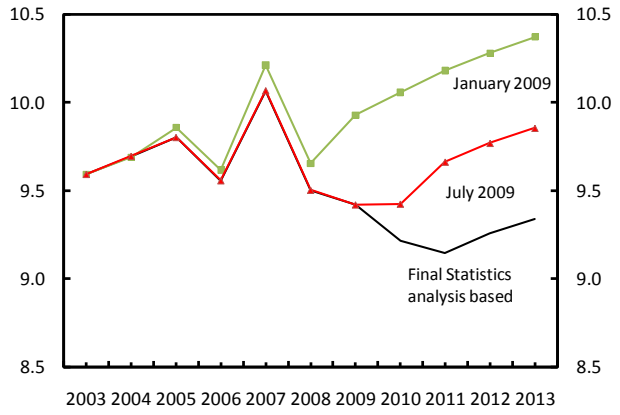
The remaining decline in the effective rate is thought to be attributable to the progressivity of the personal income tax system, which during recessions results in relatively fewer tax dollars being collected per dollar of income.

Effective rates (CRA Final Statistics based) over 2009-2014 are projected using the profile of effective rates over the 1990-95 period, after adjusting for the two unique issues discussed above. They are then translated into National Accounts effective rates using the relationship above and assuming that the ratio of National Accounts to CRA Final Statistics PIT revenues remains constant at past actual levels and that the ratio of Assessed Income to Personal Income continues its upward trending rate established over the past decade.[29]

Figure D-4

PIT Effective Rate Projections

(Per cent)



Sources: Statistics Canada; Parliamentary Budget Office

The resulting National Accounts effective rate projection was then averaged with the PBO's previous effective rate projection. The decision to adopt only partially the new effective rate profile was made as more work in this area needs to be completed before full adoption can be reasonably undertaken.

Figure D-4 shows the effective rate projections resulting from the analysis described above and those used for the January and July report.[30]

[29] The apparent upward trend in assessed verses personal income is not well understood at this time. However, the assumed continuation results in the most optimistic of National Accounts effective rate projections. Further work is required in this area.

[30] The difference over the historical period is due to the National Accounts data revision.

Table D-1

PBO Assumptions regarding Nominal GDP Income Shares

(Per cent of nominal GDP)	actual						
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Wages, salaries and supplementary labour income	51.4	54.2	53.7	53.0	52.7	52.5	52.3
Corporation profits before taxes	13.5	9.2	10.2	11.2	11.7	11.9	11.9
Government business enterprise profits before taxes	1.0	0.9	1.0	1.0	1.0	1.0	1.0
Interest and miscellaneous investment income	5.1	4.7	4.5	4.6	4.8	4.9	4.9
Accrued net income of farm operators from farm production	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Net income of non-farm unincorporated business, including rent	5.8	6.3	6.3	6.3	6.3	6.3	6.3
Inventory valuation adjustment	-0.4	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
Taxes less subsidies on factors of production and products	10.3	10.5	10.3	10.3	10.2	10.3	10.4
Capital consumption allowances	13.0	14.1	13.9	13.6	13.3	13.2	13.1
Statistical discrepancy	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Office of the Parliamentary Budget Officer