



# Labour Market Assessment 2016



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

CANADA

Ottawa, Canada  
27 October 2016  
[www.pbo-dpb.gc.ca](http://www.pbo-dpb.gc.ca)

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# Executive Summary

This report provides parliamentarians with an assessment of the state of the Canadian labour market. It examines national labour market indicators relative to their trend estimates, that is, the level that would be observed if cyclical fluctuations were removed. PBO also analyses how provincial, industrial and disaggregated indicators have evolved and how these contribute to the national picture.

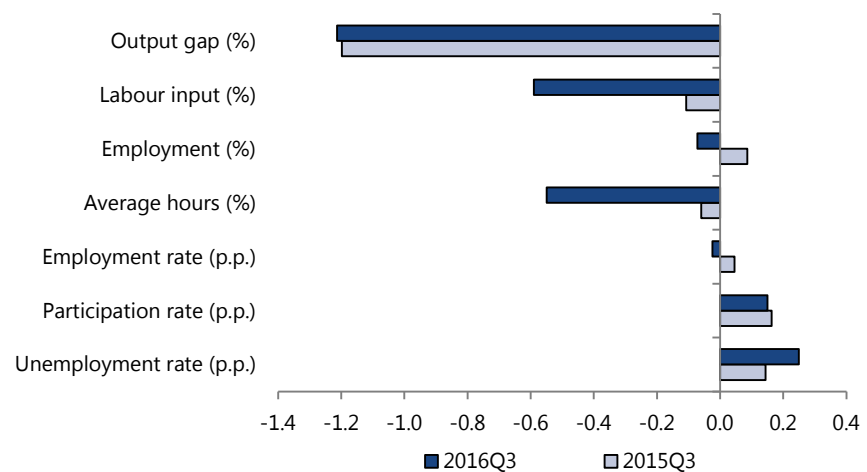
The Canadian economy created 96,000 (net) jobs from Q3 2015 to Q3 2016, which is half the average annual gain of 192,000 over the previous five years. Job gains from Q3 2015 to Q3 2016 were entirely part-time and mostly in the private sector. Full-time and public sector employment contracted.

As observed in the 2015 Labour Market Assessment, labour market indicators continued to deteriorate in the major oil-producing provinces following the steep decline in oil prices that began in Q3 2014. Between Q3 2015 and Q3 2016, employment gains totalling 155,000 in British Columbia, Ontario and Quebec were offset by declines in other provinces.

Overall, PBO finds that most labour market indicators remain fairly close to their trend levels, except for average hours worked which is below trend. This suggests that, at the national level, the labour market is currently operating below its sustainable capacity as the demographic transition takes hold.

**Summary Figure 1**

**Labour market indicators relative to trend, 2016Q3 vs. 2015Q3**



Sources: Parliamentary Budget Officer and Statistics Canada.

Labour input (that is, total hours worked in the economy) was 0.6 per cent or 105,000 full-time equivalent employees below its trend in the third quarter of 2016. This reflects weakness in labour intensity as measured by average hours worked.

The employment rate (that is, employment relative to the source population aged 15 and over) was essentially at trend. The labour force participation and unemployment rates were slightly higher than their respective trends.

In terms of overall performance, PBO estimates that the Canadian economy was operating 1.2 per cent below its potential in the third quarter of 2016.<sup>1</sup> This implies that the below-trend in hours worked, reflecting the rise in part-time employment, was responsible for roughly half of the economy's underperformance relative to potential GDP.

Over the long term, PBO projects trend employment and participation rates will decline over the next 25 years as the population ages. These declines will be most acute over the next 15 years.

Even though most indicators were close to trend at the national level, some disparities existed across provinces, industries and age groups. Notably, employment rates were below trend for workers aged 15 to 24 and above trend for workers aged 40 to 64. Moreover, average hours worked was below trend for prime-age males and above trend for younger and older females.

PBO does not estimate trend levels for provincial and industry indicators. However, relative to Q3 2015, actual indicators have improved in British Columbia, Ontario and Quebec. Service sector employment has experienced the strongest job growth.

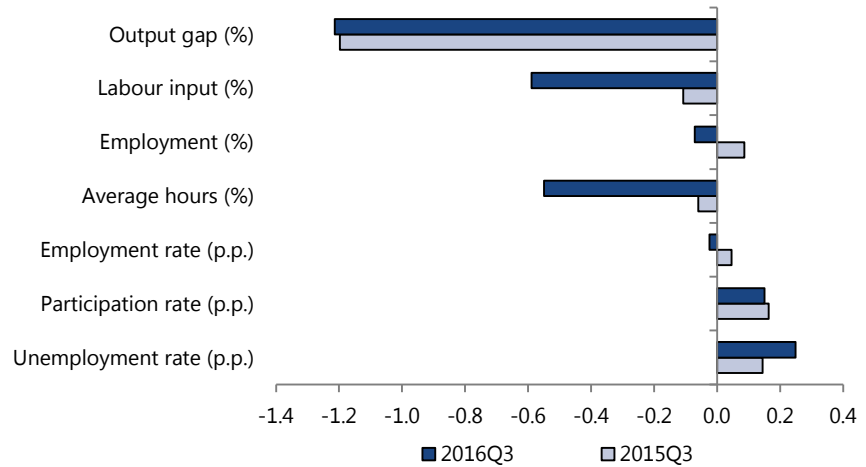
By contrast, indicators have worsened in the Prairie Provinces, notably Alberta, and in oil and gas extraction industries. Employment in mining, oil and gas extraction fell by 39,000 from Q3 2015 to Q3 2016. Some of this impact could prove temporary owing to the wildfires in Fort McMurray; however, the weaknesses in this region and sector predate Q2 2016.

Despite the depreciation in the Canadian dollar, manufacturing employment fell by 20,000 from Q3 2015 to Q3 2016. This marked a reversal from gains that averaged 1,000 each year between 2011 and 2015. Construction and real estate contributed 24,000 jobs from Q3 2015 to Q3 2016, in line with its average between 2011 and 2015.

# 1. Trend Analysis

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**Figure 1-1 Labour market indicators relative to trend, 2016Q3 vs. 2015Q3**



Sources: Parliamentary Budget Officer and Statistics Canada.

At the national level, most labour market indicators in the third quarter of 2016 were close to their respective trend levels. PBO's methodology for constructing trend estimates is detailed in its 2014 Labour Market Assessment.<sup>2</sup> Data in this report are current to October 7, 2016.

In Q3 2016, the unemployment rate was 0.25 percentage points above trend, reflecting in part above-trend labour force participation of 0.15 percentage points. Both indicators remained relatively close to Q3 2015 levels.

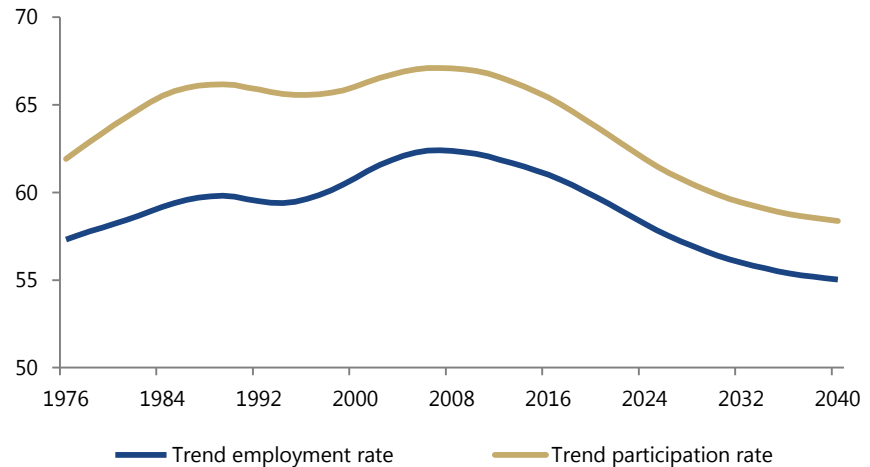
Average hours worked declined from 0.1 percentage points below trend in Q3 2015 to 0.6 percentage points below trend as of Q3 2016. This is consistent with the increase in part-time employment and decline in full-time employment during this period.

PBO estimates that labour's input into the economy was 0.6 per cent, or 105,000 full-time equivalent employees, below its trend level in Q3 2016. Labour's input into the economy, or total hours worked, combines the employment rate, labour force source population and average hours worked. Its underperformance reflects weaker average hours worked relative to trend.

In addition, PBO estimates that GDP was 1.2 per cent below its potential as of Q3 2016, roughly unchanged from a year earlier. Weak labour productivity (that is, real GDP per hour worked) and hours worked were each responsible for about half of the output gap.

**Figure 1-2 PBO labour trend projections 1976 to 2040**

*Per cent of population age 15 and over*



Sources: Parliamentary Budget Officer and Statistics Canada.

PBO projects that the trend employment and participation rates will decline over the next 25 years as the population ages (Figure 1-2). These declines will be most acute within the next 15 years.

The trend participation rate and employment rate peaked in 2007 at 67.1 per cent and 62.4 per cent respectively (Figure 1-2). As the baby-boom generation transitions into the retirement labour market, the trend employment rate is projected to decline from 61 per cent in Q3 2016 to 55 per cent in 2040. The labour force participation rate is projected to decline from 65.5 per cent in Q3 2016 to 58 per cent in 2040.

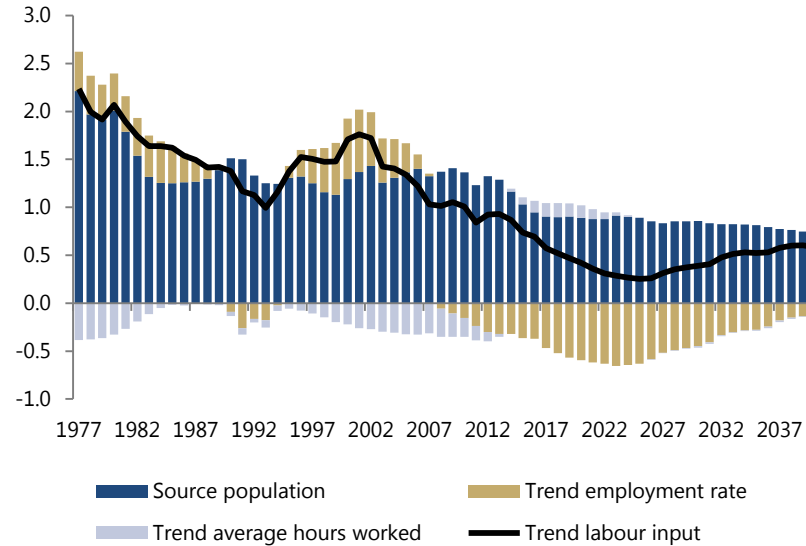
Based on the long-term trends in employment and participation rates, the unemployment rate is projected to decline gradually from 7.0 per cent in 2016 to 5.7 per cent by 2040. This decline reflects a more pronounced drop in male labour force participation relative to male employment rates over the long term.

PBO projects that the Canadian economy will create about 8,000 (net) jobs per month on average over 2016 to 2019 as population ageing is offset somewhat by cyclical improvements in the economy. We then project job gains to slow to less than 4,000 per month from 2020 to 2025 as boomer cohorts continue to transition out of the labour force.



**Figure 1-3 Annual growth in trend labour input**

*Annual percentage change in trend labour input, measured in hours worked*



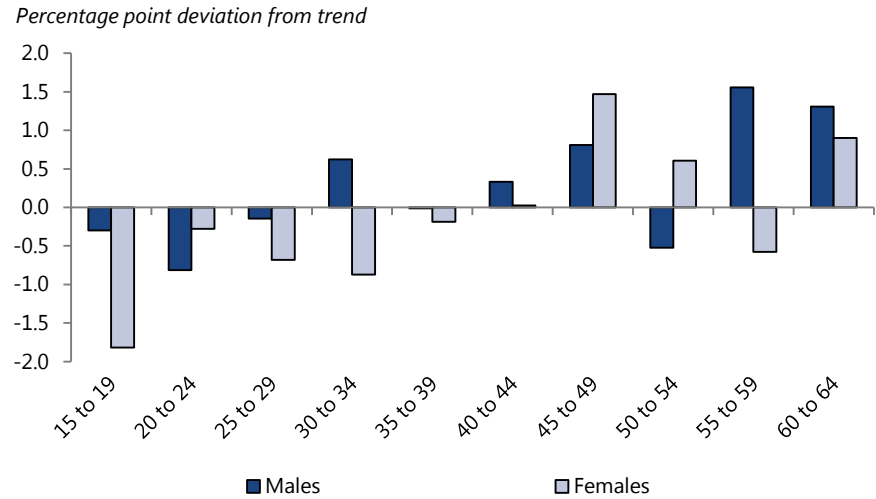
Sources: Parliamentary Budget Officer and Statistics Canada.

Figure 1-3 shows PBO estimates for trend labour input in Canada and its composition. This is measured by the total hours worked in the economy when the employment rate and average hours worked are assumed to be at their respective trend levels. Trend labour input combines with trend labour productivity to determine potential GDP, the sustainable productive capacity of the Canadian economy at a given point in time.

PBO projects that labour's contribution to annual growth in potential GDP will decline from 0.8 percentage points in 2016 to 0.25 percentage points in 2025 (Figure 1-3). This decrease in trend labour input growth will be due to the relatively steep decline in the employment rate over this period (Figure 1-3). However, the trend in average hours is expected to increase from 34.1 hours in 2016 to 34.3 in 2022 and remain relatively stable through to 2040.

The pick-up in trend labour input growth from 0.25 percentage points in 2025 to 0.6 percentage points in 2040 will result from a levelling off in the trend employment rate's downward trajectory (as the impact of the baby boomer cohort wanes) (Figure 1-3). At the same time, growth in the working-age population is expected to remain relatively stable. As boomer cohort effects dissipate over the long term, growth in trend labour input will be driven primarily by growth in the working-age population.

**Figure 1-4 Employment rate relative to trend by age group and sex in 2015**



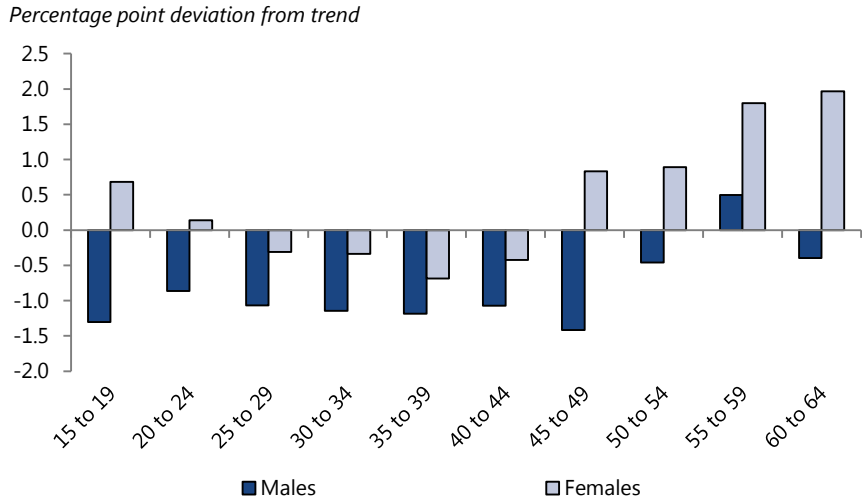
Sources: Parliamentary Budget Officer and Statistics Canada.

Figure 1-4 shows PBO estimates of employment rates relative to trend by age group and sex in 2015. Rates are below trend for younger workers and generally above trend for workers over the age of 45.

For males of all age groups, the employment rates fell sharply from 2007 to 2009. While employment rates for males aged 30 and over recovered to above-trend levels following the 2008 financial crisis, rates for males under 30 have remained below trend since 2008.

For females, employment rates also dropped sharply during the 2008 financial crisis. However, employment rates for females under the age of 30 continued to fall in 2010 and 2011, and remained below trend levels as of 2015. For females aged 45 and older, employment rates have generally remained above trend since 2012.

**Figure 1-5 Average weekly hours worked relative to trend by age group and sex in 2015**



Sources: Parliamentary Budget Officer and Statistics Canada.

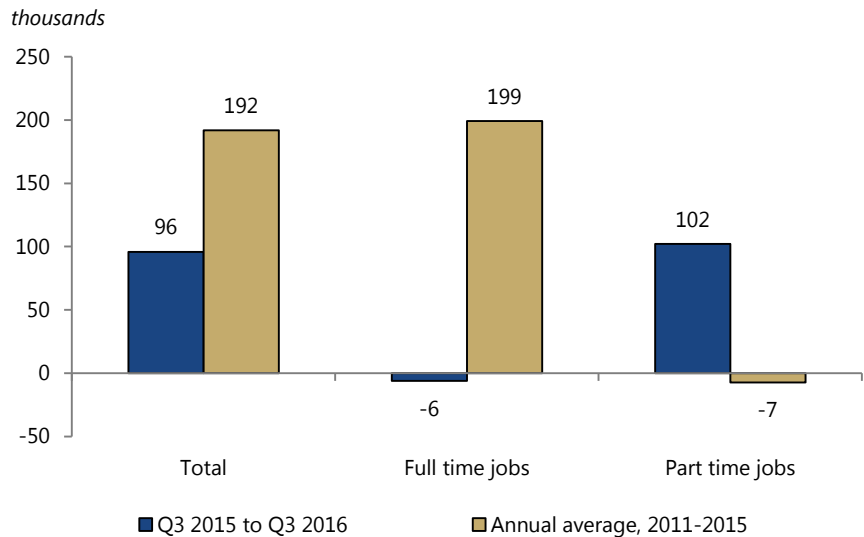
Figure 1-5 shows average weekly hours worked relative to trend by age group and sex in 2015. Average hours worked were below trend levels for males under 55 and for prime-age females. Average weekly hours were estimated to be 0.2 percentage points below trend at the national level in 2015; this level has weakened to 0.6 percentage points below trend as of Q3 2016 (Figure 1-1).

Like employment rates, average hours worked by males fell sharply relative to trend from 2007 to 2009; by 2012, they had recovered to close to trend levels. Average hours worked have since fallen back below trend. This decline started in 2014 and continued in 2015, coinciding with the oil price shock to the Canadian economy beginning in Q2 2014.

For females, average hours worked fell less sharply relative to trend from 2007 to 2009 and recovered to above trend levels for prime-age and older females by 2012. Since 2012, average hours worked have fallen back below trend for females under 45, but they remain above trend for females over 45 as shown in Figure 1-5.

## 2. National Indicators

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**Figure 2-1 Full-time and part time employment gains**

Sources: Parliamentary Budget Officer and Statistics Canada.

The majority of data presented or used for analysis in this report came from Statistics Canada's Labour Force Survey (LFS) and Canadian System of National Accounts. In the case of the LFS, PBO obtains the monthly microfiles to conduct detailed analysis.

The Canadian economy created 96,000 (net) jobs from Q3 2015 to Q3 2016, an increase of 0.5 per cent. This increase was smaller than the average annual gain of 192,000 during the previous five years (Figure 2-1).

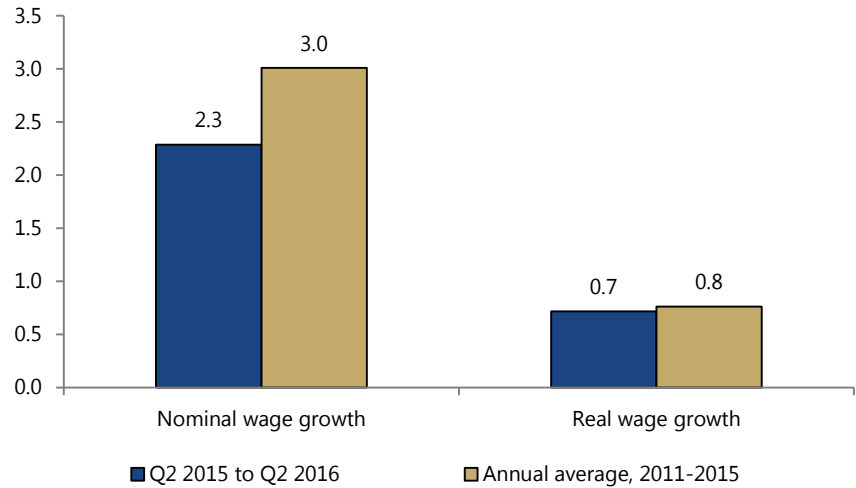
Part-time employment increased by 102,000 between Q3 2015 and Q3 2016, accounting for all employment gains; full-time employment fell by 6,000. This was a reversal of average employment gains from 2011 to 2015, when full-time employment accounted for all the growth (Figure 2-1).

The increase in part-time employment is consistent with the decline in average hours worked relative to trend as shown in Figure 1-1.

Between Q3 and Q3, 102,000 (net) jobs were created in the private sector, and 1,800 (net) in self-employment. These were offset by a decline of 7,900 (net) jobs in the public sector. By contrast, the public sector and self-employment represented 18 per cent and 9 per cent respectively, on average, of annual employment gains from 2011 to 2015.

**Figure 2-2 Average nominal and real hourly wages**

*Per cent annual change*



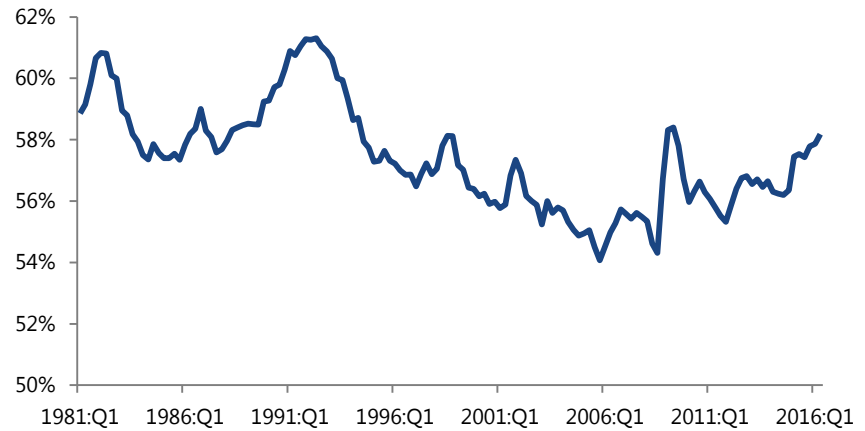
Sources: Parliamentary Budget Officer and Statistics Canada.

Note: The total CPI index is used to deflate the nominal wage.

Nominal hourly wages rose 2.3 per cent from Q2 2015 to Q2 2016, slower than the average of 3.0 per cent from 2011 to 2015 (Figure 2-2). Real wages rose 0.7 per cent from Q2 2015 to Q2 2016, a bit below the annual average gain of 0.8 per cent between 2011 and 2015 (Figure 2-2).

**Figure 2-3 Labour income as share of GDP**

*Labour income as a share of gross domestic product*



Sources: Parliamentary Budget Officer and Statistics Canada.

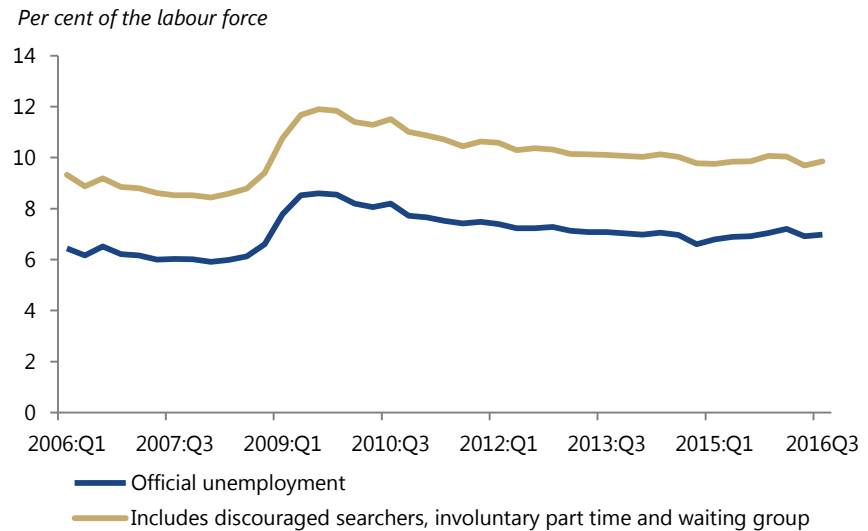
Note: PBO defines labour income as compensation of employees plus two thirds of net mixed income.

Labour's share of total income rose from 57.5 per cent of GDP in Q2 2015 to 58.2 per cent in Q2 2016 (Figure 2-3).

This increase mirrors a cyclical decline in the income share of corporate profits, a result in part of the weakness in the oil sector and more recently the impact of the wildfires in Fort McMurray in Q2 2016.

Moreover, compensation per hour worked rose 1.3 per cent from Q2 2015 to Q2 2016; at the same time, labour productivity rose 0.4 per cent and the economy-wide price level (that is, the GDP deflator) remained unchanged.

Figure 2-4 Unemployment rates



Sources: Parliamentary Budget Officer and Statistics Canada.

Note: PBO seasonally adjusted the R8 series using the Census X12 approach.

The R8 measure is Statistics Canada's most comprehensive measure of underutilized labour (Figure 2-4). This rate combines the unemployed with discouraged searchers, those waiting for recall or replies, long-term future starts, and a portion of involuntary part-timers. This indicator shows that there is more slack in the Canadian economy than is measured by the official unemployment rate.<sup>3</sup>

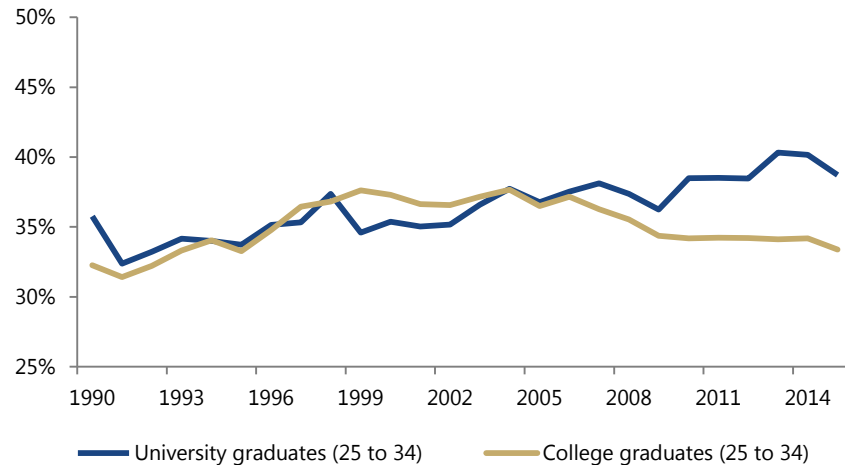
The R8 measure has declined over the recovery, but remains above its pre-recession level. Its movement tracks the official unemployment rate closely. The gap between the two series has been relatively constant both before and after the recession.

The R8 measure was essentially flat from Q3 2015 to Q3 2016, as was the official unemployment rate. This suggests that the degree of slack in the labour market that is not captured by the headline unemployment rate was roughly constant since Q3 2015.



**Figure 2-5** Estimates of educational overqualification for recent graduates

*Per cent of recent graduates*



Sources: Parliamentary Budget Officer and Statistics Canada.

Note: PBO considers a worker to be overqualified if their educational credentials exceed the educational requirements of their occupation. For example, a person with a university degree working a job that typically requires a high school diploma.

In the 2015 Labour Market Assessment, PBO examined how the educational credentials of younger university graduates match their occupational requirements.<sup>4</sup>

Between 1991 and 2014, the proportion of recent university graduates aged 25 to 34 who were overqualified based on their educational credentials increased from about 32 per cent to 40 per cent. In contrast, the rate of educational overqualification for recent college graduates declined from 37 per cent in 2006 to 34 per cent in 2014, roughly equivalent to mid-1990s levels (Figure 2-5).

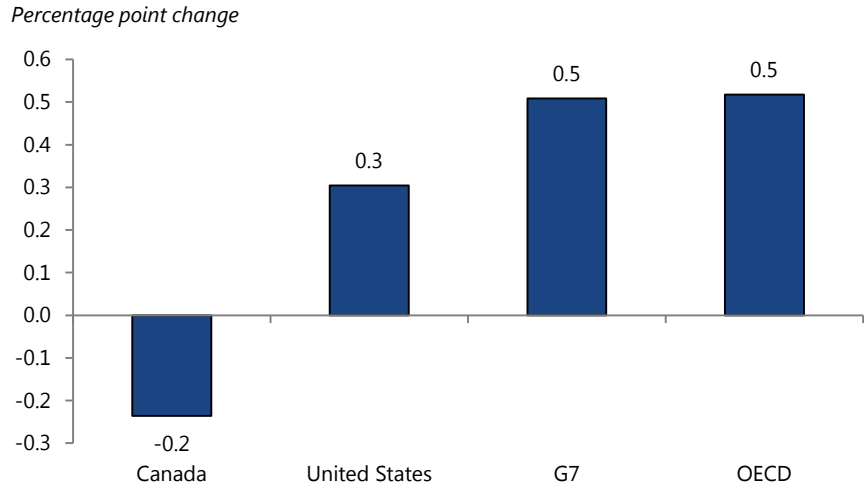
In 2015, the rate of overqualification fell by 1.4 percentage points to 39 per cent for recent university graduates and by 0.8 percentage points to 33 per cent for recent college graduates.

For recent university graduates, the unemployment rate fell from 5.3 per cent in 2014 to 4.8 per cent in 2015, while for recent college graduates, the rate slipped from 6.2 per cent to 6.1 per cent.

## 3. International Comparison

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**Figure 3-1 International comparison of change in employment rates from 2015Q2 to 2016Q2**



Source: OECD, Parliamentary Budget Office

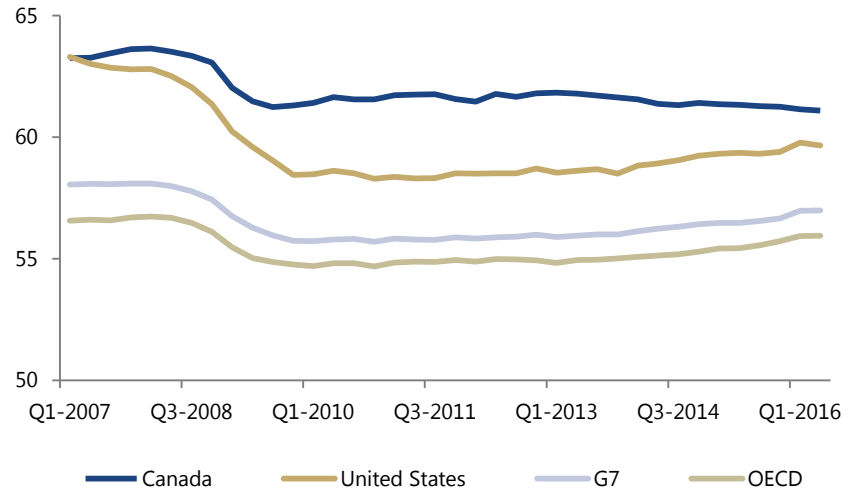
Note: PBO removes Canada from G7 and OECD averages

As it did in past reports, PBO compares the performance of Canada's labour market with other advanced economies. PBO uses data compiled by the Organization for Economic Cooperation and Development (OECD) that have been submitted by national statistical agencies.

Between Q2 2015 and Q2 2016, Canada's employment rate fell by 0.2 percentage points. In contrast, employment rates rose in the United States, G7 and the OECD (Figure 3-1).

**Figure 3-2 International comparison of employment rates**

*Per cent of population 15 years and older*



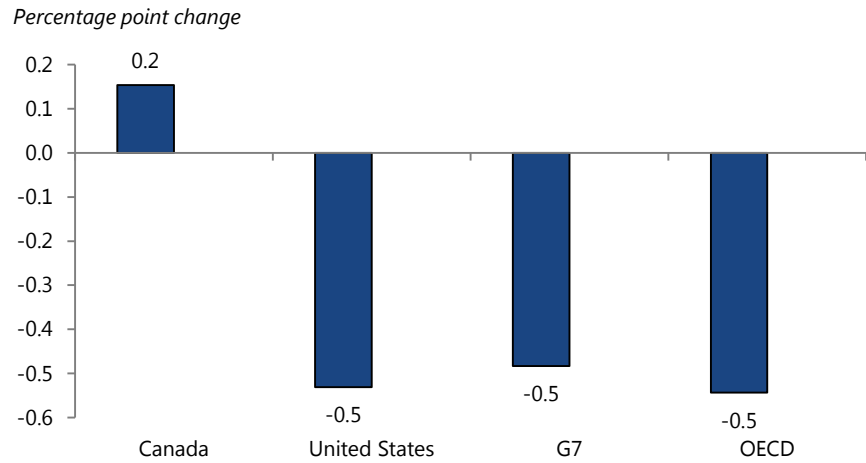
Source: OECD, Parliamentary Budget Office

Note: PBO removes Canada from G7 and OECD averages

Despite the recent decline, Canada's employment rate of 61.1 per cent in Q2 2016 remained above other international benchmarks. (Figure 3-2)

Canada's employment rate remains persistently higher than averages for the United States, G7 and OECD. This is consistent with higher levels of labour force participation, in particular by women. However, this gap has gradually narrowed during the recovery from the global financial crisis.

**Figure 3-3 International comparison of change in unemployment rates, Q2 2015 to Q2 2016**



Source: OECD, Parliamentary Budget Office

Note: PBO removes Canada from G7 and OECD averages

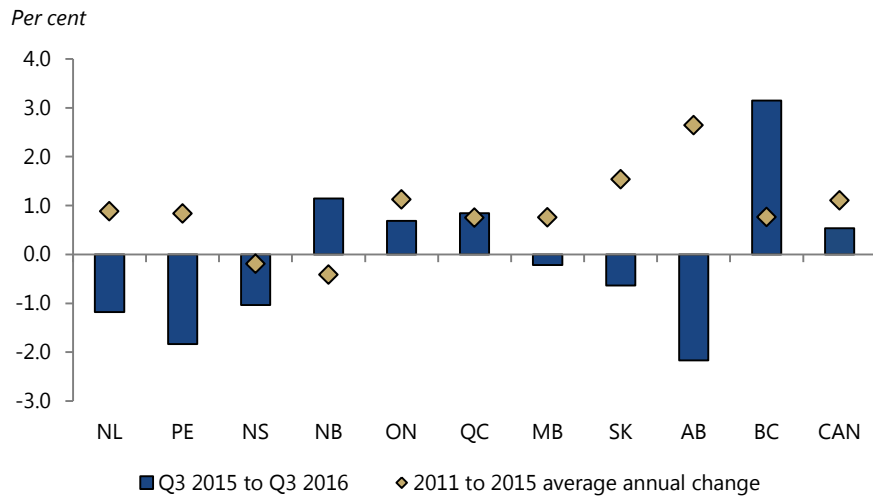
Canada's unemployment rate rose by 0.2 percentage points from Q2 2015 to Q2 2016, but declined in the United States, G7 and OECD (Figure 3-3).

As of Q2 2016, Canada's unadjusted<sup>5</sup> unemployment rate was 7.0 per cent compared to 4.9 per cent in the United States, 5.4 per cent in the G7 and 6.3 per cent in the OECD.

## 4. Province and Industry Indicators

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**Figure 4-1 Employment growth by province**



Sources: Parliamentary Budget Officer and Statistics Canada.

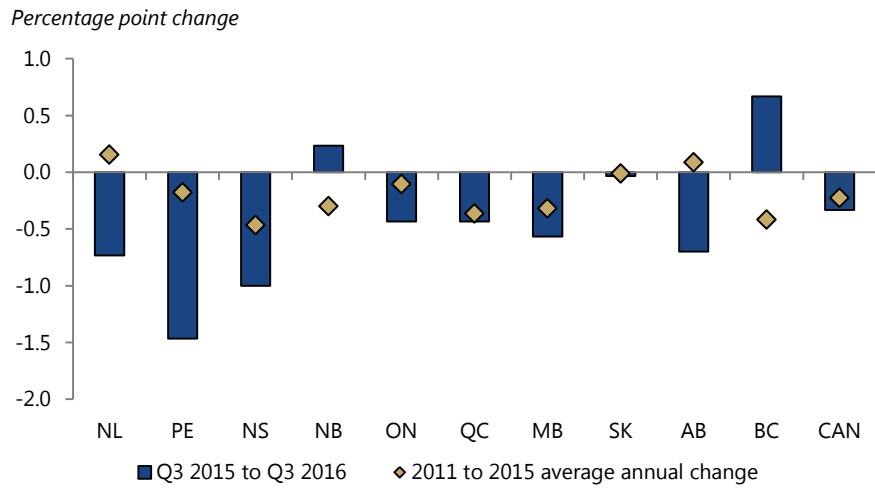
This section reviews labour market indicators at the provincial and industry level over the past year and compares them to their annual average during the recovery following the global financial crisis. We use this average as a benchmark since we do not construct trend estimates at the provincial or industry level.

Overall, labour market indicators have continued to worsen in provinces and industries closely tied to the oil and gas sector. Between Q3 2015 and Q3 2016, employment fell by 2.2 per cent in Alberta, by 1.2 per cent in Newfoundland and Labrador and by 0.6 per cent in Saskatchewan.

In contrast, between 2011 and 2015, employment increased at annual average rates of 2.6 per cent, 0.9 per cent and 1.5 per cent respectively in these provinces (Figure 4-1). Employment also declined in Prince Edward Island, Nova Scotia and Manitoba between Q3 2015 and Q3 2016.

Labour markets in British Columbia and New Brunswick were outliers from Q3 2015 to Q3 2016. Their employment increased 3.2 per cent and 1.1 per cent respectively, outperforming their average annual growth in the previous five years (Figure 4-1). Employment also grew in Quebec by 0.8 per cent and in Ontario by 0.7 per cent.

**Figure 4-2 Labour force participation rate by province**

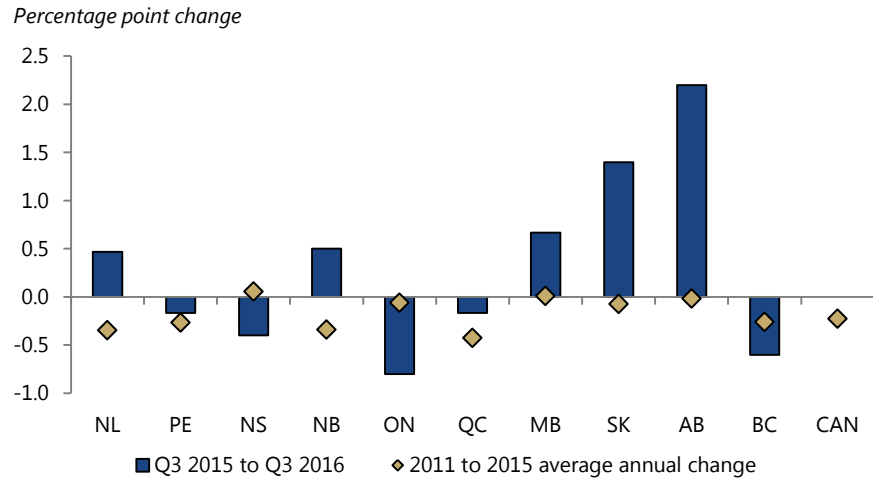


Sources: Parliamentary Budget Officer and Statistics Canada.

The labour force participation rate fell or remained flat in every province from Q3 2015 to Q3 2016, except for British Columbia, where it rose by 0.7 percentage points and New Brunswick, where it rose by 0.2 percentage points (Figure 4-2).



**Figure 4-3 Unemployment rate by province**

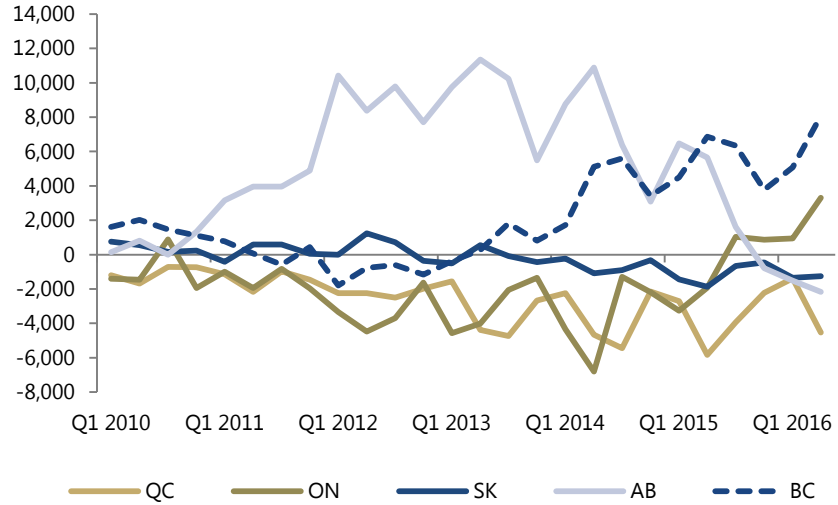


Sources: Parliamentary Budget Officer and Statistics Canada.

The unemployment rate rose in the oil-producing provinces from Q3 2015 to Q3 2016. The rate increased in Alberta by 2.2 percentage points, in Saskatchewan by 1.4 percentage points and in Newfoundland and Labrador by 0.5 percentage points. By contrast, the unemployment rate fell by 0.8 percentage points in Ontario and by 0.6 percentage points in British Columbia (Figure 4-3).

**Figure 4-4 Interprovincial migration flows**

*Persons, in-migrants less out-migrants*



Sources: Parliamentary Budget Officer and Statistics Canada.

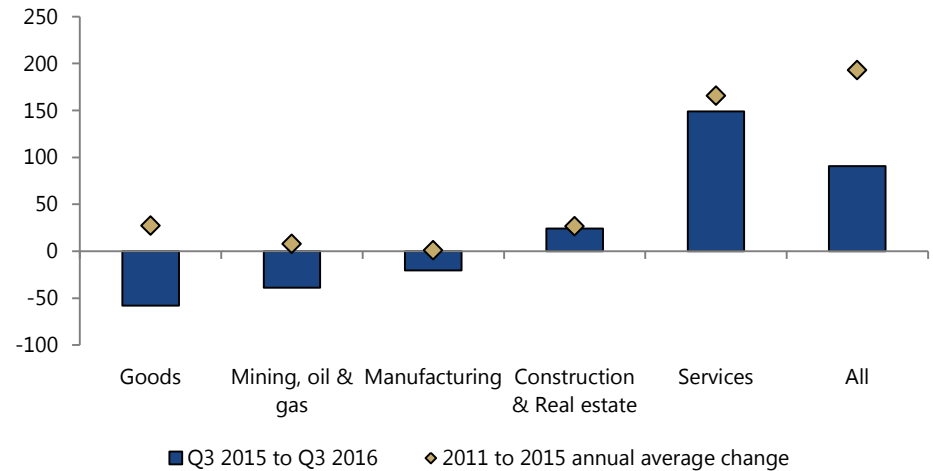
Data on interprovincial migration flows are consistent with labour market indicators in Alberta and British Columbia over the past year.

Alberta experienced net outflows in the first two quarters of 2016 for the first time since 2009 (Figure 4-4). British Columbia received almost 35,000 in net inflows from Q1 2015 to Q2 2016. By contrast, its labour force increased by 111,000 participants over that span, suggesting that interprovincial migration could have contributed, at most, about one-third of this increase.

In Ontario, positive inflows resumed in Q2 2015 for the first time since 2010 (Figure 4-4). However, its participation rate has declined by 0.3 percentage points since Q2 2015. Consequently, net inflows were offset by lower labour force participation by other residents.

**Figure 4-5 Employment change by select industry groups**

*Change in employment, thousands*



Sources: Parliamentary Budget Officer and Statistics Canada.

The service sector was the primary driver of employment gains in Canada from Q3 2015 to Q3 2016, adding almost 149,000 jobs. During the same period, employment in the goods sector fell by about 58,000, led by declines in mining and oil and gas, as well as manufacturing (Figure 4-5).

Despite the depreciation of the Canadian dollar, manufacturing employment fell by 20,000 from Q3 2015 to Q3 2016, compared to an average annual increase of 1,000 between 2011 and 2015.

Construction and real estate contributed 24,000 jobs from Q3 2015 to Q3 2016, in line with its average between 2011 and 2015.

## References

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Office of the Parliamentary Budget Officer, *Estimating Potential GDP and the Government's Structural Budget Balance*, January 2010

Office of the Parliamentary Budget Officer, *Labour Market Assessment 2014*, March 2014, [http://www.pbo-dpb.gc.ca/files/files/Labour\\_Note\\_EN.pdf](http://www.pbo-dpb.gc.ca/files/files/Labour_Note_EN.pdf).

Office of the Parliamentary Budget Officer, *Labour Market Assessment 2015*, November 2015, [http://www.pbo-dpb.gc.ca/en/blog/news/Labour\\_Market\\_Assessment\\_2015](http://www.pbo-dpb.gc.ca/en/blog/news/Labour_Market_Assessment_2015)

# Notes

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1. The output gap in Q3 2016 is based off projected real GDP growth of 3.3 per cent (annual rates) for that quarter.
2. PBO's estimates of labour trends are produced by in-house economic models. PBO estimates labour trends at the beginning of each calendar year and these estimates are used for the Economic and Fiscal Outlooks, the Fiscal Sustainability Report and the Labour Market Assessment. The methodology is detailed in "Office of the Parliamentary Budget Officer, Estimating Potential GDP and the Government's Structural Budget Balance, January 2010." Exogenous variables underpinning PBO trend estimates include the real after-tax interest rate, wealth, generosity of employment benefits, job offer rate, enrollment as well as cohort and age fixed effects.
3. This rate combines the unemployed with discouraged searchers, those waiting for recall or replies, long-term future starts and a portion of involuntary part-time workers who report that they would prefer to work more hours.
4. PBO's analysis of labour market outcomes for recent graduates relative to their educational qualifications and those required for their position uses data from the LFS as well as the National Occupational Classification Matrix (2011) published by Employment and Social Development Canada.
5. In order to remove Canada's unemployed from G7 and OECD averages, PBO does not use the OECD's harmonized unemployment rate which accounts for methodological differences between countries.