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KEY POLICY INSIGHTS

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BETTER POLICIES FOR BETTER LIVES

This Overview is extracted from the Economic Survey of Canada. The Survey is published on the responsibility of the Economic and Development Review Committee (EDRC) of the OECD, which is charged with the examination of the economic situation of member countries.

Key Policy Insights

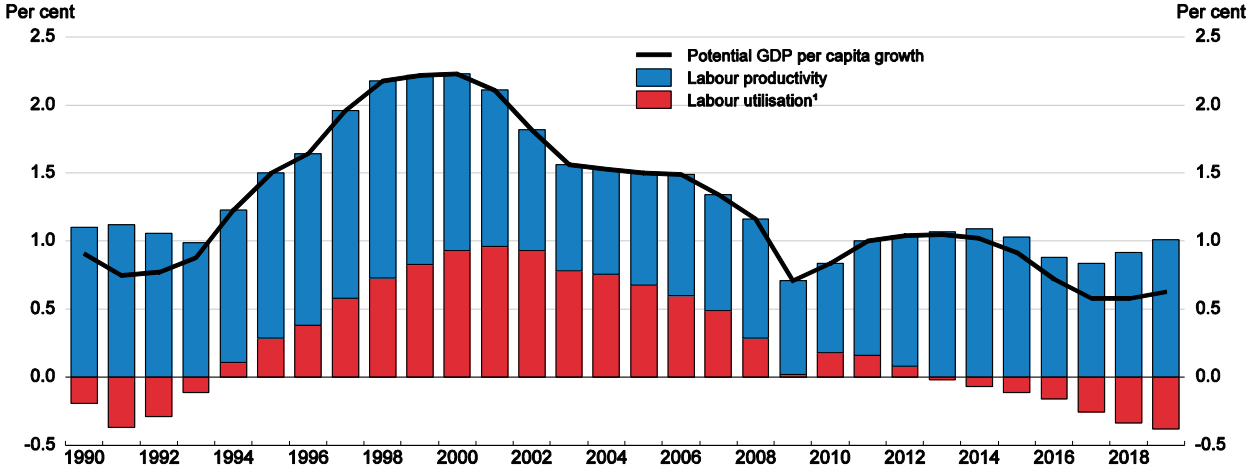
- *Recent developments, macroeconomic policies and short-term prospects*
- *The housing boom*
- *Fiscal sustainability*
- *Inclusiveness for women, youth and seniors*
- *Immigration policy*
- *Reforms to increase productivity*
- *Environmental sustainability*

The Canadian economy has recovered from the weak patch caused by the 2014 energy price slump. Good policy settings supported this recovery. Monetary policy was quickly eased and fiscal policy became stimulatory. The stimulus measures taken by the federal government were also aimed at making economic growth more inclusive and stronger in the long term. They included income tax cuts for the middle class, the introduction of the Canada Child Benefit and a large increase in infrastructure investment. And structural policy settings that contribute to the flexibility of the Canadian economy further supported the return to buoyant growth.

House price increases have been among the fastest in the OECD, creating affordability challenges that are most acute in fast-growing major cities. Macro-prudential measures have mitigated associated economic risks, but highly indebted borrowers will be vulnerable to high debt-service loads as interest rates increase.

Canada faces longer-term challenges associated with an ageing population and weak productivity growth. Already, population ageing has reduced the contribution of labour utilisation (i.e. employment as a share of the population) to growth in potential real GDP per capita, cutting its annual average growth rate to 0.6%, which is less than the OECD average (1.1%) (Figure 1). The effects of population ageing are set to intensify over coming decades. And labour productivity growth remains below the OECD average. Labour productivity continues to be well below that in the top half of OECD countries.

Figure 1. Decomposition of potential real GDP per capita growth in Canada



1. Population aged 15-74 years old.
Source: OECD (2018), *OECD Economic Outlook 103 database*.

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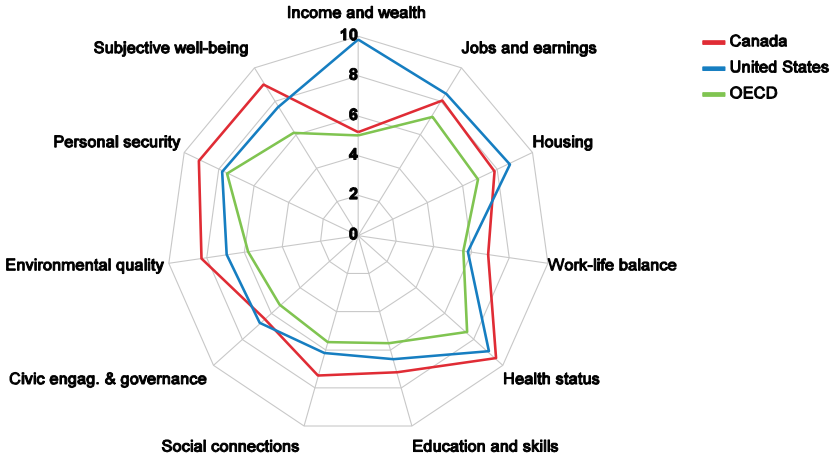
Canada scores highly in most dimensions of the OECD's Better Life Index (Figure 2). Outcomes for health status, education and skills, social connections, environmental quality, personal security and self-assessed measures of well-being are all much above average. However, this does not mean that all Canadians experience high well-being. Income inequality among the working-age population is around the OECD average and has changed little since 2000, with less-than-average redistribution (Figure 3, Panels A and B). The relative poverty rate (based on a poverty line of 50% of median household income) is well above the OECD average (Panel C). By contrast, the over-65 poverty rate is below the OECD average, pointing to the effectiveness of

Canada's retirement income system (Panel D). Wealth inequality has also changed little since 2000, with the top fifth holding around two thirds of net wealth.

Figure 2. Well-being in Canada is high

Better Life Index,[1] 2017 edition



1. Each index dimension is measured by one to four indicators from the OECD Better Life Index (BLI) set. Normalised indicators are averaged with equal weights. Indicators are normalised to range between 10 (best) and 0 according to the following formula: (indicator value - minimum value) / (maximum value - minimum value) x 10. The OECD aggregate is weighted by population. Please note that the OECD does not officially rank countries in terms of their BLI performance.
Source: OECD (2017), *OECD Better Life Index*, www.oecdbetterlifeindex.org.

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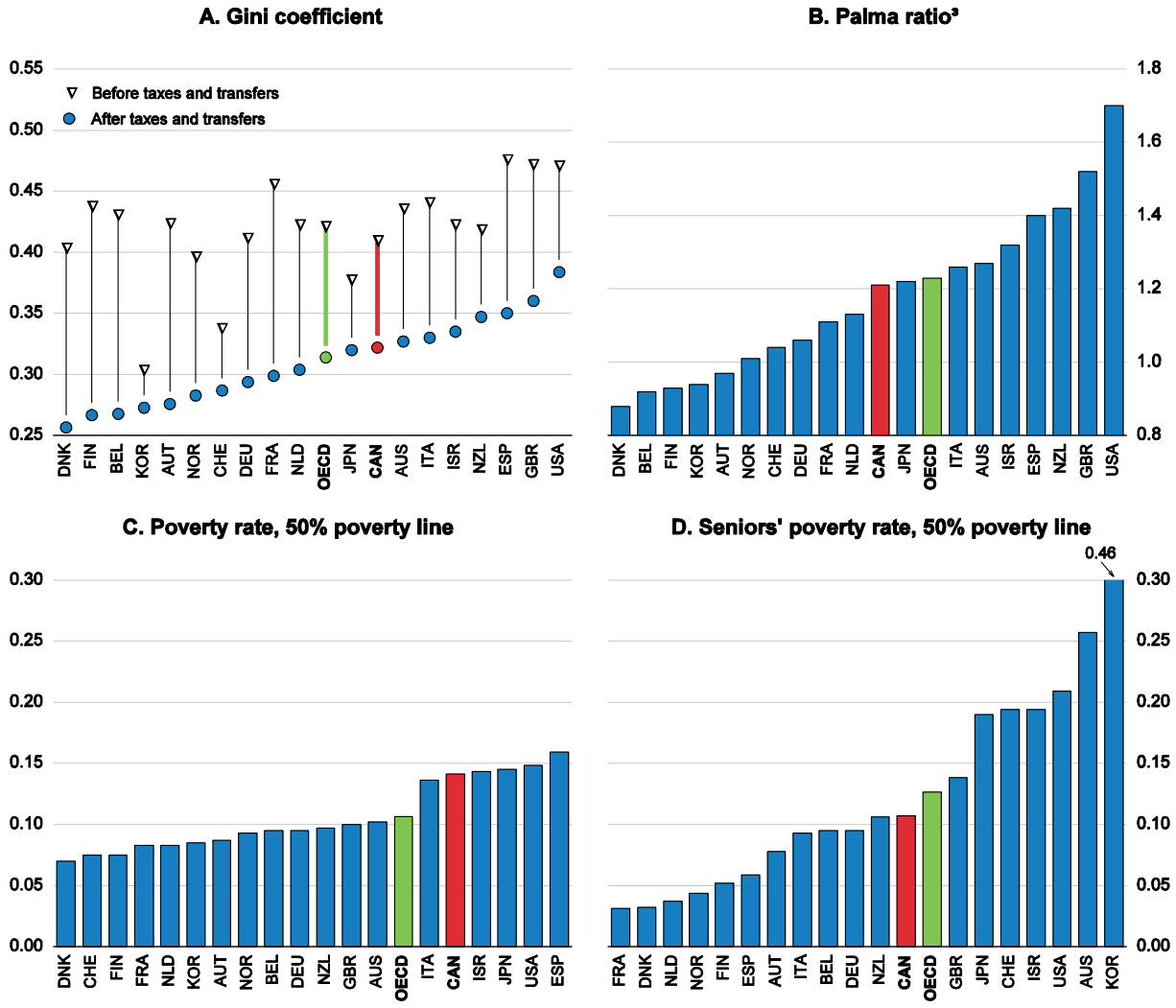
Canadian women do well on a number of measures including years of education and life satisfaction, but gender inequality in earnings is considerably larger than the OECD average, and the gender employment gap has not shrunk since 2009. The skills of young Canadians have deteriorated and young males at the bottom of the earnings distribution have experienced weak wage growth. While the relative poverty rate for seniors is low, it has increased steadily since the mid-1990s.

Canada's immigration policies are amongst the most successful in the world. It welcomes large numbers of immigrants from diverse backgrounds, who contribute to the economic dynamism and cultural diversity of the country, and maintains high levels of social cohesion. On most measures, immigrants are well integrated. However, labour-market integration challenges remain. Immigrants earn considerably less than the Canadian-born with similar education attainment, age and place of residence. Narrowing this gap by selecting immigrants with higher earnings prospects and improving integration measures would result in more immigrants fully realising their potential, boosting their well-being.

Figure 3. Income distribution and relative poverty rates[1]

2016 or latest available year[2]



1. Working-age population in Panels A, B and C. Population over 65 in Panel D.
2. 2014 data for the OECD aggregate.
3. Ratio of income of the top 10% to income of the bottom 40%.

Source: OECD, *Income Distribution database,* http://www.oecd.org/els/soc/income-distribution-database.htm.

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Against this background, the main messages of this *Economic Survey* are:

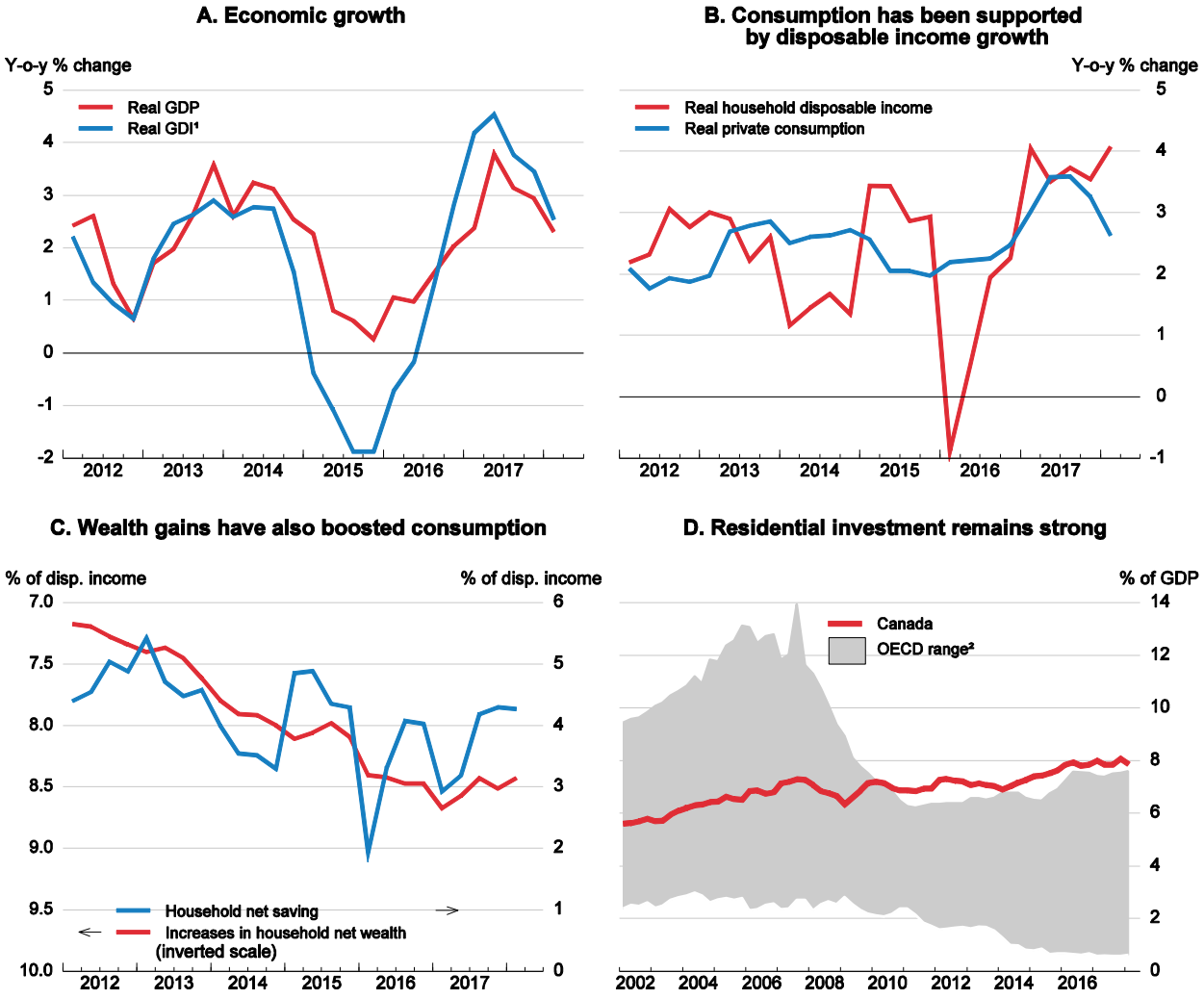
- House prices and household debt are high, notably in Toronto and Vancouver, undermining housing affordability and posing economic risks.
- Improving labour market outcomes for women, youth and seniors would help to counter the effects of population ageing and make growth more inclusive.
- Enhancing labour-market integration of immigrants would increase inclusiveness, as well as productivity and incomes.

Recent developments, macroeconomic policies and short-term prospects

Economic growth has recently eased towards more sustainable rates as capacity constraints tighten

Growth has returned to a more sustainable pace following strong increases until mid-2017 (Figure 4). Private consumption, which was the major driver in 2017, slowed late in the year with the removal of some monetary policy stimulus and smaller wealth gains from house price gains. The GDP share of residential investment is the OECD's largest but is far below the pre-crisis peaks in countries such as Ireland and Spain that experienced housing bubbles (Panel D). Canada's export mix means it is highly exposed to

Figure 4. Factors driving the economic expansion



1. Real Gross Domestic Income (GDI) equals real GDP adjusted for changes in the terms of trade.
2. Excluding Canada.

Source: Statistics Canada, Table 380-0065; OECD, *Economic Outlook database*.

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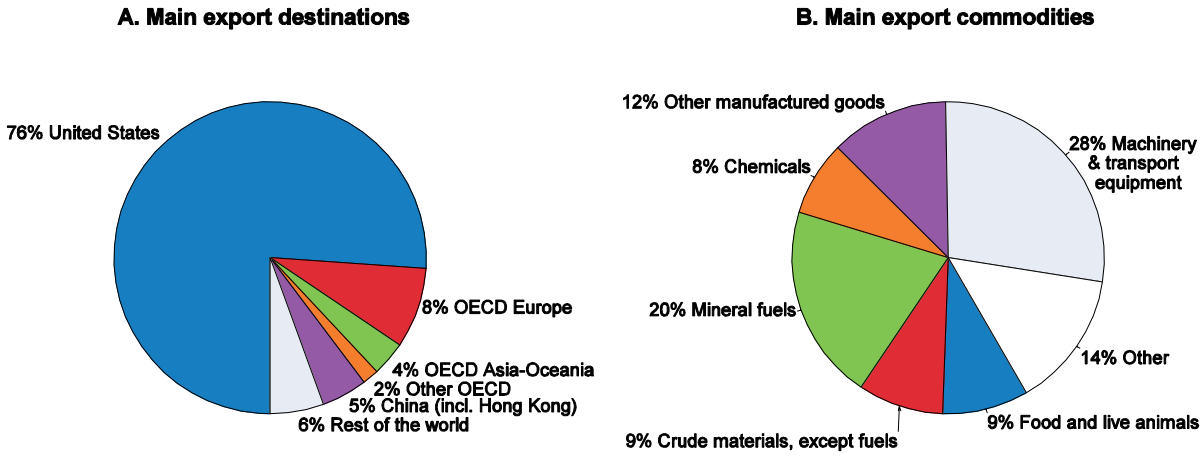
developments in the US economy and commodity markets (Figure 5). Adjustment to the fall in commodity prices that started in 2014 is now complete, with the mid-2016 rebound in commodity-producing industries boosting growth. Business investment has picked up but remains weaker than before the commodity price fall, in part because upstream oil and gas investment is being held up by pipeline capacity constraints and regulatory barriers to their expansion, which have curtailed exports as well.

Figure 5. Exports of goods by market and commodity

Share of total exports, 2017



Source: OECD, *International Trade Commodity Statistics database.*

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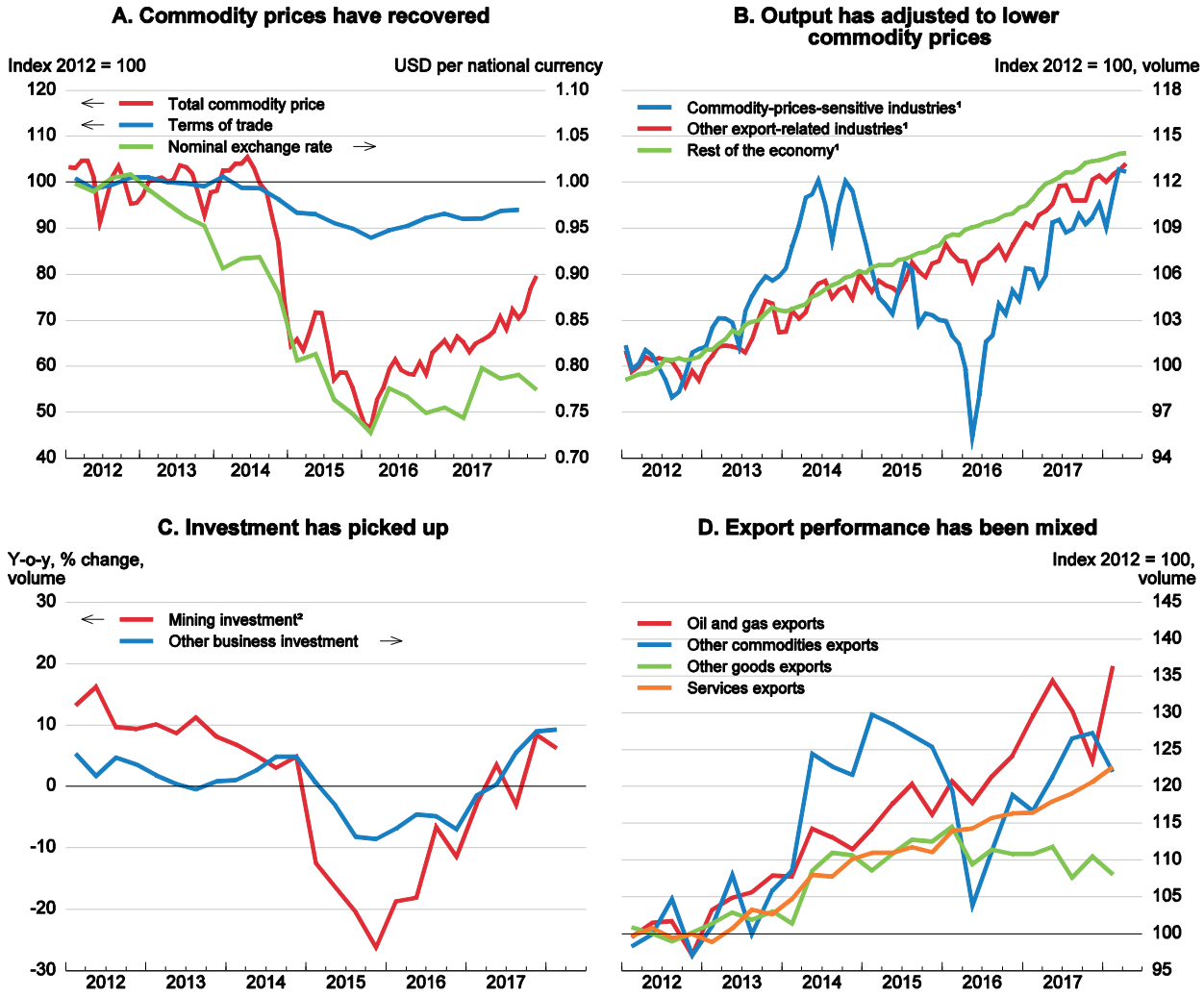
The real effective exchange rate has recovered along with commodity prices since the start of 2016, although it has fallen in recent months owing to US fiscal stimulus and the threat of tariffs on exports to the United States and remains well below 2010-13 levels. Non-commodity goods exports have seen little growth (Figure 6). The current account has been in deficit since the Global Financial Crisis, and in 2017 Canada recorded the third-largest deficit (as a share of GDP) among OECD countries. Even so, Canada's net international investment position turned positive in 2014 (Figure 7), driven by the effects of commodity price falls during 2014 and 2015: depreciation of the Canadian dollar increased the net position by 20 percentage points of GDP, while a sharp fall in the value of Canadian assets held by foreigners contributed a further 10 percentage points (LeBoeuf and Fan, 2017[1]).

Employment growth has been strong, and the unemployment rate has equalled the record low since comparable records began in 1976. The rate is now below the OECD's estimates of the structural rate, although such estimates are quite uncertain. The youth (15-24) unemployment rate has fallen to 11%, low historically and compared with the OECD average of 13%. At the same time, more people have entered the labour force (Figure 8, Panel A). The working age (15-64) employment rate has exceeded the previous cyclical peak from 2008, although the Bank's labour market indicator points to some remaining slack owing to a drop-off in working hours of full-time employees that has not yet been fully reversed despite increased employment being accompanied by an increase in average hours per worker in 2017.

Figure 6. Adjustment to the fall in commodity prices is complete

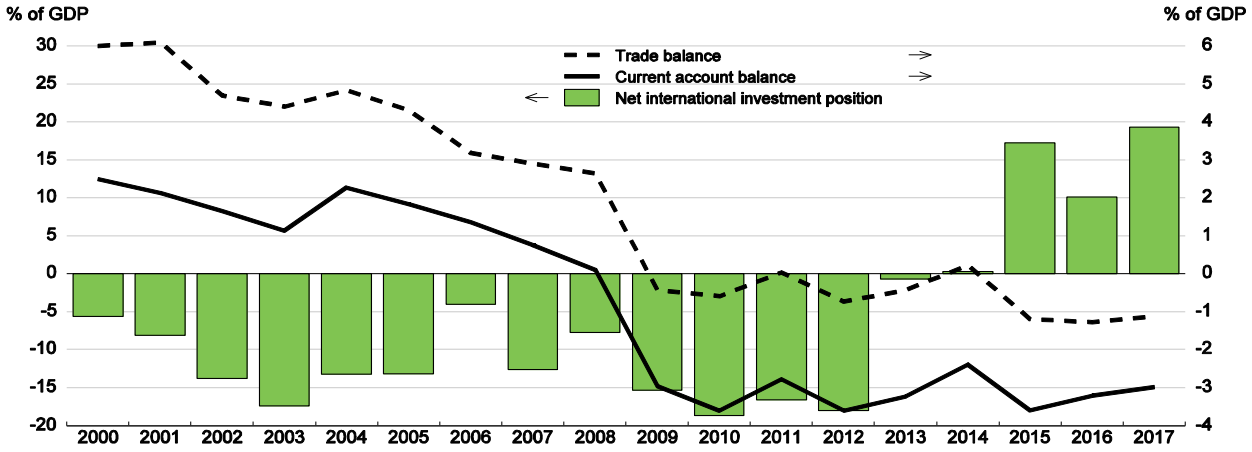


1. Three-month moving average of real output. For more detail on the sectoral definition, see notes in Bank of Canada (2016).
2. Includes oil and gas. Also includes some engineering structures investment that may relate to other sectors.
Source: OECD, *Economic Outlook database*; Bank of Canada (2016), *Monetary Policy Report*, April, Chart 9 updated; Statistics Canada, Tables 176-0075, 379-0031, 380-0068 and 380-0070.

StatLink http://dx.doi.org/10.1787/888933779580

As in many other countries, labour market strength was slow to translate into wage growth, but it has now picked up (Figure 8, Panel B). The latest Labour Force Survey data show hourly wage growth of close to 3% per year for full- and part-time employees alike (Statistics Canada, 2018[2]). Wage growth will be boosted over the next few years by increases in provincial minimum wage rates (Table 1). Bank of Canada researchers estimate that these increases will boost average hourly wage rates by 0.7% and inflation by around 0.1 percentage point in 2018, while reducing employment and GDP by 0.3% and 0.1%, respectively (Brouillette et al., 2017[3]).

Figure 7. External sector indicators



Source: OECD, *Economic Outlook database*.

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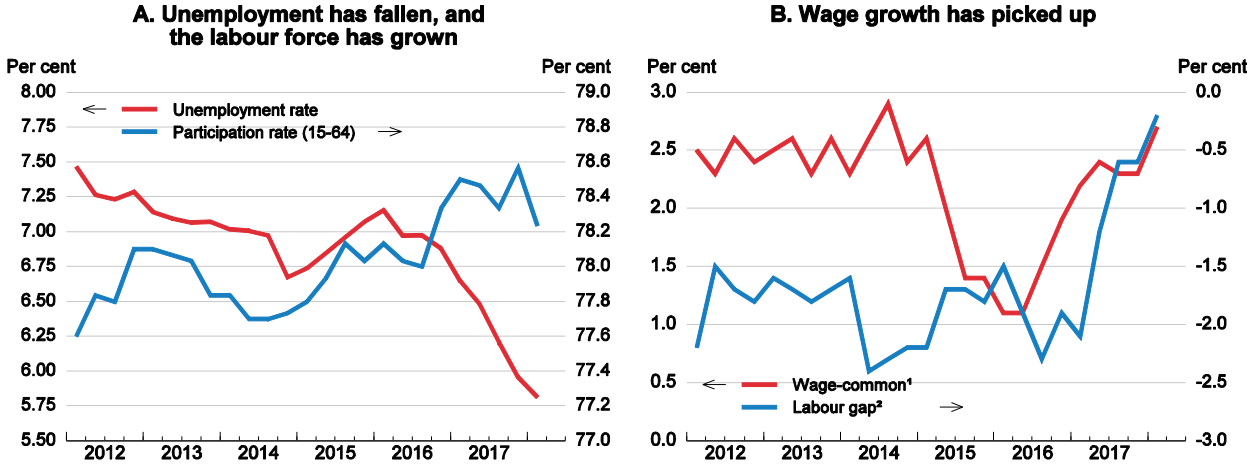
Figure 8. The labour market is tightening



1. Composite measure of wage pressures summarising data from the Labour Force Survey, National Accounts, Productivity Accounts, and Survey of Employment, Payrolls and Hours. For more detail, see Brouillette et al. (2018).
2. Deviation of aggregate hours worked from their estimated potential level.
Source: OECD, *Economic Outlook and Short-Term Labour Market Statistics databases*; D. Brouillette et al. (2018), "Wages: Measurement and Key Drivers", *Staff Analytical Note 2018-2*, Bank of Canada, charts 3 and B-3; Bank of Canada (2018), *Monetary Policy Report*, April.

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Consumer price inflation has increased to around the mid-point of the Bank of Canada's 1-3% annual medium-term target band, as have the Bank's preferred underlying inflation measures (Figure 9, Panel A). Inflation expectations are well-anchored, with almost all responses to the latest *Business Operations Survey* expecting inflation to fall within the target band.

Table 1. Scheduled minimum wage increases vary considerably across provinces

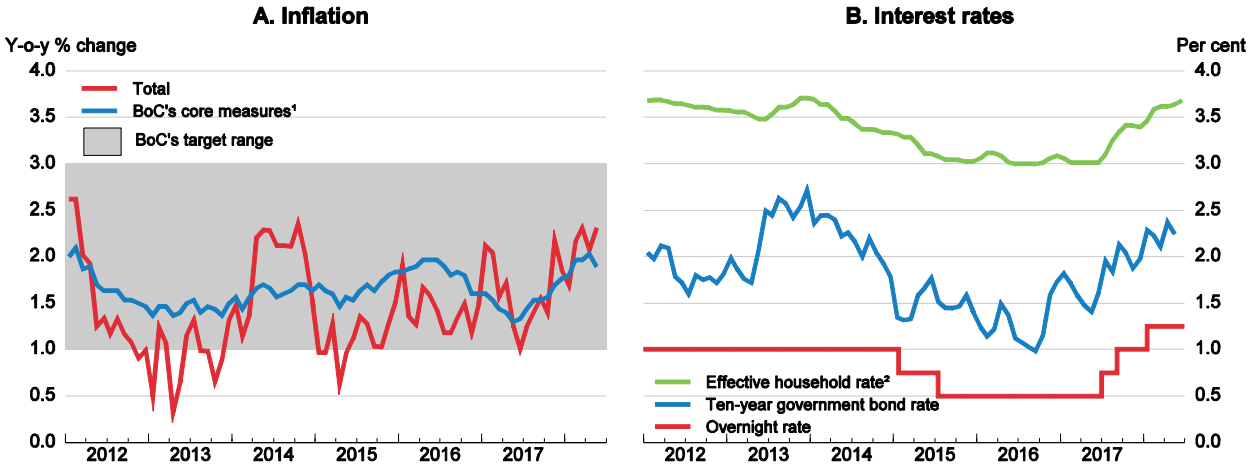
	Minimum wage as of:		Percentage increase
	1 January 2017	1 January 2019	
Newfoundland and Labrador	10.50	11.22	6.9
Prince Edward Island	11.00	11.55	5.0
New Brunswick	10.65	11.22	5.4
Nova Scotia	10.70	11.07	3.4
Québec	10.75	12.00	11.6
Ontario	11.40	15.00	31.6
Manitoba	11.00	11.35	3.2
Saskatchewan	10.72	11.18	4.3
Alberta	12.20	15.00	23.0
British Columbia	10.85	12.65	16.6

Note: In provinces where minimum wages as of 1 January 2019 are yet to be announced, these were calculated based on minimum wages as of 1 January 2018, incorporating 2% CPI growth where minimum wages are indexed to the CPI.
Source: (Brouillette et al., 2017[3]); (CNESST, 2018[4]); (Province of British Columbia, 2018[5]).

Macroeconomic policies are becoming less expansionary

Some monetary stimulus has been withdrawn through three official interest rate hikes since mid-2017 (Figure 9, Panel B). With the economy around potential, growth near the potential rate and core inflation at the mid-point of the target band, monetary stimulus would appear to be steadily less necessary. The OECD assumes that the policy rate will be progressively increased by 75 basis points to 2.0% by the end of 2019, which remains below the Bank of Canada's estimated range for the neutral rate (2.5-3.5%).

Figure 9. Inflation has returned to near the middle of the Bank of Canada's target range



1. Average of the Bank of Canada's 3 preferred core inflation measures (CPI-trim, median and common).
2. Weighted-average of various mortgage and consumer credit rates.
Source: Statistics Canada, Tables 326-0022, 326-0023, 176-0043 and 176-0048; Bank of Canada, https://credit.bankofcanada.ca/financialindicators.

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Rising global long-term interest rates will also tighten monetary conditions. Global term premia (i.e., the difference between long- and short-term rates) are likely to rise as the

Federal Reserve and European Central Bank unwind quantitative easing. The Bank of Canada estimates that 50-75% of changes in US term premia, which are also affected by ECB premia, flow into Canadian term premia. Canadian long-term rates are currently about 60 basis points below US rates, a historically wide margin, showing confidence in Canadian policy settings.

The overall stance of fiscal policy is estimated to have been stimulatory over the past two years, during which the underlying primary budget balance of general government declined by 1.8% of GDP, to be neutral in 2018 and slightly stimulatory in 2019 (Table 2). The 2016-2017 stimulus primarily reflects federal-level developments, while that in 2019 primarily reflects developments in Ontario. The 2016-17 stimulus supported the economy during the weak patch caused by the fall in oil prices, but, with adjustment now complete and the economy back around potential, such support is no longer warranted. While the federal debt-to-GDP ratio is likely to decline somewhat over the five-year budget planning horizon, the government has dropped its other objective of returning the budget to balance over that period Table 3).

Table 2. Fiscal projections

As a percentage of GDP

	2015	2016	2017	2018	2019
					Projections
Revenues	39.8	39.6	39.3	39.0	39.0
Expenditures	39.9	40.7	40.3	40.0	39.9
Budget balance	-0.1	-1.1	-1.0	-1.0	-1.0
Primary balance	0.5	-0.4	-0.6	-0.4	-0.3
Underlying primary balance	1.7	0.9	-0.1	-0.2	-0.6
Change	0.6	-0.8	-1.0	-0.1	-0.3
Gross debt	97.5	97.8	93.8	93.6	93.5
Net debt	29.1	29.2	24.8	24.6	24.5
Budget balance by government level[1]					
Federal	0.3	-0.4	-0.4	-0.2	-0.2
Provincial, territorial, local, aboriginal	-1.0	-1.2	-1.0	-1.3	-1.3
Canada/Québec Pension Plans	0.6	0.6	0.5	0.6	0.5

1. Government Financial Statistics.
Source: Statistics Canada, Table 385-0032 and OECD (2018), *OECD Economic Outlook 103 database*.

Table 3. Federal government medium-term budget outlook[1]

As a percentage of GDP

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Budget revenues	14.4	14.5	14.5	14.5	14.5	14.6	14.5
Programme expenses	14.1	14.2	14.0	13.9	13.8	13.7	13.6
Public debt charges	1.2	1.1	1.2	1.2	1.3	1.3	1.3
Budget balance	-0.9	-0.9	-0.8	-0.8	-0.7	-0.6	-0.5
Federal debt	31.0	30.4	30.1	29.8	29.4	28.9	28.4

1. Fiscal years end 31 March.
Source: Finance Canada, *Budget 2018*.

Provincial governments should establish budget agencies to provide independent analyses, as recommended in the last *Survey* (Table 4). In addition, they should strengthen their fiscal rules to target their overall and not just their operational balances, to establish a clear link between deficit and debt targets (IMF, 2017[6]). Estimates of the fiscal impact of the recommendations in this *Survey* are given in Box 1.

Table 4. Past OECD recommendations on fiscal policy

Recommendations in past *Surveys*	Actions taken since the previous *Survey*
Strengthen the fiscal framework by adopting a medium-term debt-to-GDP target, taking into account the outlook for provincial/territorial debt, to ensure that general government finances are sustainable, as well as the associated multi-year budgeting and spending ceilings.	The federal government has committed to reducing the federal debt-to-GDP ratio over a five-year period but has not specified targets. It has also noted that it remains committed to eventually returning to balanced budgets without providing a timeframe.
Establish provincial budget agencies, as in Ontario, or, better still, an agency reporting to the Council of the Federation that provide(s) independent analysis of fiscal forecasts and cost estimates for policy proposals.	No action taken.

Box 1. Quantifying this *Survey's* fiscal recommendations

The estimates in Table 5 are based on data from publicly available sources. They quantify the approximate net general government budgetary impact of recommendations in this *Survey*. Some recommendations (such as reducing marginal effective tax rates for Guaranteed Income Supplement recipients) are not quantifiable without further specific design decisions, and others (such as consolidation of labour market information) are already funded or primarily involve simplification of existing arrangements.

Table 5. Potential annual long-term fiscal effect of OECD recommendations

	% of GDP	CAD billion per year
Increase funding for active labour market policies	-0.12	-2.7
Further increase childcare funding	Net long-term cost much smaller than the short-term outlay	
Increase the age of eligibility for public pensions	0.15	3.4

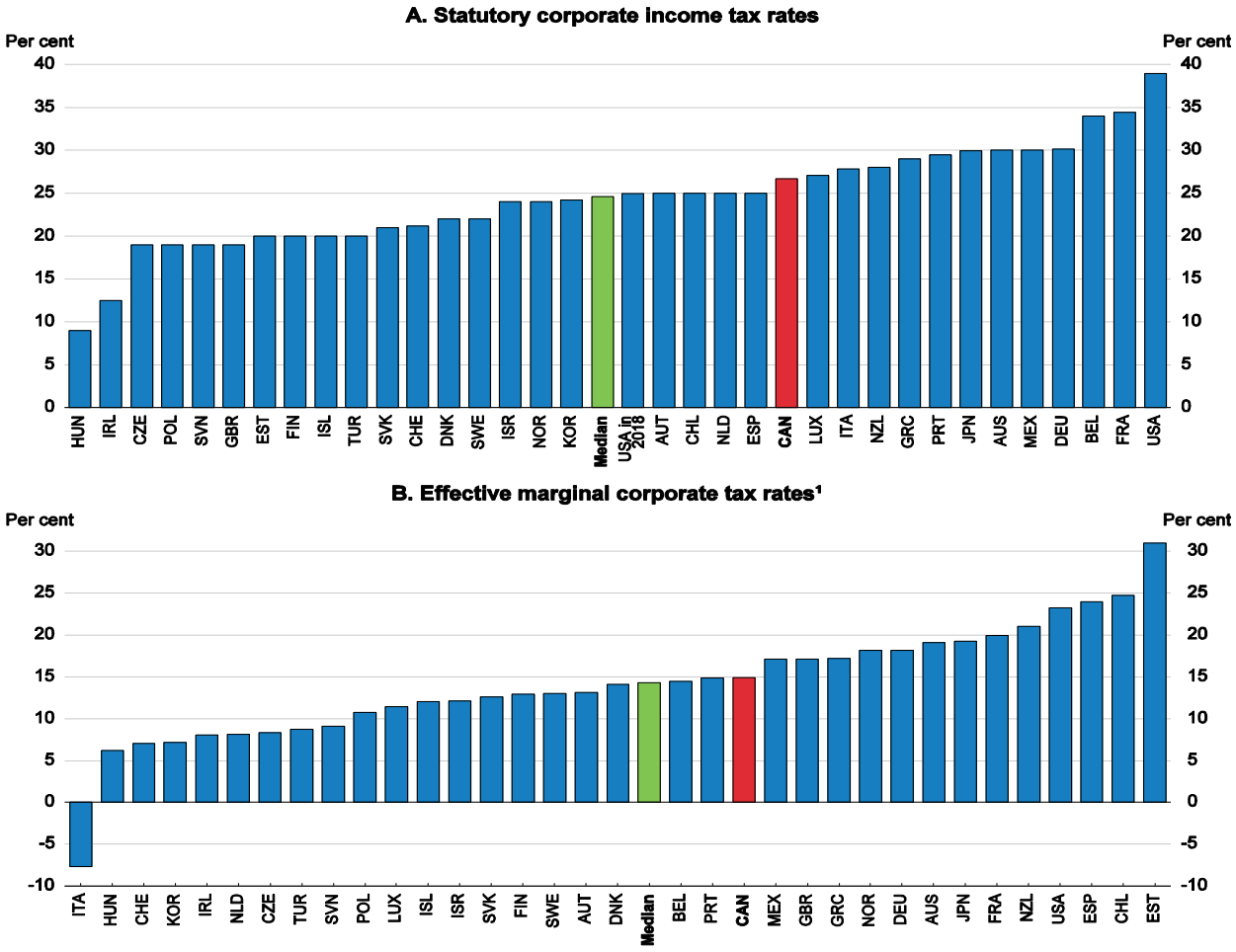
Note: Calculated based on fiscal year 2018-19 GDP projections. Elimination of the preferential tax rate for small companies is at both the federal and provincial levels of government, excluding any dynamic effects due to changes in behaviour or economic growth. The increase in funding for active labour market policies is based on increasing spending per unemployed worker as a share of GDP per capita from 5.9% to 8.9%, halving the 11.8% gap with the OECD median. The net fiscal impact of increased childcare funding is based on outcomes in Québec, as documented in Fortin, Godbout and St-Cerny (2013[7]). There are likely to be significant short-term fiscal costs associated with increased childcare funding, with an estimated CAD 7.5 billion annually required nationally to operate childcare programmes with similar coverage to Québec's (Fortin, 2018[8]). The fiscal impact of increasing the age of eligibility for public pensions is based on a one-year increase, using estimates from the Office of the Chief Actuary that exclude any dynamic effects on economic growth from people working longer (2016[9]).

NAFTA threats and US tax reform are weighing on the outlook

Uncertainty about the future of NAFTA and other aspects of US trade policy are weighing on the outlook and may be dampening the growth of business investment. The Bank of Canada (2018[10]) estimates that trade policy uncertainty could reduce the level of business investment and exports by 2.1% and 1.0%, respectively, by the end of 2020. The

US corporate tax reform has also decreased the relative attractiveness of investing in Canada, reinforcing the negative effects of NAFTA uncertainty. Canada's nominal and marginal effective corporate tax rates were substantially lower than those in the United States, but this advantage has now effectively disappeared (Figure 10); Finance Canada estimates that the post-reform US marginal effective tax rate (including sales taxes) is 19.2%, slightly above the Canadian rate of 17.6%. The Bank of Canada (2018[10]) estimates that the US tax cut will reduce business investment in Canada by 0.9% by the end of 2020. The government should review the tax system to ensure that it remains efficient -- raising sufficient revenues to fund public spending without imposing excessive costs on the economy -- equitable and supports the competitiveness of the Canadian economy.

Figure 10. Corporate income tax rates, 2017



1. The effective marginal corporate tax rate is the percentage increase in the cost of capital of a marginal investment - that is, an investment that pays just enough to make the investment worthwhile - as a result of the corporate income tax rate and tax base. This measure does not include sales taxes.
Source: OECD, *Tax database*; Oxford University Centre for Business Taxation, *CBT tax database*.

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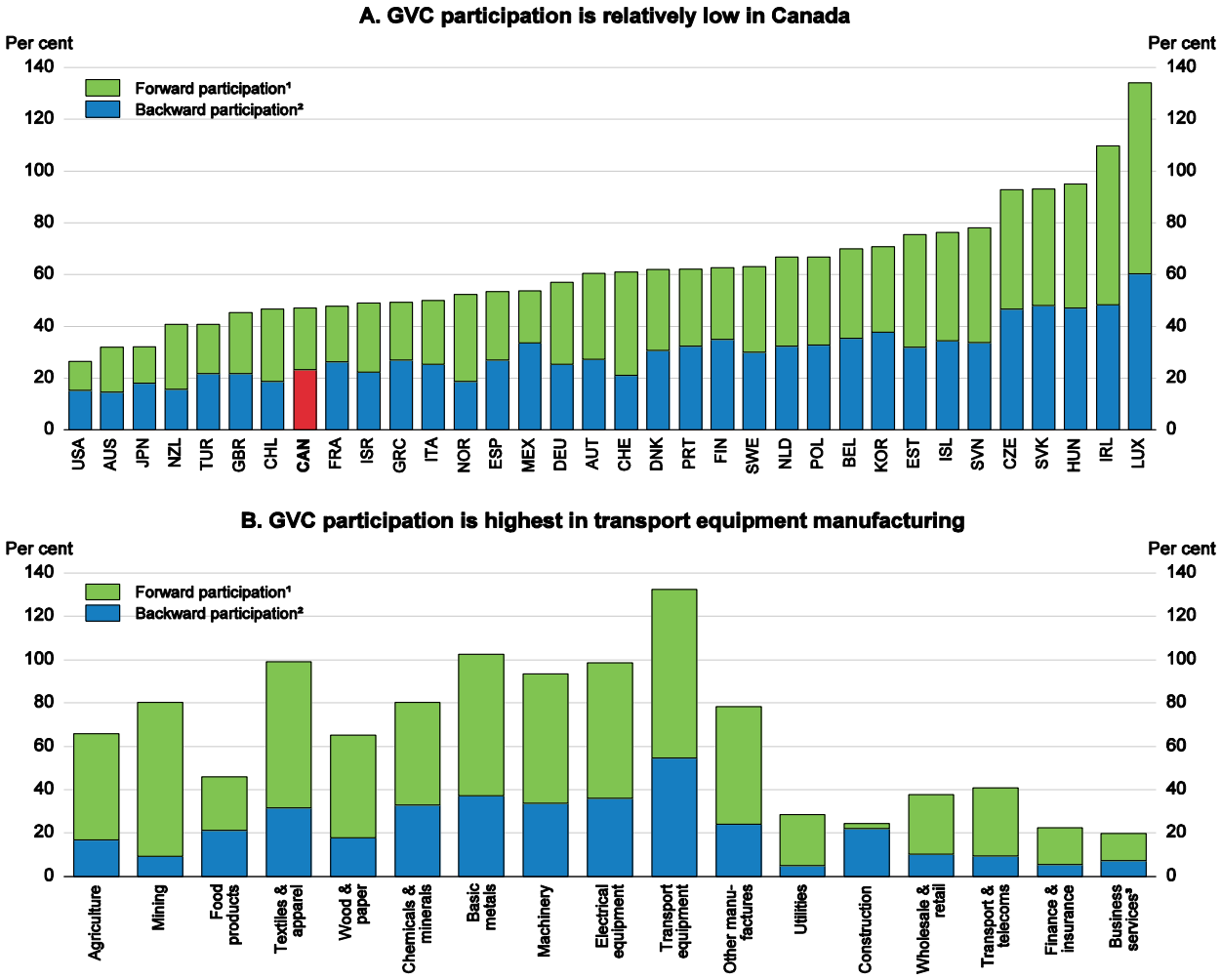
Canada has benefited greatly from openness to international trade, which increases incomes and well-being through the increased productivity that results from greater scale and production specialisation, and more diverse consumer choice. For example, NAFTA

has contributed to the development of cross-border supply chains, typified by those in the automotive manufacturing industry. Canada's participation in such regional or global value chains is more limited than in strongly interconnected European and Asian countries but has expanded recently and is notably higher in some sectors, such as transport equipment (Figure 11). Participation in such value chains extends and diversifies potential export markets, fosters investment, increases competitive pressures and entails technological, skill and managerial spillovers. To the extent that deeper integration in value chains spurs innovation, it is also likely to contribute to upward social mobility (Aghion et al., 2015[11]). If NAFTA were to be terminated, potential losses are

Figure 11. Global value chain (GVC) participation, 2014



1. Domestic value added embodied in foreign exports as a percentage of total gross exports.
2. Foreign value added embodied in exports as a percentage of total gross exports.
3. Real estate, renting and business activities.

Source: OECD-WTO, *Trade in Value Added database* (TiVA), http://oe.cd/tiva.

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estimated to amount to around 0.5% of GDP in the short term and 0.2% of GDP in the long term, when displaced labour and capital will have been reallocated (Box 2). There is

considerable uncertainty around these estimates, and effects could be larger if services trade is impeded. The spectre of permanently losing exemption from 25% US tariffs on imports of steel and 10% on aluminium would add to the costs if NAFTA

Box 2. Simulating the potential economic effects of NAFTA termination

Several institutions have modelled the economic impact of tariffs rising from those set under NAFTA (Table 6). There is considerable variation across different estimates, reflecting the use of different economic models and other analytical differences, with three key factors standing out:

- Impacts are more severe in the short and medium term, when labour and capital markets are still adjusting and employment is lower than otherwise.
- Studies that model increases in non-tariff barriers to trade, including barriers to trade in services, find substantially higher costs of termination.
- Impacts are smaller where Canada chooses not to raise import tariffs, or where the United States–Canada Free Trade Agreement remains in force.

Adding to uncertainty, these studies exclude the loss of dynamic productivity growth benefits arising from the NAFTA agreement, for example from expansion of value chains across North America and increases in foreign direct investment. Canada's participation in global value chains increased between 2011 and 2015 (Escobar, 2018 forthcoming[12]).

Table 6. Estimated impact of NAFTA termination on level of real GDP (%)

	Initial impact (2018-19)	Long-term impact
CD Howe	n/a	-0.6
IMF	-0.4	-0.1
Moody's Analytics	-0.7	-0.2
Oxford Economics	-0.5	-0.2
Rabobank	Medium-term impact (to 2025) of -2.0	
Scotiabank	-0.6	-0.3

Note: Researchers from the CD Howe Institute modelled a scenario where tariffs on trade between the United States, Canada and Mexico revert to WTO most-favoured-nation levels, as well as taking into account the impact of removing NAFTA provisions that ease services market access. The IMF modelled a scenario where the United States raises the average tariff on imports from Canada by 2.1 percentage points to the WTO most-favoured-nation level, with no retaliation from Canada. Moody's Analytics modelled a scenario where trade between the United States and Mexico reverts to most-favoured-nation tariffs while trade between the United States and Canada is based on United States–Canada Free Trade Agreement rules. Oxford Economics modelled a scenario where tariffs on US trade with Canada and Mexico would rise in line with most-favoured-nation rules (an average tariff on US imports of 3.5%), while trade between Canada and Mexico continues under NAFTA rules. Rabobank modelled the same tariff increases as Oxford Economics, in conjunction with an increase in non-tariff barriers that roughly doubled the impact on Canada. Scotiabank modelled reversion to a 3.5% most-favoured-nation tariff on US imports from Canada and Mexico, with Canada and Mexico reciprocating with identical tariffs on NAFTA trade.

Source: (Ciuriak et al., 2017[13]); (IMF, 2017[6]); (Zandi, Rogers and LaCerda, 2017[14]); (Klachkin and Daco, 2018[15]); (Erken et al., 2018[16]); (Perrault et al., 2017[17]).

renegotiation were to fail, as Canada is the biggest source country for US imports of both metals. Such trade was worth just over CAD 16 billion in 2017 (about 0.8% of GDP). On

the other hand, the Canada-European Union Comprehensive Economic and Trade Agreement and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership are positive developments that reflect the Canadian government's efforts to further promote trade and will deliver long-term benefits to Canadians.

Economic growth is projected to remain solid

Economic growth is projected to ease from 3% in 2017 to around 2% in 2018-19 as private consumption and government spending slow, the former as interest rates rise further, house price appreciation slows and job growth eases (Table 7). Business

Table 7. Macroeconomic indicators and projections
Annual percentage change, volume (2007 prices)

	2014 Current prices (CAD billion)	2015	2016	2017	2018	2019
Gross domestic product (GDP)	**1 990**	**1.0**	**1.4**	**3.0**	**2.1**	**2.2**
Private consumption	1 110	2.2	2.3	3.4	2.4	1.8
<	404	1.6	2.2	2.2	2.1	1.8
Gross fixed capital formation	487	-5.1	-3.0	2.8	4.2	3.2
Housing	141	3.5	3.3	2.9	1.8	1.1
Business	274	-11.0	-9.0	2.4	5.5	4.3
Government	71	0.4	5.2	3.9	5.3	3.9
Final domestic demand	2 001	0.3	1.1	3.0	2.8	2.1
Stockbuilding[1]	9	-0.2	-0.2	0.8	0.0	0.0
Total domestic demand	2 010	0.1	0.8	3.8	2.7	2.1
Exports of goods and services	628	3.5	1.0	1.0	1.7	4.4
Imports of goods and services	647	0.7	-1.0	3.6	3.7	3.9
Net exports[1]	- 20	0.9	0.7	-0.9	-0.7	0.1
Other indicators (growth rates, unless specified)						
Potential GDP	. .	2.0	1.7	1.6	1.5	1.5
Output gap[2]	. .	-1.9	-2.2	-0.8	-0.3	0.4
Employment	. .	0.9	0.7	1.9	1.2	0.8
Working-age population (15-74)		0.8	1.1	0.7	0.6	0.6
Unemployment rate[3]	. .	6.9	7.0	6.3	5.7	5.5
GDP deflator	. .	-0.8	0.6	2.3	2.7	2.3
Consumer price index	. .	1.1	1.4	1.6	2.3	2.2
Core consumer prices[4]	. .	1.9	1.9	1.6	1.9	2.2
Household saving ratio, net[5]	. .	4.6	3.4	3.4	3.2	3.4
Terms of trade		-6.9	-1.9	3.0	2.1	0.1
Trade balance[6, 7]	. .	-2.5	-2.4	-2.3	-2.2	-2.1
Current account balance[6]	. .	-3.6	-3.2	-3.0	-2.7	-2.5
Three-month money market rate, average	. .	0.8	0.8	1.1	1.7	2.1
Ten-year government bond yield, average	. .	1.5	1.3	1.8	2.5	3.6

1. Contribution to changes in real GDP.
2. As a percentage of potential GDP.
3. As a percentage of the labour force.
4. Consumer price index excluding food and energy.
5. As a percentage of household disposable income.
6. As a percentage of GDP.
7. Goods and services.

Source: OECD (2018), *OECD Economic Outlook 103 database.*

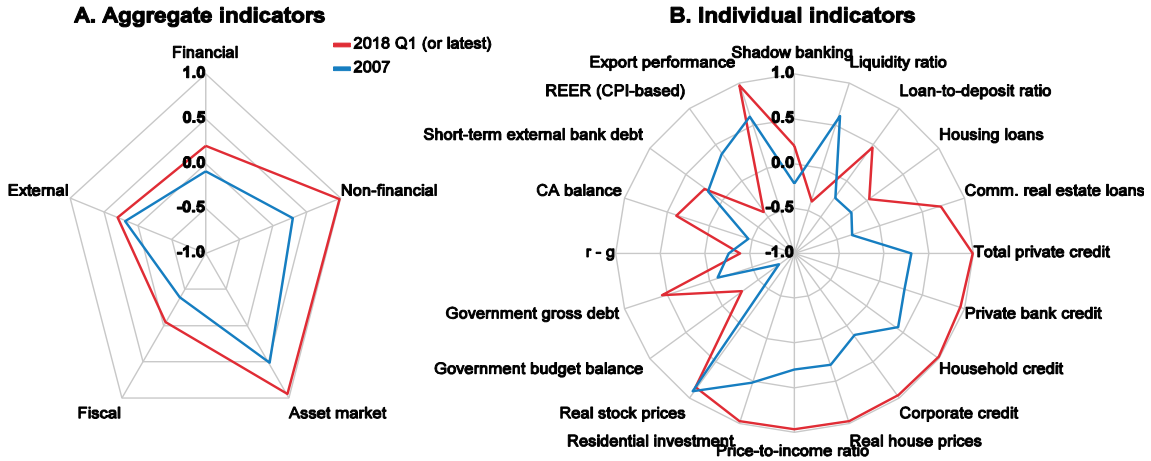
investment will be supported by capacity constraints, high profitability and still low financing costs, but oil and gas exports will continue to be held back by pipeline capacity

constraints until mid-2018. Infrastructure investment is set to rise this year and to remain at an elevated level thereafter, partly to make up for earlier delays in implementing the government's 12-year CAD 187 billion programme. Export growth will be driven by strengthening global demand, notably from US fiscal stimulus and investment growth. Inflation may rise to slightly above the 2% target band mid-point and unemployment should fall somewhat.

Major risks to the projection concern increases in restrictions on global trade and a disorderly housing market correction (see below). Macro-financial vulnerabilities are substantially higher than at the end of the last expansion, as rapid appreciation in house prices and the associated expansion in household debt has created substantial financial, non-financial and asset-market risks (Figure 12). Fiscal vulnerabilities remain close to their long-term averages but have increased relative to 2007 due to an increase in government debt. The greatest uncertainty concerns trade restrictions, with Canada exposed to the fallout from increased tariffs on imports into the United States and retaliatory measures elsewhere. Investment intentions surveys indicate that this uncertainty is already constraining Canadian investment. There would be further negative implications for growth if NAFTA were terminated (Table 8) or alternatively a boost to investment if uncertainty were resolved under similar or increased market access. Faster

Figure 12. Evolution of macro-financial vulnerabilities

Index scale of -1 to 1 from lowest to greatest potential vulnerability, where 0 refers to long-term average, calculated for the period since 1970[1]



1. Each aggregate macro-financial vulnerability dimension is calculated by aggregating (simple average) normalised individual indicators from the OECD Resilience database. The financial dimension includes: shadow banking (% of GDP), the liquidity ratio, the loan-to-deposit ratio, housing loans and commercial real estate loans. The non-financial dimension includes: total private credit, private bank credit, household credit and corporate credit (all in % of GDP). The asset market dimension includes: real house prices, price-to-income ratio, residential investment (% of GDP) and real stock prices. The fiscal dimension includes: the government budget balance (% of GDP), government gross debt (% of GDP) and real bond yield minus potential growth rate (r-g). The external dimension includes: the current account balance (% of GDP), short-term external bank debt (% of GDP), the real effective exchange rate (REER) and export performance. Most financial data start in 2005.

Source: Calculations based on OECD (2018), *OECD Resilience database*, May.

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growth is also possible if private consumption or residential investment growth do not slow as much as anticipated or if a stronger synchronised global upturn pulls up investment and exports.

Table 8. Possible shocks affecting the Canadian economy

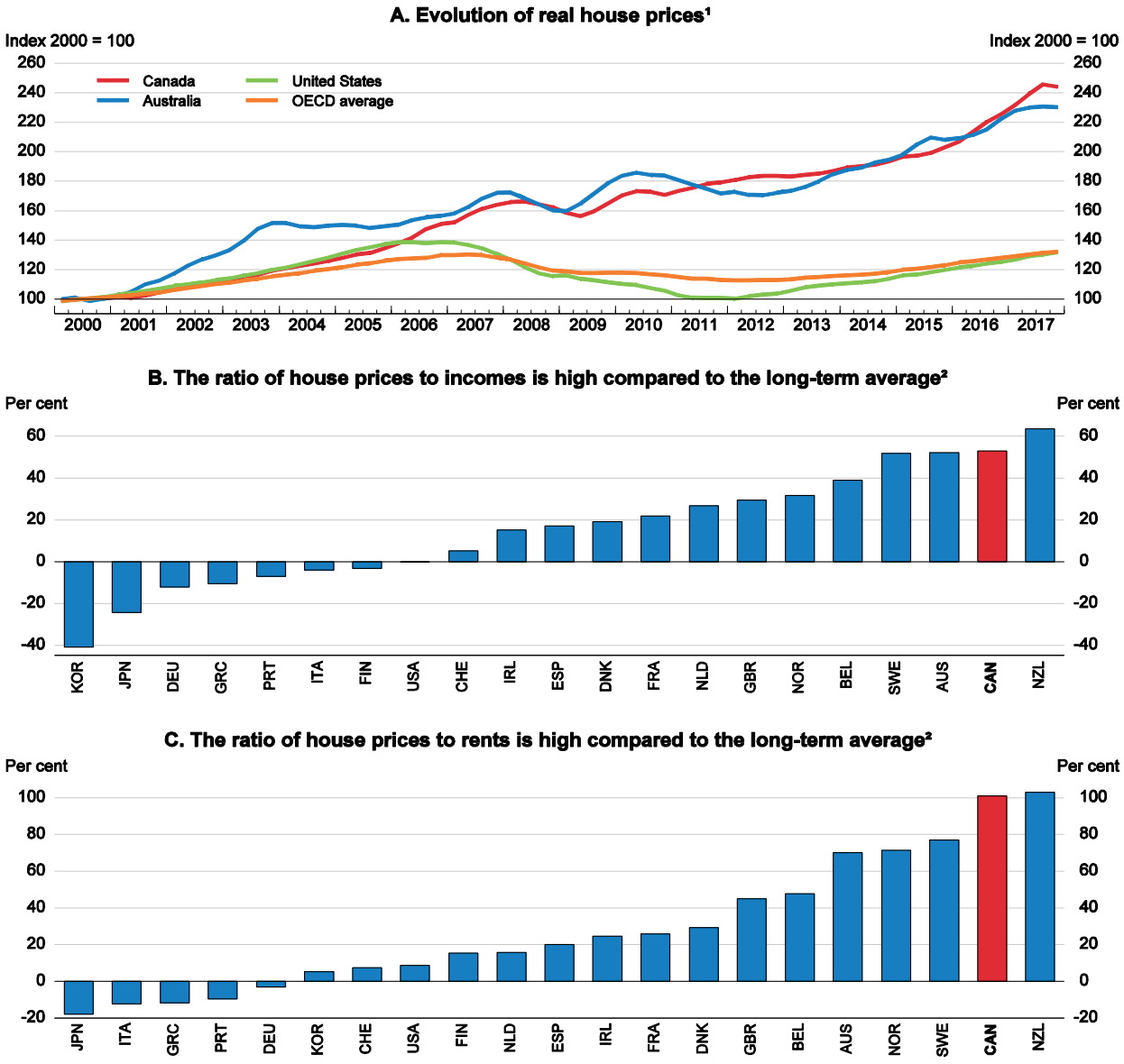
Shock	Possible impact
Housing market correction	A housing market correction would reduce residential investment, household wealth and consumption, with Canada's high level of residential investment amplifying the potential impact. A sufficiently large shock could even threaten financial stability. Fiscal costs from government-backed housing insurance would arise only under very large price falls with widespread defaults, as insurers hold substantial capital reserves. The IMF (2017[6]) has estimated that a 30% decline in house prices initiated by tighter global financial conditions would have a negative effect on GDP of around 3% in the short term, with consumption 3.5% lower due to wealth effects and investment 18% lower. Such a large decline would need to be triggered by developments external to the housing market, such as substantial increases in unemployment or interest rates.
Increased global trade restrictions	As a small, open economy, Canada is highly exposed to increases in trade restrictions, particularly barriers to trade with its major trading partner, the United States. An increase in trade restrictions would slow Canadian growth through dampening exports and investment, with larger effects if a global trade war reduced economic growth among key trading partners. A number of modelling exercises indicate that Canadian GDP could be around 0.5% lower if NAFTA were terminated, but with considerable uncertainty (Box 2 above). Negative effects would be concentrated in industries with supply chains that are integrated across North America, such as automotive manufacturing. Business services could also face substantial losses due to their importance as intermediate inputs, which would be exacerbated if NAFTA provisions easing services market access were removed (Ciuriak et al., 2017[13]).
Disorderly financial asset price deflation with normalisation of monetary policy	Excess liquidity has driven up global prices for financial assets, cutting yields to historically low levels. Monetary policy normalisation will see short-term interest rates and term premia rise; increasing US budget deficits are also likely to push up term premia If the scale of monetary tightening needed to contain inflation is greater than expected, there could be sharp falls in asset prices, which would depress economic growth through lower business investment and private consumption.

The housing boom

Canadian house prices have more than doubled in real terms since 2000, outpacing incomes and rents (Figure 13). Concerns around house price increases are concentrated on the Toronto and Vancouver markets (Figure 14). They are considered to be highly overvalued by the Canada Mortgage and Housing Corporation (CMHC), and price pressures have spilled over to the neighbouring markets of Victoria (British Columbia) and southern Ontario. Provincial governments have responded with policy measures to ease housing market pressures, notably the introduction of foreign buyers' transaction taxes for purchases in Vancouver (August 2016; rate raised and expanded geographically in February 2018) and Toronto (as part of the Ontario Fair Housing Plan, announced in April 2017). In each case these measures were followed by a period of weaker price appreciation. While this is a positive sign of market stabilisation, the resumption of price growth in Vancouver in 2017 raises the possibility that cooling in Toronto might also be temporary. National average house price growth was 4.5% in the year to May 2018, well down from the peak of over 14% in mid-2017 (Teranet and National Bank of Canada, 2018[18]).

Increasing demand has been a key driver of price growth, including speculative activity in the expectation of further gains. The CMHC estimates that demand-side factors such as low interest rates, higher incomes and population growth (primarily due to immigration) can explain 75% of Vancouver's price increases between 2010 and 2016, but only 40% of Toronto's. Foreign buying has also supported demand, notably in Vancouver, where in 2017 non-residents owned 4.8% of residential properties (3.4% in Toronto) (Gellatly and Morissette, 2017[19]).

Figure 13. House prices have grown rapidly relative to fundamental drivers



1. Nominal house prices deflated by the private consumption deflator.
2. Deviation of the latest observation Q4 2017 from the long-term average. The long-term average starts in Q1 1980 for most countries, with a few exceptions. The price-to-income ratio starts in Q1 1981 for Denmark, Q1 1986 for Korea and New Zealand, Q1 1987 for the United Kingdom, Q1 1995 for Portugal and Q1 1997 for Greece. The price-to-rent ratio begins in Q1 1986 for Korea, Q1 1988 for Portugal and Q1 1997 for Greece.
Source: OECD, *Economic Outlook database*.

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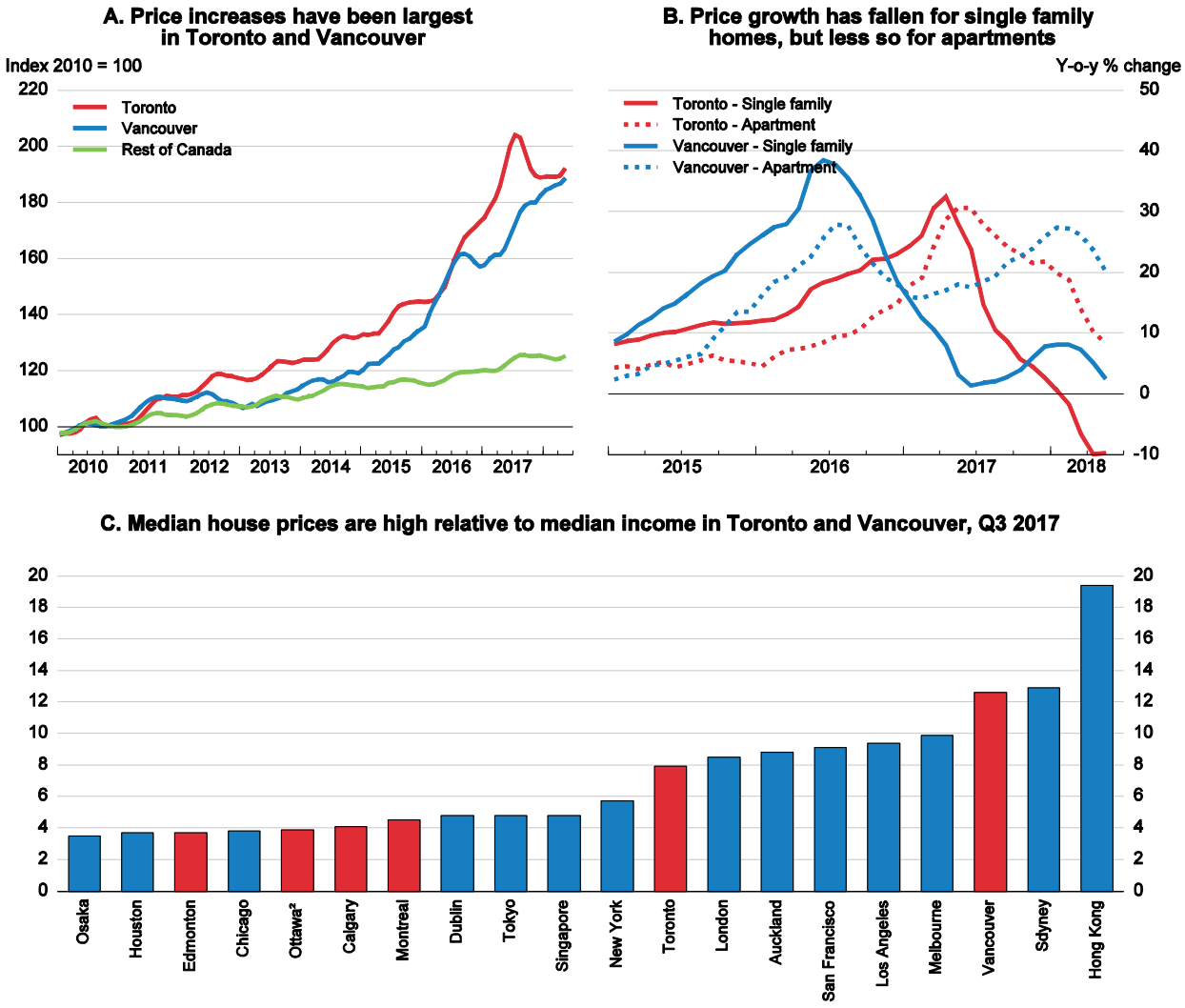
Housing supply responses have been weak in some large urban centres (Figure 15). In Toronto, housing completions have struggled to keep pace with household formation, the number of completed but unsold units has declined to one of the lowest levels ever recorded, and the condominium apartment vacancy rate is only 0.7% (CMHC, 2018[20]). Relatively weak supply responses to price increases in Toronto and Vancouver, due to

regulatory and physical constraints, meant that large price increases were needed to balance demand and supply, contributing to speculative activity by fuelling expectations of future price growth (CMHC, 2018[21]). Conversely, the stock of completed yet unsold units is at or above thresholds used to determine overbuilding in Calgary, Edmonton, Saskatoon and Regina (CMHC, 2018[20]).

Figure 14. House prices are particularly high in Toronto and Vancouver



1. Includes Gatineau.

Source: Teranet and National Bank of Canada, *House Price Index*; Canadian Real Estate Association, *MLS Home Price Index*; Demographia (2018), *14th Annual Demographia International Housing Affordability Survey: 2018*.

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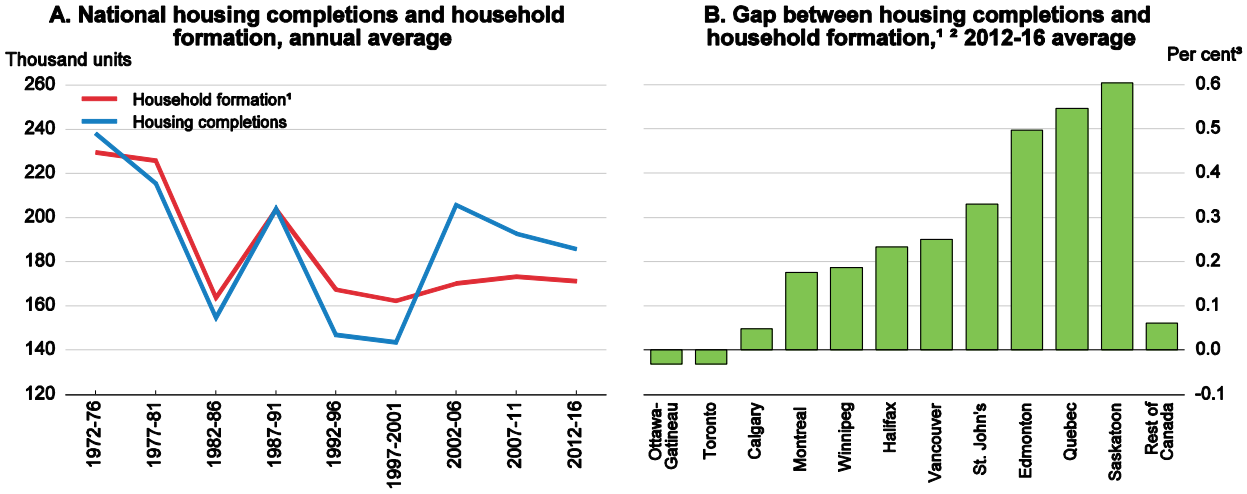
Related high household debt is an important economic vulnerability

Household debt has reached 170% of disposable income, high by international comparison (Figure 15, Panel A) and up from 100% two decades ago. High debt makes households more vulnerable to external shocks such as increases in interest rates or unemployment. The Bank of Canada has identified elevated household indebtedness as

the most important vulnerability for the Canadian financial system (Bank of Canada, 2017[22]). Debt-servicing costs have been held down by low interest rates but could reach levels not seen since at least 1990 with policy rate normalisation (Panel B). While most mortgages are issued on a recourse basis, vulnerability is heightened by mortgage rates that are rarely locked in for more than five years. Only 22% of loans with major banks will not face an interest rate reset for three years or more (Bank of Canada, 2017[22]). Banks are well-capitalised and protected by mostly public mortgage insurance, which covers more than half of outstanding mortgage debt, but this pushes substantial risk back onto the taxpayer: government-backed insurance coverage amounted to 36% of GDP in 2015 (Finance Canada, 2016[23]). The 2014 *Survey* first recommended reducing government exposure and moral hazard by tightening mortgage insurance to cover only part of lenders' losses (Table 9). The prevalence of mortgage insurance has declined recently, with over 80% of new mortgages in 2017 not requiring it, partly because more homes now exceed the CAD 1 million limit for government-backed insurance.

Figure 15. Housing construction has exceeded demand recently, but with considerable geographic variation



1. Household formation adjusted for 2016 Census undercount based on preliminary national undercount applied pro rata to estimates of undercount by Central Metropolitan Areas from the 2011 Census.
2. Household formation in Saskatoon, St John's, Québec City and Montreal adjusted for revised 2011 Census population estimates.
3. As a percentage of private dwellings in 2011.
Source: Office of the Parliamentary Budget Officer (2017), *Household Formation and the Housing Stock*, May 2017 Update, Figure 2.1; Statistics Canada, Table 027-0049 and 2011(/2016) Census; OECD calculations.

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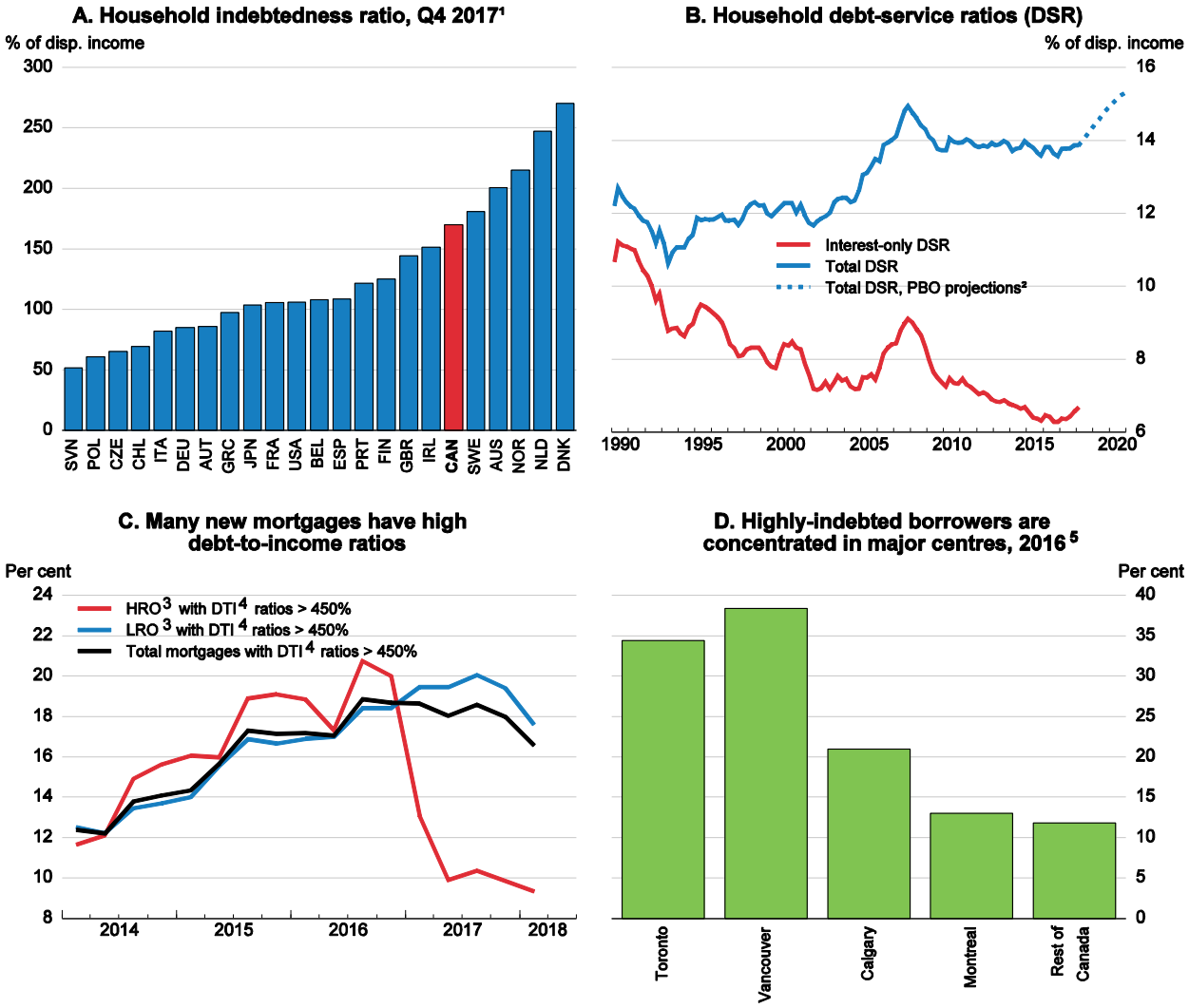
New mortgage holders in markets that have experienced strong price growth are particularly vulnerable. Many new mortgage holders -- especially in Toronto and Vancouver -- have loan-to-income ratios exceeding 350 or even 450% (Figure 16, Panels C and D), at which level the rate of arrears arising from a negative economic shock is more than ten times that for mortgagees with debt-to-income in the 100-250% range (Cateau, Roberts and Zhou, 2015[24]). Aggregate household debt is concentrated among middle-income groups. For recent mortgages with a loan-to-value ratio of no more than 80% the share with a high loan-to-income ratio is greatest among borrowers with lower incomes (Bank of Canada, 2017[22]).

Figure 16. Household debt levels are high, particularly so among some new borrowers



1. Total household outstanding debt as a percentage of household gross disposable income. Q1 2016 for Japan, Q1 2017 for Norway and the United Kingdom, Q3 2017 for Austria, Chile, Czech Republic and Poland.
2. PBO projections for the debt service ratio have been adjusted down by 0.86 percentage points to reflect a change in the starting point for projections following revisions to historical data and new data available up to the first quarter of 2018.
3. High-ratio originations (HROs) are new mortgages with a down payment of less than 20%, for which mortgage insurance is mandatory. Low-ratio originations (LROs) are new mortgages with a down payment of 20% or more.
4. Debt-to-income ratio.
5. Share of new low-ratio loans with debt-to-income ratio above 450%.
Source: OECD, *National Accounts - Household Dashboard database*; Statistics Canada, Table 380-0073; Office of the Parliamentary Budget Officer (2017), *Household Indebtedness and Financial Vulnerability*, Chart 1; Bank of Canada (2018), *Financial System Review*, June, Chart 4.

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Macro-prudential measures have mitigated risks

A series of macro-prudential measures adopted since 2008 have sought to lower housing-market risks. The most important of these for insured loans were tightening loan-to-value

caps (from 100 to 95% for the first CAD 500 000 and 90% for the next CAD 500 000 of new mortgages, and from 95 to 80% for refinancing), with a debt-servicing "stress test" against a standardised rate (Table 9). The household debt-to-income ratio could have been close to 200% as of late 2016 (rather than the actual 167%) without these measures (Krznar, Arvai and Ustyugova, 2017[25]). Since 1 January 2018, banks have also been required to stress test debt servicing for uninsured mortgages. It is too early to tell how much this change will lower the incidence of highly indebted uninsured borrowers, as has already occurred for new borrowers with a down payment of less than 20% who must purchase insurance.

Table 9. Past OECD recommendations on addressing housing-market challenges

Recommendations in past *Surveys*	Actions taken since the previous *Survey*
Continue to tighten macro-prudential measures, and target them regionally, including through increasing capital requirements in regions with high house price-to-income ratios.	From October 2016 the Minister of Finance required all insured borrowers to qualify under maximum debt-servicing standards based on a "stress test" against the higher of the contracted mortgage rate or benchmark five-year fixed mortgage rate published by the Bank of Canada. Previously this requirement had applied only to variable-rate mortgages and those with terms of less than five years. In January 2018 the Office of the Superintendent of Financial Institutions set a new minimum qualifying rate stress test for uninsured mortgages based on the greater of the five-year benchmark rate published by the Bank of Canada or the contracted mortgage rate plus 2%. Federally regulated financial institutions are also required to establish and adhere to lower loan-to-value ratio limits in markets where prices have escalated to high levels relative to fundamentals.
Tighten mortgage insurance to cover only part of lenders' losses in case of default. Keep increasing the private-sector share of the market by gradually reducing the cap on the CMHC's insured mortgages.	No action taken. CMHC's share of the mortgage insurance market has declined from about 65% in 2014 to less than half.
Expand affordable municipal rental housing supply and densification by adjusting zoning regulations to promote more multi-unit dwellings.	The 2018 Homes for British Columbia programme includes plans to work closely with municipal governments to eliminate barriers to affordable housing and develop new tools, such as rental zoning.
Monitor the unregulated mortgage-lending sector more closely to improve understanding of risk exposures. Increase cooperation and information sharing between federal and provincial financial regulators.	Canadian authorities are continuously monitoring shadow-banking entities, including through their participation in the Financial Stability Board's information-sharing exercises.
Continue efforts to legalise and encourage secondary suites and laneway housing in single-family residential zones. Remove property-tax-rate differentials that disadvantage multi-unit rental properties relative to owner-occupied housing.	The Ontario Planning Act requires municipalities to allow for secondary suites within single-detached, semi-detached and townhouse dwellings, and the Ontario Building Code was revised in 2017 to reduce the cost of construction of new two-unit homes. The City of Ottawa passed legislation to allow construction of secondary dwellings, and the City of Toronto held consultations on laneway housing proposals in late 2017.
In areas of rapid house price appreciation, increase incentives for private-sector development of rental housing in appropriate areas through tools such as development charge waivers, reduced parking requirements and expedited permit processing.	Some cities, including Edmonton and Ottawa, have reduced minimum parking requirements for urban development.

The government should monitor the effects of recent macro-prudential tightening, especially the prevalence of highly indebted, low-income borrowers, and stand ready to act if circumstances change. Should rapid house-price appreciation resume, further tightening may be needed. Moreover, the higher loan-to-value limit for the share of insured loans below CAD 500 000 is not directly related to the riskiness of the loan and should be brought into line with the limit for the portion above CAD 500 000 by adjusting one or both thresholds. As noted by the IMF (2017[6]), close coordination between federal and provincial authorities is also critical: provincially regulated financial institutions should be encouraged to adhere to federal mortgage underwriting standards, and monitoring of systemic risks in, and linkages with, securities markets and provincially regulated institutions is needed.

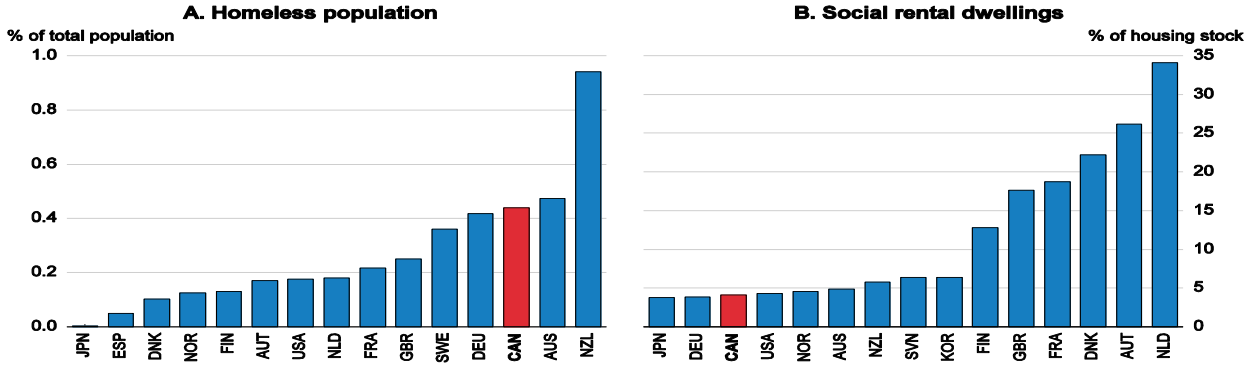
Shortages of affordable housing raise inclusiveness issues

Housing affordability has worsened steadily since 2009 (Bank of Canada, 2018[26]). Compared with homeowners, a greater share of renters spend 30% or more of their income on housing, and rents have increased by 8% in real terms over the past decade (CMHC, 2017[27]). Canadians spend more of their disposable income on housing than residents of most OECD countries (OECD, 2017[28]). As of 2016, 1.7 million or 12.7% of households were estimated to be in "core housing need" (Statistics Canada and CMHC, 2017[29]). As described in the 2014 *Survey*, the lack of affordable housing creates serious challenges for low-income households, particularly those living in the major cities that have seen the greatest increases in house prices and rents.

Government programmes to assist with housing needs form a complex and often confusing patchwork, with most falling under either social or affordable housing (Office of the Auditor General of Ontario, 2017[30]). Social housing has not expanded significantly since the early 1990s, and much of the stock is ageing and needs repair and maintenance (Figure 17). Rents are set at a fixed share (generally close to 30%) of income, which represents a generous subsidy for those in urban areas with high rents. These factors have led to severe shortages in major centres, with a predicted queue of up to 14 years for recent applicants in high-demand Ontario locations (ONPHA, 2016[31]). Joint federal-provincial affordable-housing programmes aim to support low-income households through measures including grants for the construction of affordable rental units and rent subsidies. Affordable housing has been the major focus of initiatives in recent years, for example in Ontario where there are a number of programmes aimed at improving housing availability and affordability. The National Housing Strategy, launched in November 2017, provides CAD 40 billion over 10 years to construct 100 000 new housing units, repair 300 000 existing units, enhance rental-construction financing and provide housing allowances to needy households.

Figure 17. Homelessness is high and social housing stocks are low

2015 or latest year available



Source: OECD, *OECD Affordable Housing database*, http://www.oecd.org/social/affordable-housing-database.htm.

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This Strategy is projected to help up to 530 000 Canadians, but inequity between those with access to social housing and those without will continue. Construction of new units under the plan will be insufficient to eliminate waiting lists. Periodically reviewing tenure in social housing based on income would ensure that social housing goes to those who need it most, as would prioritising placement of applicants with the greatest needs in

Ontario (where, apart from victims of domestic abuse, social housing is provided on a first-come first-served basis). New rental allowances should be based on a norm and not actual rent (coupled with minimum housing standards) to avoid overspending and should take into account implications for labour-force participation.

Fiscal sustainability

Fiscal policies are sustainable overall, but not for all levels of government

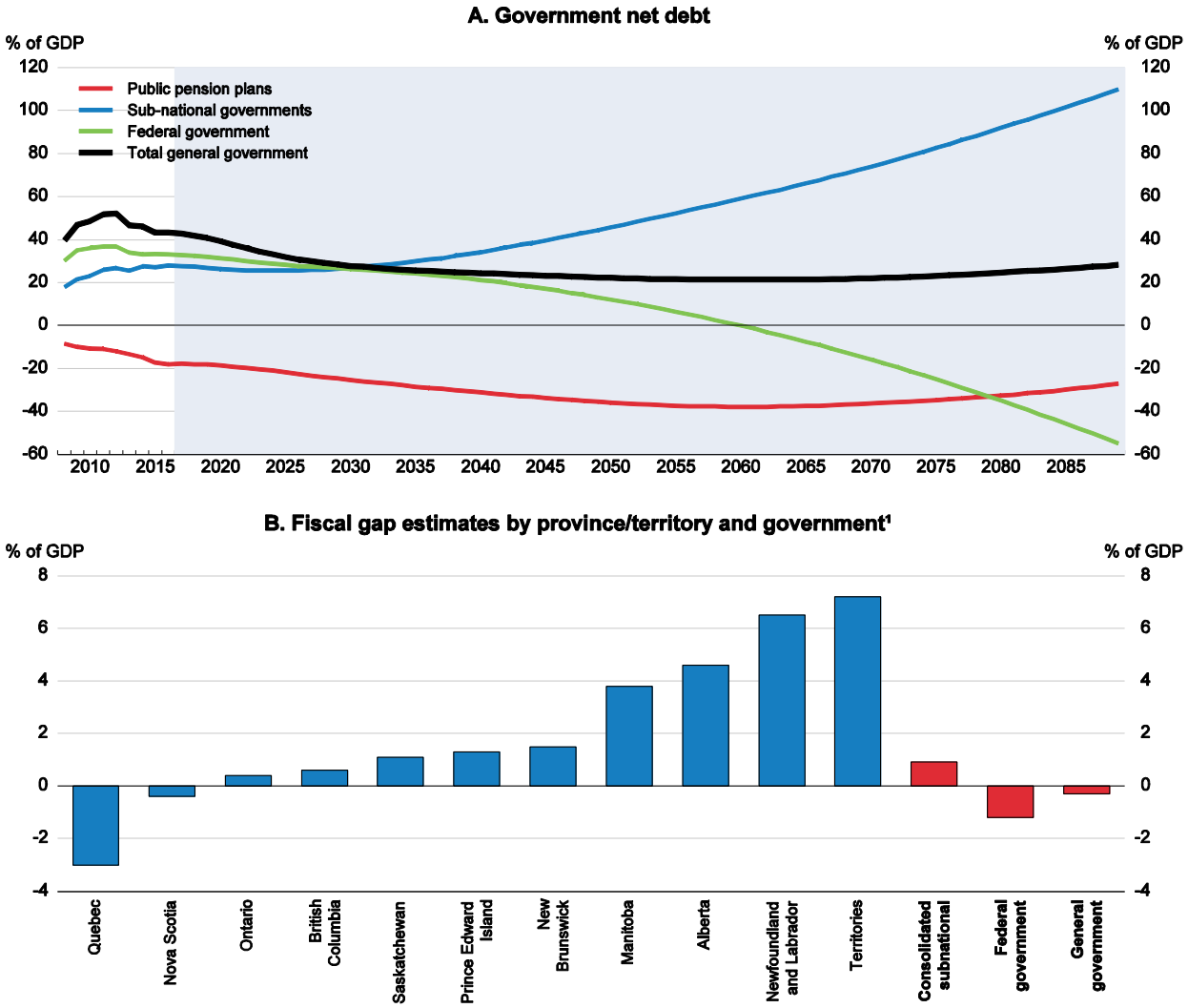
The Parliamentary Budget Officer (PBO) (2017[32]) estimates that, for all levels of government combined, Canada's fiscal policies are sustainable for at least several decades – on current policies, government net debt is projected to decline somewhat relative to GDP over the next four decades and then to rise slowly but remain below the current level (Figure 18, Panel A). This means that significant changes in tax or expenditure levels relative to GDP are not needed for long-term debt sustainability – tax levels are slightly higher than needed to finance expenditure and hold the debt-to-GDP ratio unchanged over the long run: the overall fiscal gap is minus 0.3% of GDP (Panel B). Having sustainable fiscal policies may increase economic efficiency by smoothing taxes and/or the marginal benefit cut-offs for government expenditure over time.

However, overall sustainability reflects continuously declining net debt as a share of GDP at the federal level and ever rising debt at the provincial/territorial level. The federal fiscal gap is -1.2% of GDP while the consolidated provincial/territorial gap is 0.9% of GDP; taking into account Ontario's expansionary FY 2018-19 budget, which was released after these projections, the sub-national government fiscal gap would now be around 0.3% of GDP higher. Fiscal gaps range from -3% of GDP in Québec, where the government is cutting its high net debt-to-GDP ratio (Table 10), to 6.5% of GDP in Newfoundland-Labrador, which, like Alberta, is having to adjust to the post-2014 decline in oil prices.

One cause of provinces' difficulties is rising health-care costs, even when, as in these projections, excess cost growth (i.e., growth exceeding the sum of nominal GDP growth and that due to population ageing) is assumed to be zero; it averaged 0.3 percentage point per year over 1982-2015. In this projection, health-care costs rise as a share of GDP because of population ageing. Provinces with the largest increase in the old-age dependency ratio will also experience the largest declines in the Canada Health Transfer (CHT) from the federal government as a share of health-care costs (Table 11). This is because the CHT, like other federal transfers, is not adjusted for provinces' age structures, contrary to recommendations in past *Surveys* (Table 12). However, age is only one factor, albeit an important one, that influences a province's need or ability to provide services. To help provincial and territorial governments support home care and mental health, the federal government confirmed an allocation of CAD 11 billion over 10 years to this end in the 2017 budget.

The PBO (2018[33]) estimates that if the CHT were to grow in line with projected health expenditure in each province and the territories (combined), the federal fiscal gap would deteriorate by 0.3 percentage point and the sub-national fiscal gap would improve by the same amount. Across provinces and territories the improvement would range from 0.1 percentage point in British Columbia to 0.7 percentage point in Newfoundland and Labrador and Prince Edward Island. In this scenario, the federal government would continue to have a substantial negative fiscal gap (taxes are higher than needed to finance expenditures and stabilise the debt-to-GDP ratio), while most sub-national governments would continue to have positive gaps, albeit smaller to varying degrees.

Figure 18. Government sector net debt and fiscal gap estimates over the long term



1. Fiscal gaps in 2016 for each province and the territories are expressed relative to their corresponding provincial/territorial GDP. The consolidated subnational fiscal gap is expressed relative to the national GDP.
Source: Office of the Parliamentary Budget Officer (2017), *Fiscal Sustainability Report 2017*, Summary Figures 1 & 2, http://www.pbo-dpb.gc.ca/web/default/files/files/files/FSR_2015_EN.pdf.

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Table 10. Provincial government long-term baseline scenario

	Health expenditure			Primary balance			Net debt			Canada Health Transfer			Senior dependency ratio		
	% of GDP									% health expenditure			% population 65+/15-64		
	2016	2091	Change	2016	2091	Change	2016	2091	Change	2016	2091	Change	2016	2091	Change
NL	9.3	15.7	6.4	-4.5	-7.9	-3.4	36.6	1293.1	1256.5	18.6	9.3	-9.3	28.6	75.3	46.7
NS	10.0	15.4	5.4	4.0	-0.5	-4.4	28.4	-34.5	-62.9	23	16.7	-6.3	29.2	63.5	34.3
PE	10.3	15.3	5.1	1.3	-4.0	-5.3	33.3	169.5	136.2	22.4	14.3	-8.1	28.9	56.9	28.0
NB	9.3	14.1	4.8	-0.7	-1.0	-0.3	37.8	276.2	238.4	23.9	18.2	-5.7	29.7	63.9	34.2
QC	8.2	11.1	2.8	3.8	4.9	1.1	47.1	-368.0	-415.1	25.6	23.0	-2.6	27.2	48.3	21.1
ON	6.9	9.4	2.5	0.7	-0.9	-1.6	36.4	83.5	47.1	25.2	17.6	-7.6	24.2	48.1	23.9
MB	9.3	11.7	2.3	-0.7	-5.8	-5.2	35.4	385.2	349.8	20.7	14.4	-6.3	22.7	40.6	17.9
SK	7.2	8.3	1.0	-2.7	-1.5	1.3	11.1	119.1	108.0	20.7	15.0	-5.7	22.5	44.8	22.3
AB	6.9	8.8	1.9	-5.6	-5.1	0.5	1.1	323.3	322.2	20.1	15.4	-4.7	17.1	36.4	19.3
BC	7.4	9.1	1.7	0.7	0.2	-0.5	7.4	73.3	65.9	24.2	24.3	0.1	26.5	47.8	21.3

Source: Office of the Parliamentary Budgetary Officer (2017), *Fiscal Sustainability Report 2017*, Ottawa; OECD calculations.

Table 11. Factors related to differences in long-term spending pressures across provinces

Correlation coefficients

	Health expenditure % of GDP	Senior dependency ratio	CHT share of health expenditure	Primary balance % of GDP	Fiscal gap % of 2016 GDP	Net debt % of GDP
Health expenditure ,% of GDP	1.0					
Senior dependency ratio	0.9	1.0				
CHT share of health expenditure	-0.6	-0.6	1.0			
Primary balance, % of GDP	-0.6	-0.3	0.6	1.0		
Fiscal gap, % of 2016 GDP	0.2	0.3	-0.5	-0.3	1.0	
Net debt, % of GDP	0.4	0.6	-0.6	-0.3	0.9	1.0

Source: Office of the Parliamentary Budgetary Officer (2017), *Fiscal Sustainability Report 2017*, Ottawa; OECD calculations.

There also remains considerable scope to implement past *Survey* recommendations to reduce costs by boosting the health system's efficiency (Table 12). Recent analysis of one of these recommendations – revising the core public health insurance scheme to include essential pharmaceuticals – suggests that there are substantial savings and equity gains to be made, albeit mainly to the benefit of households rather than governments (Box 3). The federal government recently announced the creation of an Advisory Council on the Implementation of National Pharmacare and the Ontario government announced that its youth pharmacare plan would be extended to seniors from August 2019. The federal government is also working with provincial governments through the Pan-Canadian Pharmaceutical Association to negotiate lower prices on prescription drugs.

Concerning the remaining part of general government - the funded second-pillar public pension schemes (Canada Pension Plan (CPP) and Québec Pension Plan (QPP)) - PBO (2017[32]) provides a number of sensitivity analyses that support the qualitative conclusion that they are sustainable (Figure 18, Panel A). One risk not analysed in PBO (2017[32]) is that returns on equities, which account for 85% of the benchmark risk-parity portfolio, may be lower than assumed, given current high valuations. If equity returns were to be 0.75 percentage point lower, there would be a deficit of 0.1% of GDP (equivalent to 4.3% of annual contributions). That said, the Chief Actuary has done extensive sensitivity

analysis of the rate of return used to assess the sustainability of the CPP over the next 75 years.

Table 12. Past OECD recommendations on federal transfers to provinces and health care

Recommendations in past *Surveys*	Actions taken since the previous *Survey*
Factor in interprovincial differences in age structure when calculating federal transfers to provinces.	No action taken.
Eliminate zero patient cost sharing for core services by imposing co-payments and deductibles.	No action taken.
Clarify the Canada Health Act to facilitate private entry in hospital services and mixed public/private physician contracts.	No action taken.
Replace historical-based cost budgeting of Regional Health Authorities (RHAs) with a formula-based approach.	No action taken.
Devolve integrated budgets for hospital, physician and pharmaceutical services to RHAs.	No action taken.
Increase the use of capitation or salary for physician compensation, and have RHAs regulate fees.	No action taken.
Move to activity-based budgets for hospital funding, contracting with private and public hospitals on an equal footing. Adjust overall budget caps up to reward efficiency.	The three largest provinces (i.e. Ontario, Québec and British Columbia), representing over two-thirds of the population, have either implemented or announced future implementation of some activity-based hospital funding.
Revise the public core package to include essential pharmaceuticals and eventually home care, selected therapy and nursing services.	Since 1 January 2018, children and youth up to 24 years old in Ontario have free prescription drug coverage, regardless of family income. As part of federal budget 2018, the government announced the creation of an Advisory Council on the Implementation of National Pharmacare. The Ontario government announced in its 2018 budget that its pharmacare plan, which currently benefits people aged 24 and under, will be extended to people aged 65 and over from August 2019.
Regulate private health insurance (PHI) to prevent adverse selection, and remove tax exemptions for employer-provided private health-insurance benefits.	No action taken.

Box 3. Moving to a national pharmacare programme

Health-care costs could be reduced by extending access to publicly subsidised pharmaceuticals. Outside of Québec, public pharmacare programmes are limited to seniors and those on low incomes and, since January 2018 in Ontario, to children and youth. The Office of the Parliamentary Budget Officer (2017[34]) estimates that, had a universal national pharmacare programme been in place in FY 2015-16, the covered pharmaceutical expenses would have been CAD 4.2 billion (17%) lower (Table 13). Savings would have come predominantly from having a single purchaser and universal application of generic drug substitution; potential savings from moving from multiple administrators of drug benefit claims to a single administrator were not taken into account. Taking into account net co-payments and existing federal drug spending for certain populations and assuming that the Canada Health Transfer is reduced by provincial-territorial government savings, social security contributions would need to rise by CAD 8.0 billion to cover this federal expenditure. In this scenario all of the national savings would be allocated to households in the long run. Such a reform would also substantially reduce the proportion of Canadians (12%) unable to obtain necessary drugs because of their cost. The private-public pharmacare system in place in Québec also increased drug access but did not reduce taxpayer-financed drug expenditures and substantially increased expenditure by employers and households (Morgan et al., 2017[35]).

Table 13. Provincial government long-term baseline scenario

	CAD billion, FY 2015-16
Eligible pharmaceutical expenditure	24.6
of which	
Governments	11.9
Private insurance plans	9.0
Patients	3.6
Same package, national pharma-plan	20.4
National savings	4.2
Federal cost of national pharma-plan	
Gross cost	20.4
Existing programmes for selected groups	0.6
Net co-payments	0.4
Net cost	19.3
less	
Provincial/Territorial savings	11.3
Required increase in social security contributions	8.0
Private-sector savings	
Private insurance plans	9.0
Patients	3.6
Net co-payments for the national programme	-0.4
Increase in social security contributions	-8.0
Total private-sector savings	4.2

Source: Parliamentary Budgetary Officer (2017), *Federal Cost of a National Pharmacare Program*, Ottawa; OECD calculations.

Inclusiveness for women, youth and seniors

There is considerable scope to increase inclusiveness for women, youth and seniors through policy measures to improve their labour market outcomes (Chapter 1). Improving labour market inclusion of Indigenous Peoples in Canada is another way to boost labour force participation and well-being (Box 4).

Further steps are needed to narrow the gender wage gap

The total annual gender earnings gap among women who work full time, at 18% in 2016, is considerably larger than the OECD average, reflecting a large gender gap in hours worked, which in turn is partly attributable to Canadian women's higher labour force participation rate than the OECD average (see Chapter 1). On an hourly basis, full-time working women earned 12% less than men. Around a third of the gap is estimated to reflect differences in observable characteristics such as education, occupation and industry of work (Schirle, 2015[36]). An important factor contributing to the wage gap is women's under-representation in top-earning management and leadership positions, in part due to challenges faced by mothers in reconciling work and childcare responsibilities in jobs at the top of the earnings distribution (Fortin, Bell and Böhm, 2017[37]).

Providing better access to high-quality, affordable early childhood education and care (ECEC) is the best way to address the large gender wage gap and boost female labour participation. Just over half of the earnings penalty experienced by Canadian mothers can

Box 4. Achieving labour force potential and improving the well-being of Indigenous Peoples

Socio-economic outcomes for Indigenous populations are worse on average than for other Canadians on a number of measures (Table 14). The extent of disadvantage varies across Indigenous groups: the gap with non-indigenous life expectancy ranges from around five years (First Nations and Métis) to more than 10 years (Inuit) (Chief Public Health Officer, 2016[38]), while the deficit in median after-tax incomes is 32% for the First Nations population, 24% for Inuit and 7% for Métis (Statistics Canada, 2017[39]). The relative youth and untapped labour-force potential of Indigenous peoples in Canada offers an opportunity, with a fifth of labour-force growth in the next 20 years estimated to come from Indigenous populations if the labour-force participation gap with other Canadians were to close (Drummond et al., 2017[40]).

As highlighted in the 2016 *Survey*, the federal government has appropriately made improving outcomes for Indigenous peoples a priority. Additional funding of almost CAD 5 billion over five years was allocated to improve the quality of life of Indigenous Peoples in the 2018 budget, with a focus on skills development, health, housing and child and family services. Building in programme-evaluation mechanisms at the outset is important to ensure that real progress is made, particularly if interventions are designed to make subsequent assessment as simple as possible through identification of control groups. A concurrent review of Indigenous employment and skills strategies recommends continuing work on better aligning federal and provincial Indigenous labour market programmes, seeking opportunities to enhance Indigenous skills training through targeted work experience programmes, as well as exploring how to expand access to higher education to support Indigenous students and increase employment in knowledge-intensive sectors (OECD, 2018 forthcoming[41]).

Table 14. Selected socio-economic outcomes for Canadian Indigenous Peoples, 2016

	Indigenous Peoples	Others
Number in millions (% share)	1.67 (4.3%)	
Per memorandum Indigenous in Australia	0.65 (2.8%)	
Per memorandum Maori in New Zealand	0.72 (15.4%)	
Demographics		
Average age (years)	32.1	40.9
% aged 0-24	43.7	29.2
Housing conditions		
% in crowded dwellings	18.3	8.5
% in dwellings in need of major repair	19.4	6.0
Education		
% without a high school diploma	25.6	10.8
Employment outcomes		
% employed, 25-54 (2017)	70.3	82.7
Income		
Median after-tax income (CAD)	24 277	31 144
Health outcomes (2011-14 average)		
% self-rated very good or excellent, 25-44	51.5	67.0
% daily smokers	36.1	16.7
% heavy drinkers	31.1	24.0

Source: Statistics Canada, *2016 Census*; Statistics Canada, *Labour Force Survey*; Statistics Canada, 'Health Indicator Profile, by Aboriginal Identity, Age Group and Sex', Table 105-0512.

be explained by fewer years of work experience and more hours devoted to unpaid work (Vincent, 2013[42]). Québec's experience with low-fee childcare is consistent with international evidence that affordable ECEC supports female participation, with one study finding this was sufficient to more than offset the upfront fiscal cost (Fortin, Godbout and St-Cerny, 2013[7]). ECEC is also important for child development: international studies, programme evaluations and quality measurements have repeatedly shown that access to ECEC programmes has positive effects on children's well-being, learning and development (OECD, 2017[43]). The quality of care is critical, however, as low-quality ECEC can have detrimental effects on development and learning. Outcomes in Québec illustrate the importance of quality childcare, as high-quality public *garderies* improved cognitive and behavioural development even while behavioural development was dragged down by lower-quality care among some providers. Recent federal and provincial ECEC-boosting initiatives are promising, but even more needs to be done, with cross-country estimates indicating scope for a large lift to female employment from increasing ECEC spending to match that in leading OECD countries. Illustrative estimates of the long-term effects of this and other structural reforms discussed in this Survey on GDP per capita are shown in Box 5.

As Canada's ECEC expands, quality should be prioritised to realise child development benefits. Regulatory oversight capacity needs to expand alongside service provision, in particular for family (as opposed to centre-based) daycare. Data and monitoring can be a powerful lever to encourage ECEC quality, with implementation of quality monitoring and rating improvement systems internationally associated with better staff-child interaction (OECD, 2018[44]). Development of a professional workforce is also critical. Linking teacher evaluation to training decisions, as in Korea, is a valuable way to encourage professional development, as in-service training stands out as a key driver of better child development and learning outcomes.

Encouraging fathers to increase their take-up of parental leave would also help to reduce the gender wage gap. The federal government announced an additional five weeks (or eight weeks at a lower payment rate) of non-transferable parental benefits for second parents in its 2018 budget, which over time should reduce the big gender difference in time spent on childcare activities (Figure 19). Fathers who take leave are more likely to take an active role in childcare both early on and after they return to work, and gender differences in time spent on paid work are smaller in countries where such differences in unpaid work are smaller. Take-up should be supported through information provision, leading by example in the public service and, if necessary, increasing payment rates for parental benefits. A 2017 change to parental leave that allows a longer leave period of 18 months, paid at a lower replacement rate of 33%, is less positive, as only the well-off are likely to be able to afford such a big income loss and it carries the risk of weakening some women's labour force attachment.

The federal government also intends to introduce pay-equity legislation for its civil servants, workers in federally regulated sectors and any contractors bidding for public procurement jobs over CAD 1 million. While this is a worthwhile aim, in practice it is difficult to objectively evaluate the value of different types of work, and similar provincial schemes have had mixed success. The federal government is also subjecting all policy changes to a new "gender results framework" and will by law require gender-based analysis of future budgets. It is thus asking Statistics Canada to generate the relevant data.

Box 5. Simulation of the potential impact of structural reforms

The potential impact of some of the structural reforms proposed in this and the 2016 *Survey* can be gauged using simulations based on historical relationships between reforms and growth outcomes across OECD countries. Given that the simulations abstract from detail in the policy recommendations and do not reflect Canada's particular institutional settings, the estimates should be seen as purely illustrative. The policy changes that are assumed (Table 15) are based on comparing Canada's current policy settings with those of leading OECD countries.

Table 15. Potential impact of structural reforms on GDP per capita after 10 years

	Change in GDP per capita	Impact on supply-side components		
		Multifactor productivity	Capital–Labour ratio	Employment rate
Product market regulation	Per cent	Per cent	Per cent	Percentage points
(1) Liberalise power generation and distribution	0.5	0.4	0.1	0.1
Labour market policies				
(2) Increase spending on effective active labour market measures	0.5	0.2		0.2
(3) Increase government support for childcare	1.0			0.7
(4) Increase the retirement age	0.2			0.2
Total	**2.3**			

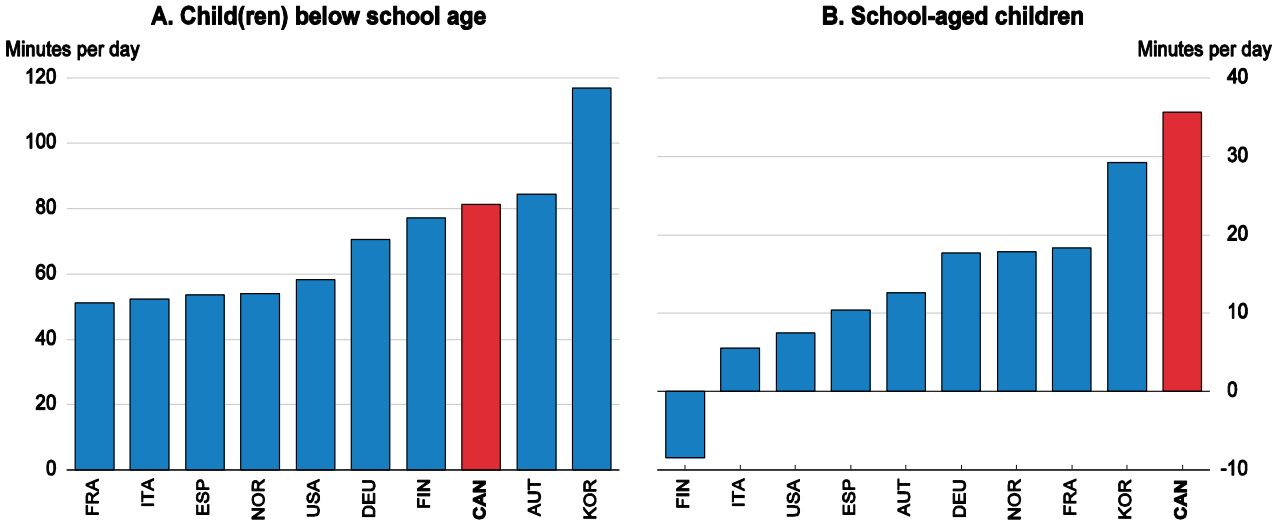
Note: Illustrative policy changes assumed for each measure are as follows: (1) The OECD measure of regulation in energy, transport and communications is lowered from 1.72 to 1.56 by reducing vertical integration and increasing competition; (2) spending on active labour market policies per unemployed worker as a share of GDP per capita is increased from 5.9% to 8.9%, halving the gap with the OECD median of 11.8%; (3) government support for childcare is increased from approximately 0.6% of GDP to 1.1% of GDP, matching spending in the province of Québec and at the 80th percentile of 20 OECD countries included in the analysis in Figure 1.8 in Chapter 1; and (4) the statutory retirement age is increased by 1 year.
Source: OECD calculations based on B. Egert and P. Gal (2017), "The Quantification of Structural Reforms in OECD Countries: A New Framework", *OECD Economics Department Working Papers,* No. 1354.

Improving labour-market information and skills development would support inclusiveness among young Canadians

Fragmented labour-market information has contributed to a high rate of qualifications mismatch (Figure 20, a situation that is liable to worsen with rapid changes in future workforce needs. The objectives of a number of new federal and provincial initiatives to improve labour-market information should be clearly defined to avoid duplication and overlap. The cross-jurisdictional Labour Market Information Council, created in April 2017, should, with full support from the provinces and territories, build on the national Job Bank website to develop detailed, nationally consistent information on numbers of students, feedback on course quality and detailed labour-market outcomes by specific course of study and institution.

Figure 19. Canadian men spend less time on childcare activities than their female spouses[1]

Difference in time spent on childcare activities, by youngest child's age, in minutes per day



1. Data for partnered men and women (those who live in the same household as a spouse or cohabitating partner, married or not) in couples with a female partner aged 25-45, only. Pensioners and students excluded. Data restricted to "carers", i.e., mothers and fathers who are engaged in at least one childcare activity during a time-use diary day.

Source: OECD (2017), *The Pursuit of Gender Equality: An Uphill Battle*, Figure 15.2.

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Skills development should be prioritised to promote adaptability to changes in future labour market needs and arrest declining skills among youth and weak wage growth among young males with low educational attainment. Canadian young people's science, literacy and numeracy skills are generally strong, but skill levels have declined recently among those aged 16 to 24 (Mahboubi, 2017[45]). Skills development should continue to occur through school-based education and adult-learning programmes, with a particular focus on students from disadvantaged backgrounds.

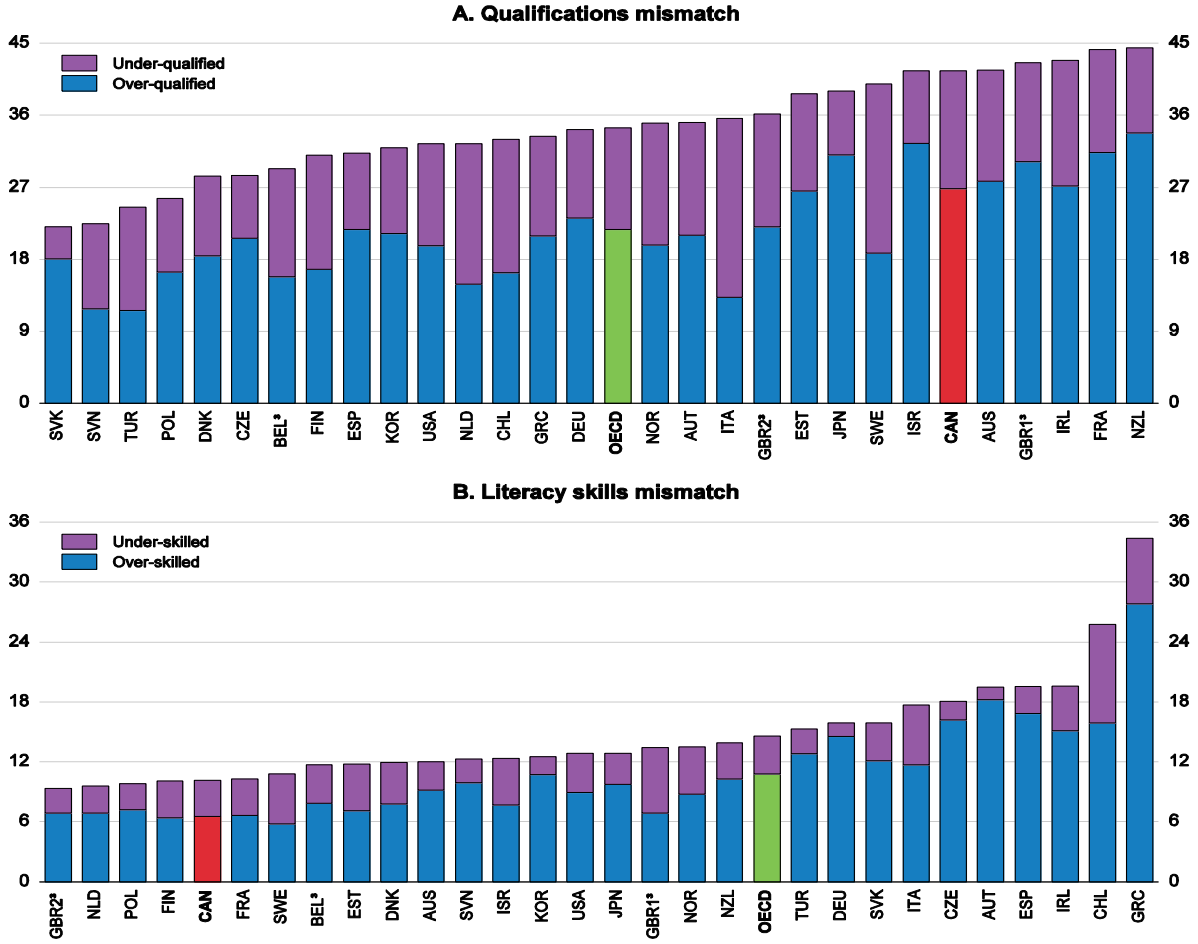
Later retirement should be supported by measures to promote skills and retention of older workers

Employment rates for Canadians aged 55 and over are slightly above the OECD average, with substantial room to improve in comparison with leading OECD countries such as Iceland, New Zealand and Sweden. Increasing the normal retirement age would increase employment of older Canadians who choose to work longer, boosting growth and their incomes while also delivering budgetary savings. Life expectancy at 65 has increased by over 3½ years over the past 30 years and is projected to increase by another 2½ years by 2050 (Office of the Chief Actuary, 2017[46]). As life expectancy lengthens, increases in the effective retirement age are being restrained by the clustering of retirements around 60 and 65, the respective eligibility ages for the Canada and Québec Pension Plans and basic public pensions (Figure 21). Indexing the age of eligibility to life expectancy, as some other OECD countries have done, is a way to gradually change social norms around retirement timing while depoliticising future pension-eligibility decisions. Indexing may be incomplete, for example by fixing the share of an average lifetime spent in retirement.

Other retirement-age-related rules (for example, in the tax system) would also need to be adjusted for later pension eligibility.

Figure 20. Qualifications mismatch[1] is large

Percentage of mismatched workers, by type of mismatch, 2012 and 2015[2]



1. Qualifications mismatch occurs when a worker has a higher or lower level of qualification than is required for his/her job. Skills mismatch occurs when a worker's skills are higher than the 90th percentile or lower than the 10th percentile of workers with self-reported well-matched skills.
2. Data correspond to 2012 for countries participating in the first round of the Survey of Adult Skills: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Korea, Netherlands, Norway, Poland, Slovak Republic, Spain, Sweden, United States and United Kingdom. Data correspond to 2015 for countries participating in the second round of the Survey of Adult Skills: Chile, Greece, Israel, New Zealand, Slovenia and Turkey.
3. Data indicated as Belgium correspond to Flanders; GBR1 = England and GBR2 = Northern Ireland.
Source: OECD (2016), *Skills Matter: Further Results from the Survey of Adult Skills*, Annex A, Tables Chapter 5 – Table A5.7; *OECD Survey of Adult Skills (PIAAC) database* (2012 and 2015).

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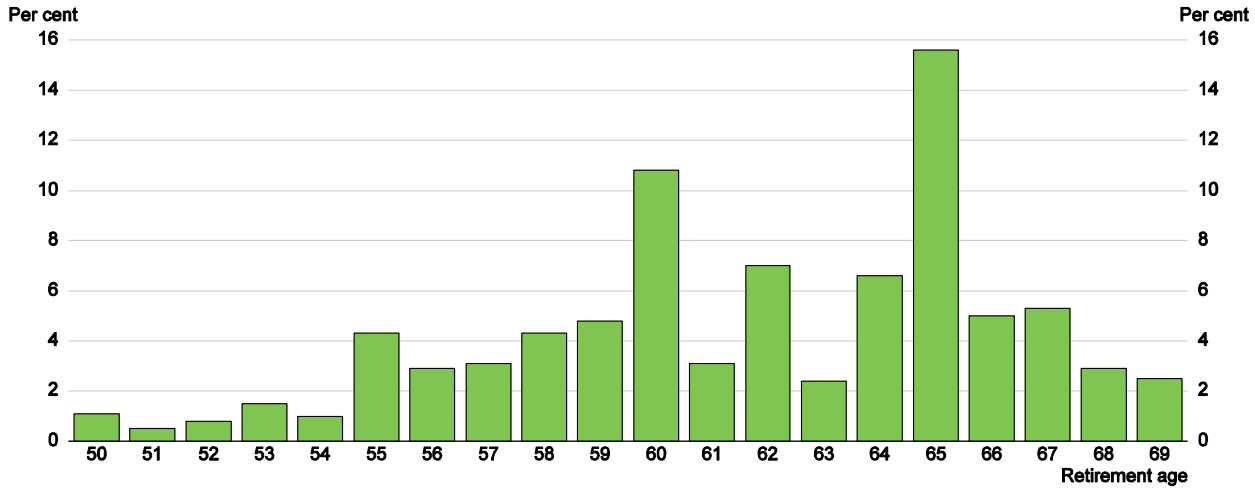
Figure 21. The age distribution of retirement was concentrated around 60 and 65 in 2014



Source: Finance Canada.

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The effect of increasing retirement ages on lower socioeconomic groups needs to be monitored, as these people may face challenges with working longer and often have lower life expectancy. In particular, manual workers may be physically unable to work longer. While further increases in automation and mechanisation are set to make this less common, it is important to ensure that disadvantaged older workers have access to retraining and job opportunities, with adequate safety net provisions such as disability benefits as a fall-back. In terms of income distribution, although increasing the retirement age tends to widen inequality in total pensions between low and high earners (due to differences in life expectancy), this effect is small when accompanied by increases in life expectancy (OECD, 2017[47]). Fortunately in Canada, unlike in the United States, recent increases in life expectancy at age 65 have been larger for those with low incomes.

Governments can assist those choosing to work longer through supporting life-long learning and flexible work arrangements for seniors. Literacy, numeracy and digital skills are high among Canadians aged 55 to 64 and decline less across age groups than in most OECD countries, but digital skills are still far better among younger generations (OECD, 2016[48]). Canadians' participation in adult education and training is also above average overall but decreases with age and is much lower for those with low literacy skills (OECD, 2017[49]). Measures to increase lifelong learning, such as the recently announced Skills Boost initiative, should therefore focus on ensuring that those with lower skills have access to sufficient training opportunities, particularly as digital skills become more important. Anti-discrimination legislation and information campaigns regarding the potential employer benefits from experienced employees are also useful to support demand for older workers. Effective tax rates close to or above 100% on employment income for low-income seniors should be eliminated by reforming phase-out provisions in provincial income-supplement schemes, though the labour-market benefits will be limited, given the small number of people affected and their weak attachment to the workforce.

Further increases in basic pensions would curb old age poverty

Relative poverty rates among Canadians over 65 are low by international comparison but have nearly tripled since the mid-1990s. A key factor has been the failure of minimum public pension payments (indexed to the CPI) to keep up with median wage growth (Shillington, 2016[50]). Further falls in the replacement rates from public pension payments will be felt most acutely by low-income earners. The federal government needs to ensure that the fruits of economic growth are shared with low-income seniors through real increases in pension payments, either through further *ad hoc* increases or more generous indexing.

Initiatives to protect pensions during insolvency should avoid creating barriers to capital reallocation

Some seniors have suffered hardship because deficits in defined-benefit plans, unlike outstanding pension contributions, are not afforded super-priority over creditors during insolvency. This problem could be mitigated through strict funding rules for pension-plan liabilities (as in the Netherlands) and/or government-funded pension-guarantee schemes (as in Ontario and several OECD countries including the United States, the United Kingdom, Germany and Australia). Another alternative is to give greater priority to pension deficits during insolvency (as proposed in two private members' bills before the Canadian Parliament), but this needs to be balanced with risks of making defined-benefit plans too expensive to run through restricting credit supply. In any case, barriers to restructuring or firm exit should be avoided, as they would impede efficient capital reallocation and thus longer-term productivity growth (Adalet McGowan, Andrews and Millot, 2017[51]).

Better management of long-term care is needed to shrink waiting lists

In a recent survey of Canadians who needed help with their regular daily activities, 19% of them did not receive the assistance they needed because of costs, compared with 2–10% of respondents in most countries outside North America (Osborn et al., 2017[52]). Among acute-care hospital beds 15% are occupied by people who would be better off or would prefer to be at home or in community-based settings. A shortage of formal care puts heavy strain on carers, the majority of whom are women. There is scope to make greater use of user charging to fund an expansion in long-term care provision, as only two provinces currently take assets into account in assessing ability to pay.

Immigration policy

Immigration policy has economic, social and humanitarian goals

The main objectives of Canada's immigration policy are to promote economic development by selecting immigrants with high levels of human capital, to reunite families and to respond to foreign crises and offer protection to endangered people (IRCC, 2017[53]). The federal government sets annual admissions targets for permanent resident visas to achieve a pace and mix of immigration that is judged best to contribute to meeting these objectives. Economic-class principal applicants, who are selected for their skills, and their spouses and dependent children comprise the largest immigrant category (57%, of which two thirds are spouses and dependent children), followed by the family (28%) and refugee and humanitarian categories (15%) (Table 16). The share of economic-class immigration in the total has increased markedly since the early 1990s to

one of the highest levels among OECD countries (Figure 22 and Figure 23). In addition to the economic and social benefits of furthering the above objectives, immigration policy also enhances well-being by increasing cultural diversity and the variety of goods and services available and by strengthening understanding of diverse cultures, potentially improving international relations.

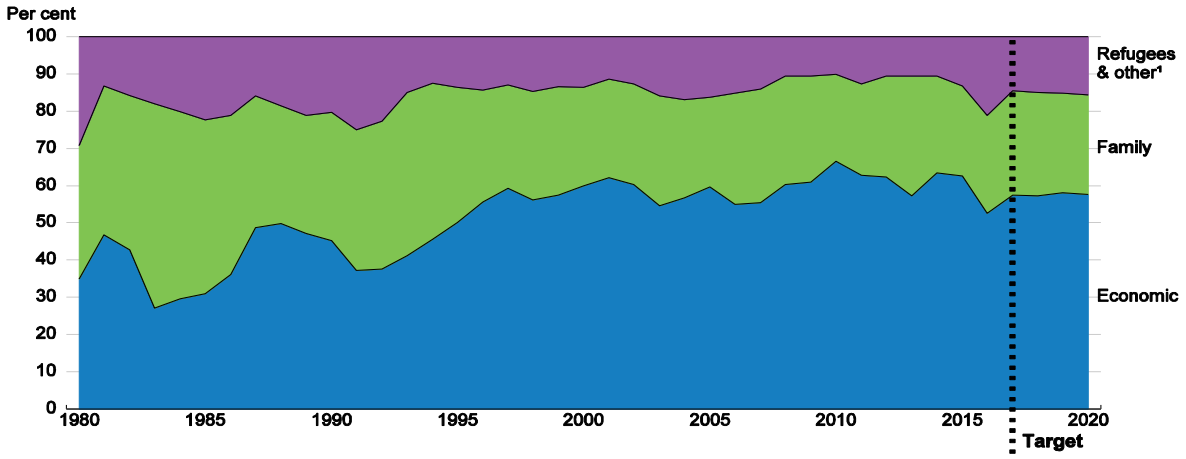
Table 16. Immigration levels

	2015	2016	2017	2018	2019	2020
	Admissions				Targets	
Economic						
Federal High Skilled[1]	68 795	59 999	73 700	74 900	81 400	88 000
Caregivers[2]	27 214	18 481	18 000	17 000	14 000	5 000
Provincial Nominee Program	44 535	46 169	51 000	55 000	61 000	67 800
Québec Skilled Workers and Business[3]	28 787	30 492	29 300	28 900	32 500	32 500
Other economic[4]	1 036	867	500	1 700	2 700	2 500
Total Economic	**170 367**	**156 008**	**172 500**	**177 500**	**191 600**	**195 800**
% total	62.7	52.6	57.5	57.3	58.1	57.6
Family						
Spouses partners children	49 996	60 944	64 000	66 000	68 000	70 000
Parents, grandparents	15 489	17 039	20 000	20 000	20 500	21 000
Total Family	**65 485**	**77 983**	**84 000**	**86 000**	**88 500**	**91 000**
% total	24.1	26.3	28.0	27.7	26.8	26.8
Refugees and Protected Persons, Humanitarian and Other	**35 969**	**62 361**	**43 500**	**46 500**	**49 900**	**53 200**
% total	13.2	21.0	14.5	15.0	15.1	15.6
Total	**271 821**	**296 352**	**300 000**	**310 000**	**330 000**	**340 000**

1. Includes Federal Skilled Worker Program, Federal Skilled Trades Program and Canadian Experience Class.
2. Includes admissions in the Caring for Children Class and the Caring for People with High Medical Needs Class, pilot programmes that replaced the Live-in Caregiver Program in late 2014.
3. Under the 1991 Canada-Québec Accord, Québec has full responsibility for the selection of immigrants destined for Québec except for Family Class and in-Canada refugee claimants.
4. Includes the Atlantic Immigration Pilot Program and Federal Business programmes.
Source: Immigration, Refugees and Citizenship Canada (2017), "Notice – Supplementary Information 2018-2020 Immigration Levels Plan" and "Canada's Immigration System and the Points-based Approach for Human Capital".

Canada's immigration system is well run. Outcomes are constantly monitored and policies adjusted accordingly to ensure that the system's objectives are met. Immigration has become the main source of population growth, increasing the immigrant share of the population to one of the OECD's highest (Figure 24, Panels A and B). It has contributed to an increase in educational attainment of the working-age population (Panel C), made the country more culturally diverse (Panel D) and helped to grow the main cities (Panel E), thereby achieving agglomeration economies. Immigrants and their children are better integrated in Canada based on a variety of indicators than in most other countries (OECD and European Union, 2015[54]). Immigrants' children perform well in education - their PISA results are on a par with those of non-immigrant children (Figure 25), and their educational attainment is higher (Picot and Sweetman, 2012[55]).

Figure 22. Permanent resident admissions and planned levels by main class



1. Refugees and protected persons, humanitarian and other.
Source: Immigration, Refugees and Citizenship Canada, *IRCC Facts and Figures*, various years; IRCC (2017), "Notice - Supplementary Information 2018-2020 Immigration Levels Plan".

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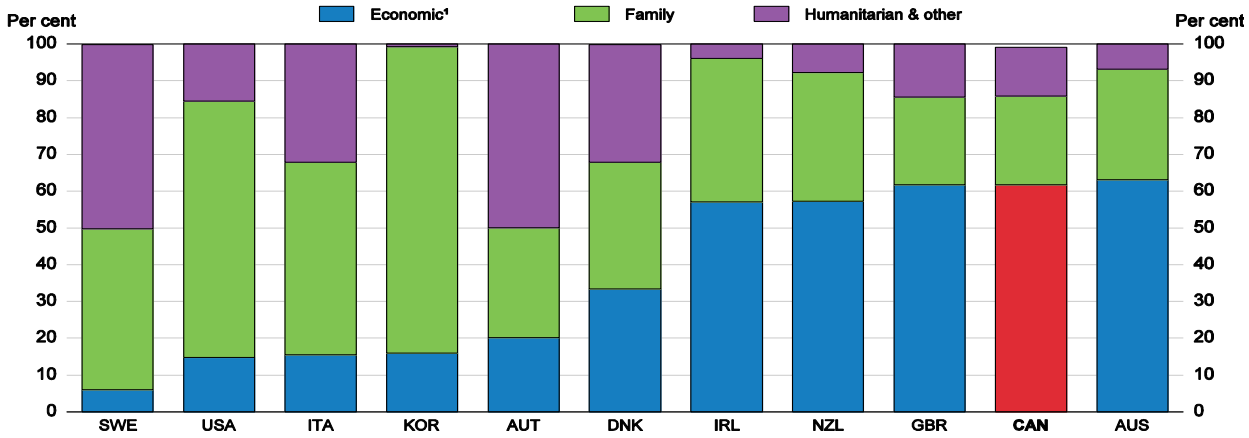
Figure 23. Permanent migration flows by category

Percent of total migration flows excluding free movements and other, 2015

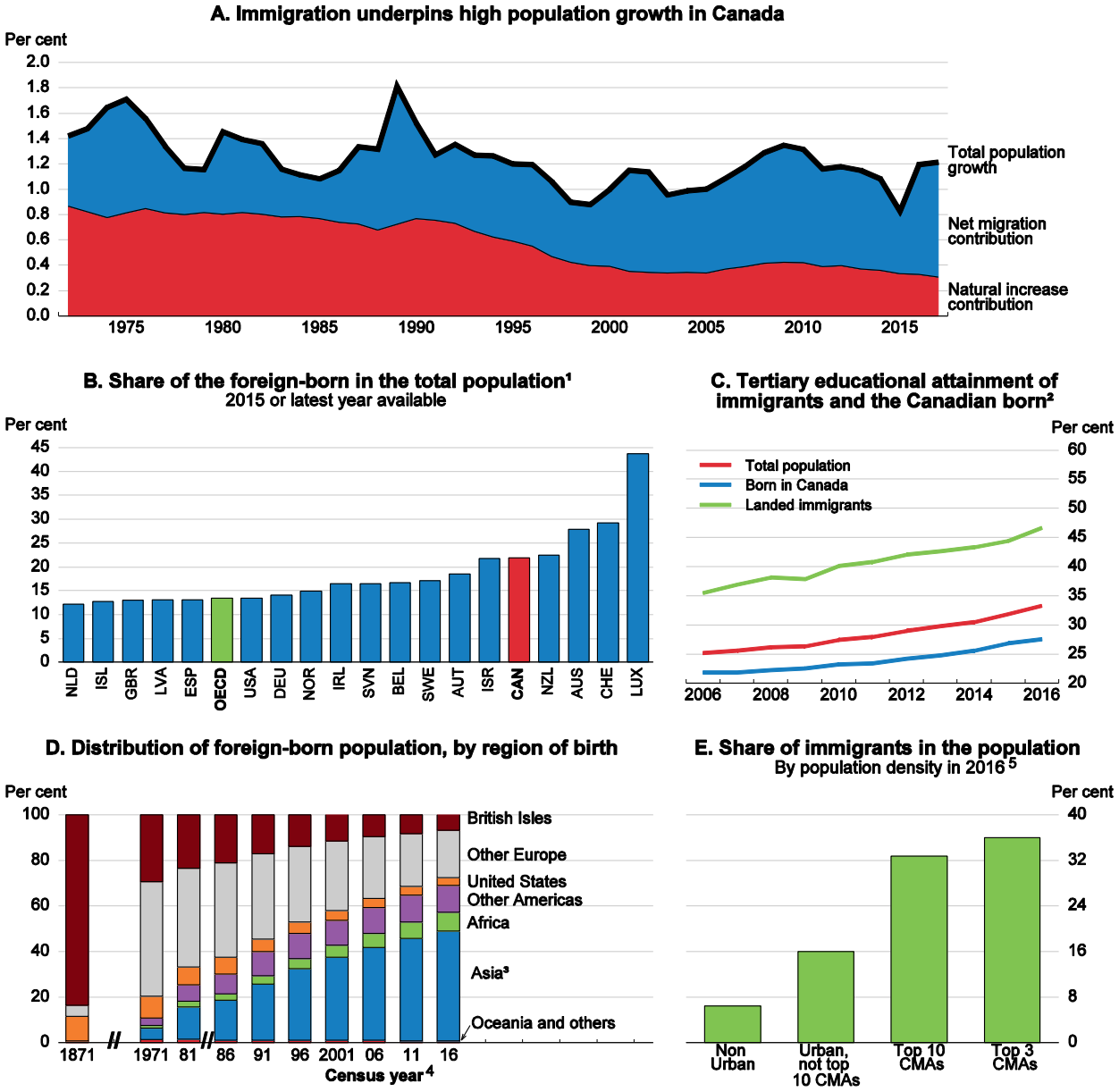


1. Work immigrants and accompanying family of workers.
Source: OECD (2017), *International Migration Outlook 2017*, Table 1.A.2.

StatLink http://dx.doi.org/10.1787/888933779903

Among adults, immigrants landed in Canada at less than 10 years of age or Canadian-born with at least one foreign-born parent earn more on average than their counterparts with Canadian-born parents, with this difference more than entirely explained by their higher educational attainment and greater tendency to live in large urban areas with high wage premia (ibid). Immigrants selected for their skills earn substantially more than other immigrants, indicating that selection is succeeding in identifying immigrants with the greatest potential for labour market integration (Figure 26). Immigration does not appear to have weakened social cohesion in Canada, in contrast to the situation in many other countries (Picot, 2013[56]).

Figure 24. Selected demographic effects of immigration



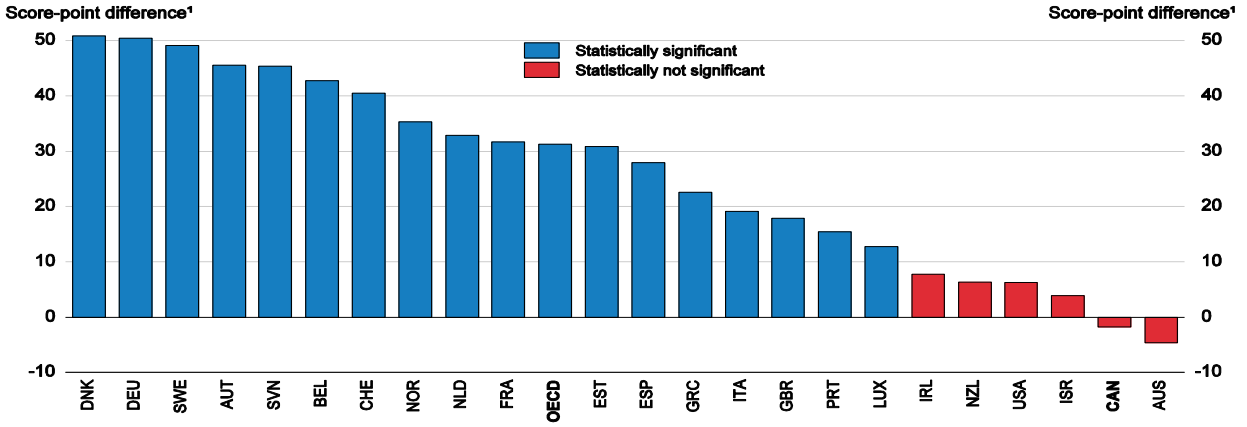
1. Highest ranking countries. 2016 for Canada according to the Canadian 2016 Census Program. The OECD is the average of all OECD countries except Japan and Korea for which data are not available.
2. Population aged 25-54 with university level relative to the group's total population.
3. Including the Middle East.
4. // denotes a break in the time series.
5. Census Metropolitan Areas (CMAs) are grouped by population density. The top 3 CMAs by density are Toronto, Montréal and Vancouver. The top 10 CMAs also include Kitchener-Cambridge-Waterloo, Hamilton, Victoria, Oshawa, Windsor, Ottawa-Gatineau and Abbotsford-Mission.

Source: Statistics Canada, Tables 051-0001, 051-0004, 282-0106, 051-0056 and 2016 Census Program, https://www.statcan.gc.ca/eng/dai/btd/othervisuals/other00; OECD, *International Migration* and *Economic Outlook databases.*

StatLink http://dx.doi.org/10.1787/888933779922

Figure 25. Differences in PISA science scores between non-immigrant and immigrants

Score-point difference in science between non-immigrant and immigrant students, after accounting for socio-economic status



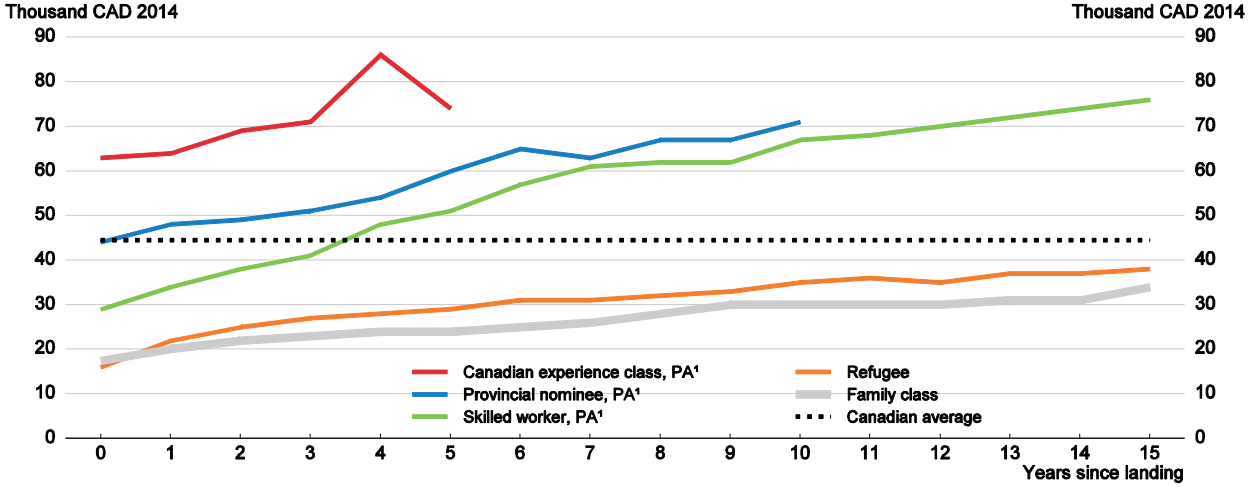
1. A positive score indicates better performance for non-immigrants than (first- and second-generation) immigrants.

Source: OECD (2016), *PISA 2015 Results (Vol I): Excellence and Equity in Education*, Table I.7.4a.

StatLink http://dx.doi.org/10.1787/888933779941

Figure 26. Average employment earnings by years since landing

Thousand CAD 2014, 2014 tax year



1. Principal applicants (economic class).

Source: H. Zhang (2017), "2014 Longitudinal Immigration Database (IMDB): Current Measures of Immigrant Economic Outcomes and Strategic Enhancement"', IRCC, Research and Evaluation Branch, April, calculations based on data from *Longitudinal Immigration database 2014* and *Canadian Income Survey 2014*.

StatLink http://dx.doi.org/10.1787/888933779960

Immigration has modest effects on Canada's economy

The effects of immigration on the receiving country generate much interest in Canada, as in other countries, and indeed are the primary focus of the "Objectives and Application" section of the Canadian Immigration and Refugee Protection Act (Sweetman, 2014[57]). While most studies of the effect on real GDP per capita in Canada conclude that immigration has a small negative effect owing to immigrants having lower earnings on

average than the native-born (El-Assal and Fields, 2017[58]) (Green and Green, 1999[59]) (Fougère, Harvey and Rainville, 2011[60]), these studies do not take into account the effects of second-generation Canadians, who, as noted above, have higher levels of education attainment and earnings than other Canadians. Taking these effects into account, the overall impact of immigration on GDP per capita is likely to be positive. It would be even greater, and immigrants' incomes and well-being higher, if immigrants' labour market integration were enhanced.

Another issue is the effect of immigration on the wages of Canadian workers. Canadian studies find that there are no or small negative effects but a relatively larger negative effect on wages of earlier immigrants (Table 17). As Canadian immigrants typically downgrade upon arrival to occupations filled by less educated native-born workers, as in other countries, competitive wage pressures are likely to be greater at the lower end of the wage distribution than at the upper end (Dustmann, Frattini and Preston, 2013[61]).

Table 17. Studies of the impact of immigration on the wages of Canadian workers

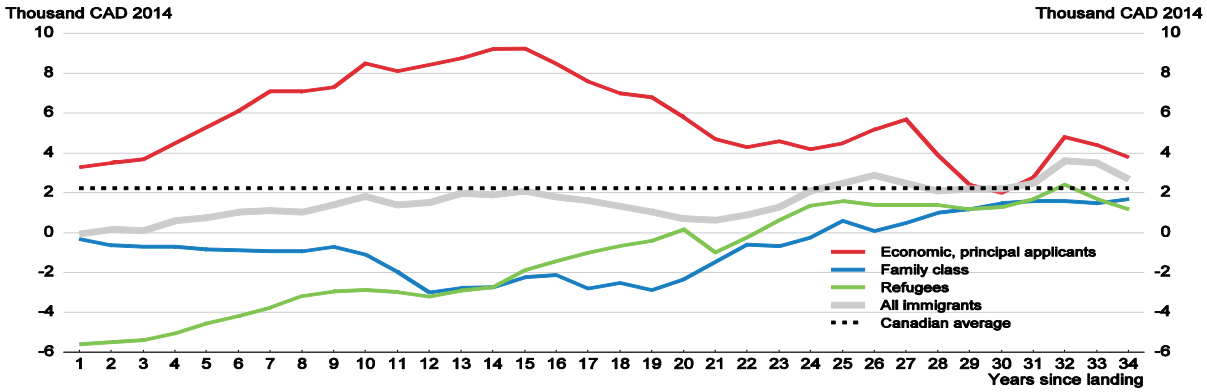
Canadian studies	Findings
Aydemir and Borjas (2007[62])	• A 1% labour supply increase due to immigration is associated with a 0.3%-0.4% decrease in wages. • Immigration narrows wage inequality because immigrants in Canada tend to be disproportionately highly skilled.
Tu (2010[63])	At the national level the substantial immigrant inflows after the policy change in the late-1980s did not adversely affect native-born wage growth rates in the following decade.
Fougère, Harvey and Rainville (2011[60])	Wage rates for all workers could decrease by 0.1% in 2026 and 0.2% in 2034 if there is an increase of immigrants from 0.75% to 1% of the population because of an extra inflow of highly skilled immigrants.
Hou and Picot (2014[64])	A 10% increase in immigration is associated with an average 0.8% decline in entry earnings among immigrant men and 0.3% among immigrant women.

Source: H. Zhang (2017), "Economic and Fiscal Impacts of Immigration: the Canadian Evidence", IRCC, Research and Evaluation Branch, October.

Most studies suggest that immigration's overall net fiscal impact is small in Canada, as in most other countries, taking into account taxes net of transfers, the costs of health care, education and some other government expenditures [(OECD, 2013[65]); (Picot, 2013[56]); (Kerr and Kerr, 2011[66])]. OECD (2013[65]) estimates a small overall negative effect (-0.06% of GDP) in Canada. Immigrants make average net direct fiscal contributions that converge towards the Canadian average as more time is spent in Canada, although the downward convergence for high-skilled immigrants in recent years is exaggerated by the IT-sector collapse in the early 2000s, where many of them worked (Figure 27).

Figure 27. Average income tax paid in 2014 net of transfers received by years since landing

Thousand CAD 2014, 2014 tax year



Source: H. Zhang (2017), "Economic and Fiscal Impacts of Immigration: the Canadian Evidence", IRCC, Research and Evaluation Branch, October, calculations based on data from *Longitudinal Immigration database 2014*, and Statistics Canada's T1 Family File (2014).

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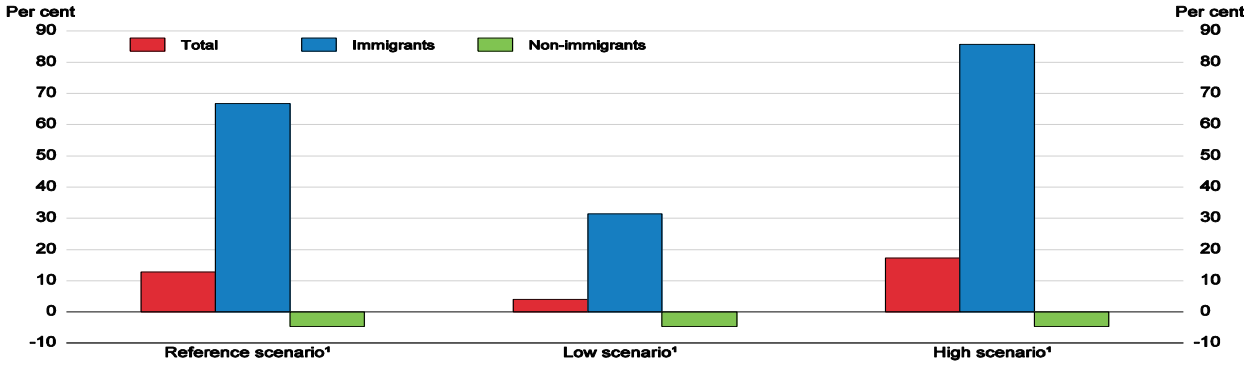
Immigration will be vital for sustaining positive growth in the working-age population in the coming decades in the face of population ageing (Figure 28); the old-age dependency ratio is projected to rise in Statistics Canada's reference scenario from 0.26 in 2011 to 0.48 in 2036 (Morency, Malenfant and MacIsaac, 2017[67]). While immigration helps to mitigate the increase in the old-age dependency ratio, its long-run effects are modest because immigrants age too. Even a doubling of the immigration rate from the low- to the high-immigration scenario would have little effect on the working-age and elderly-population shares, and hence on the old-age dependency ratio over the next two decades (0.54 and 0.47, respectively, in the low- and high scenarios) (Figure 29), and an even smaller effect in the long run, when the increase has impacted all age groups.

Figure 28. Immigration will be essential to working-age population growth

Population growth for those of working-age (25-64) from 2011 to 2036



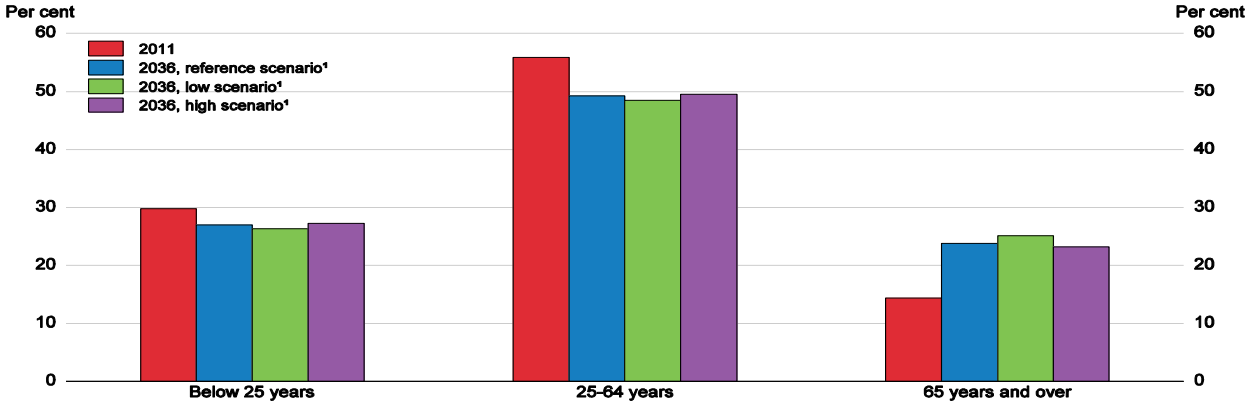
1. The reference scenario assumes an annual immigration rate of 0.83% (8.3 immigrants per 1000 population); the low scenario corresponds to an immigration rate of 0.5% and the high scenario to 1%.

Source: J.-D. Morency, E. Caron Malenfant and S. MacIsaac (2017), "Immigration and Diversity: Population Projections for Canada and its Regions, 2011 to 2036", App. 1 & 4, Statistics Canada, Cat. No. 91-551-X.

StatLink http://dx.doi.org/10.1787/888933779998

Figure 29. Immigration has modest effects on the population age structure in the long run

Age distribution of total population in Canada



1. The reference scenario assumes an annual immigration rate of 0.83% (8.3 immigrants per 1 000 population) between 2011 and 2036; the low scenario corresponds to an immigration rate of 0.5% and the high scenario to 1%.

Source: J.-D. Morency, E. Caron Malenfant and S. MacIsaac (2017), "Immigration and Diversity: Population Projections for Canada and its Regions, 2011 to 2036", Appendix 1 and Appendix 4, Statistics Canada, Cat. No. 91-551-X.

StatLink http://dx.doi.org/10.1787/888933780017

Enhancing labour-market integration and well-being of immigrants

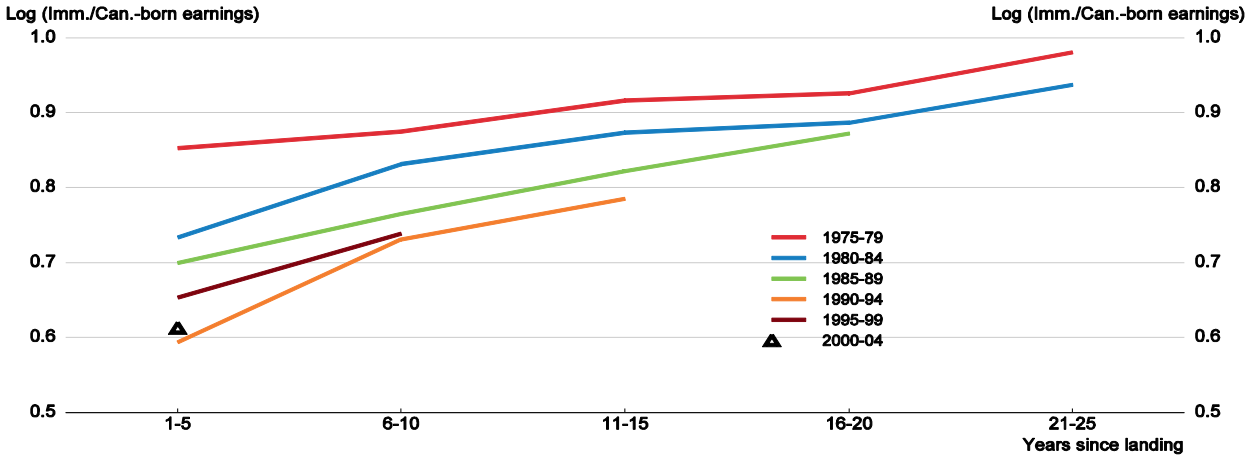
Immigrants' average earnings during their first five years in Canada relative to those of the native-born have fallen sharply in recent decades (Figure 30). Controlling for education, age and place of residence, male entry earnings fell from 85% of those of the Canadian-born in the late 1970s to around 60% in the early 2000s; similar trends are observed for female immigrants (Picot and Sweetman, 2012[55]). Whereas adjusted immigrant earnings approached those of the native-born with similar characteristics after 20 years for the cohort landing (*i.e.*, being granted permanent residence) in Canada in the late 1970s, the starting point for cohorts since the early 1990s has been so low that their earnings are unlikely to ever catch up to those of the native born with similar characteristics. The deterioration in labour-market outcomes for immigrants has resulted in a growing share of them falling into relative poverty at a time when the opposite was happening for the Canadian-born (ibid). For university-educated new immigrants, the fall in earnings relative to their native-born counterparts over 1980-2005 was much greater in Canada than in the United States (Bonikowska, Hou and Picot, 2011). Whereas the university-education wage premium for new immigrants was similar in both countries in 1980, it was considerably higher in the United States by 2000.

A major factor explaining the fall in initial earnings for immigrants during the 1970s and 1980s is a deterioration in English- or French language skills, which appears to have a direct effect on labour-market outcomes as well as influencing returns to formal education (Hou and Picot, 2016[68]); (Picot and Sweetman, 2012[55]). Immigrants with strong official language skills get higher returns on their education credentials than those with weak skills, who get no return at all (Bonikowska, Green and Riddell, 2008[69]; Warman, Sweetman and Goldmann, 2015[70]; Ferrer, Green and Riddell, 2006[71]). Returns are particularly high for immigrants with higher educational attainment (Goldmann, Sweetman and Warman, 2011[72]). When English or French literacy skills are accounted for, there is no statistical difference between returns to education for

immigrants and the Canadian-born (Ferrer, Green and Riddell, 2006[71]). Another factor is the evolution in the economic returns to pre-immigration labour market experience, which had fallen to close to zero by the time of the 1990-94 cohort (Aydemir and Skuterud, 2005[73]).

Figure 30. Predicted male immigrant earnings[1] relative to those of comparable native-born

Full-time, full-year male workers,[2] by years since landing, 1975-2004



1. Predicted values based on a model.
2. Aged 16 to 64.

Source: G. Picot and A. Sweetman (2012), "Making It in Canada - Immigration Outcomes and Policies", *IRPP Study*, No. 29, April, Figure B1.

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Narrowing the earnings gap between the native-born and immigrants has been a major focus of policy since the 1990s. An early response was to increase the share of immigrants subject to selection: the share of economic-class immigrants rose from 40% in 1993 to around 60% in the late 2000s. Selection policies have been revised to give much greater weight to competence in one of Canada's official languages and to age, which is inversely related to potential foreign experience. And the selection system was overhauled with the introduction in 2015 of the Express Entry system, modelled on similar arrangements in Australia and New Zealand.

Express Entry should deliver applicants with greater potential for strong labour market integration, as only those candidates with the highest point scores are invited to apply for permanent residence, whereas previously all applications were processed on a first-in, first-out basis. In addition, employers have a greater role in selecting applicants in that extra points are awarded for a relevant job offer, which in many cases will be made for current employees on a temporary work visa.

While prior Canadian skilled work experience has been given greater weight in selection in light of evidence that immigrants with it earn much more than those without it (Sweetman and Warman, 2014[74]), the share of such economic immigrants has traditionally been modest (Hou and Bonikowska, 2016[75]). To increase the share of economic immigrants with such experience, points awarded for it should be increased. Moreover, points awarded for a skilled-job offer should be subject also to having skilled Canadian work experience, which is not currently the case, as a job offer without it does not make much difference to entry earnings. Similarly, points awarded for Canadian post-secondary education should be conditioned on having skilled Canadian work experience

because without it such education does not offer a clear earnings advantage (*ibid*). To boost innovation greater weight should be placed on a relevant job offer for applicants with a PhD in a science, technology, engineering or mathematics (STEM) field, as such immigrants contribute disproportionately to innovation when working in a STEM job (Blit, Skuterud and Zhang, 2018[76]). Subject to establishing norms for provinces' foreign qualifications recognition, another change to selection policies that should be made is to take into account the gap between applicants' foreign credentials and what is required for local registration, as already occurs in certain regulated trades through credentials assessment, as immigrants whose pre-immigration occupation is regulated in Canada receive a substantial earnings benefit if they get a job in their pre-immigration occupation (Warman, Sweetman and Goldmann, 2015[70]; OECD, 2016[77]).

Expansion of bridge programmes would help more immigrants to work in their fields of expertise, enhancing their earnings and well-being. These programmes, which combine advanced language training specific to an immigrant's field and courses needed to bring their credentials up to Canadian standards in regulated occupations, have been highly successful in facilitating post-secondary credentials recognition.

Mentoring programmes are a promising way of helping immigrants overcome their under-representation in high-quality jobs controlling for age and education attainment (Skuterland and Su, 2012[78]). Such programmes, which help currently employed skilled immigrant workers meet people in their profession, potentially integrating them in job-search networks, provide profession-specific language skills as well as literacy and soft skills (including teamwork and oral communication) specific to Canadian workplaces, plus information on workplace culture and employer expectations. Some reflection is needed on how the main constraint to expanding these programmes - finding people who can take the time to mentor – can be attenuated.

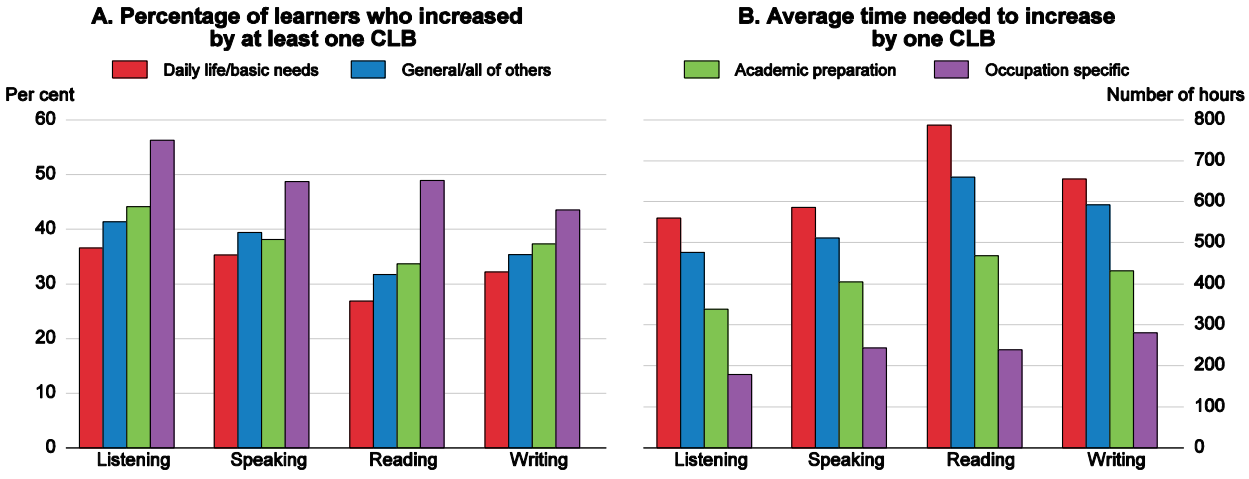
The Targeted Employment Strategy for Newcomers announced in the 2017 budget is aimed at facilitating foreign-credentials recognition and helping immigrants to gain Canadian work experience in their profession. The Strategy includes: improved pre-arrival supports to begin recognition; a loan programme to assist with costs; and targeted employment-assistance measures to test innovative approaches to help newcomers acquire Canadian professional experience. Several pilots are underway to gather evidence on the most effective and efficient means to work with employers to support immigrants in obtaining their first Canadian work experience commensurate with their professional training and background.

Enhancing the impact of government-sponsored settlement programmes could also improve immigrant labour-market (and more general) integration, especially for those facing the greatest barriers to integration. Refugees, especially government-assisted refugees (referred to Canada for resettlement by the United Nations Refugee Agency or another referral organisation, with resettlement supported by the government) are more likely to use these services than other immigrants. The federal government is the largest provider of settlement-programme funding (CAD 945 million in FY2015-16). These programmes provide services to eligible persons both before and after arrival in Canada. While more than 35% of immigrants who landed in the past three years have used at least one IRCC-funded settlement service within a year of landing, it is not clear whether utilisation patterns reflect differences in needs, availability or other barriers to take-up. One issue that IRCC is working on is locating settlement services nearer to where immigrants live. Familial and financial constraints, which may oblige immigrants to take on "survival jobs", also may be contributing to low use of language training and

employment-related services relative to orientation and needs assessments, which can be completed more quickly. IRCC should assess the extent to which current utilisation patterns reflect needs and, insofar as they do not, redirect resources.

The largest funding source for language training is the federal government's Language Instruction for Newcomers to Canada (LINC) programme. There are large differences in the number of training hours needed for clients to improve their official language skills by a given amount. By type of language training, the most cost-effective programmes are occupation-specific and academic preparation, while the least effective are for daily life/basic needs (Figure 31). While selection clearly influences these results, IRCC should nevertheless consider increasing resources for the more efficient courses to reduce waiting times. Expanding access to occupation-specific classes, which are often held in the evening, may be particularly beneficial for refugees, who cannot afford to delay working for years while they learn English for daily needs. Consideration should also be given to how the less efficient courses can be restructured to improve outcomes, for example by making them more relevant to clients' needs. Similarly, it takes significantly longer for some language clients, notably parent and grandparent immigrants, to improve their official language levels (Figure 32). The classroom context may not be the most suitable for teaching older persons. Where other cheaper services are available to fulfil some clients' objectives, such as community connection services to parent and grandparent immigrants instead of expensive language training, consideration should be given to expanding these services and redirecting the resources saved to other clients. More generally, language training needs to be more client specific, including the way it is delivered (e.g., classroom, evening classes, by Internet), and more coordinated across all levels of government.

Figure 31. Cost-effectiveness of language training by type[1]



1. Calculation based on IRCC's administrative data language service users who landed between January 1, 2014 and March 31, 2016 and data as of April 2016. The calculation excludes language service clients who do not have any Canadian Language Benchmark (CLB) recorded in the four language components.
Source: H. Zhang, J. Zhong and R. Lee (2017), "Research Insights in Settlement Services: Uptake, Mobility of Clients and Service Outcomes", IRCC, Research and Evaluation Branch, October.

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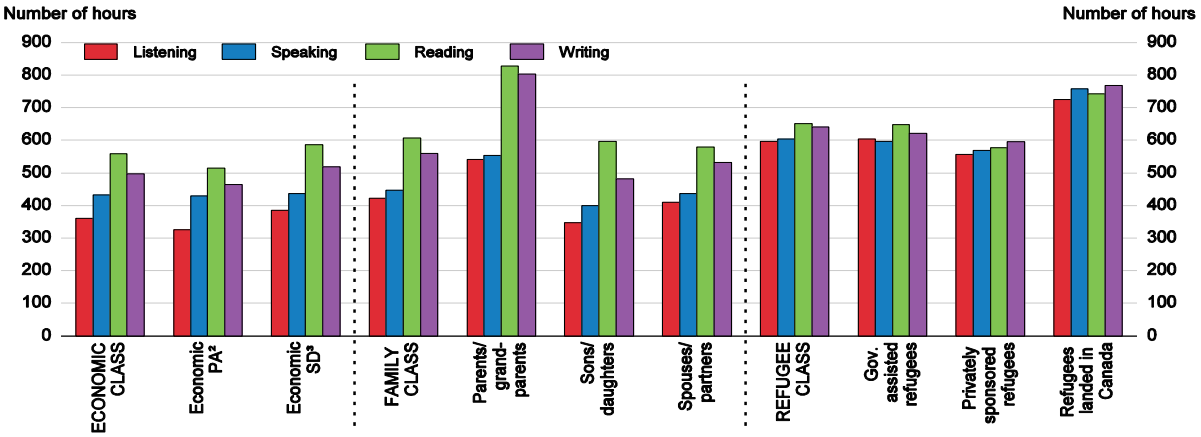
Figure 32. Average time needed to improve one Canadian Language Benchmark[1]



1. Calculation based on IRCC's administrative data language service users who landed between January 1, 2014 and March 31, 2016 and data as of April 2016.
2. Principal applicants.
3. Spouses/Domestic common law partners.

Source: IRH. Zhang, J. Zhong and R. Lee (2017), "Research Insights in Settlement Services: Uptake, Mobility of Clients and Service Outcomes", IRCC, Research and Evaluation Branch, October.

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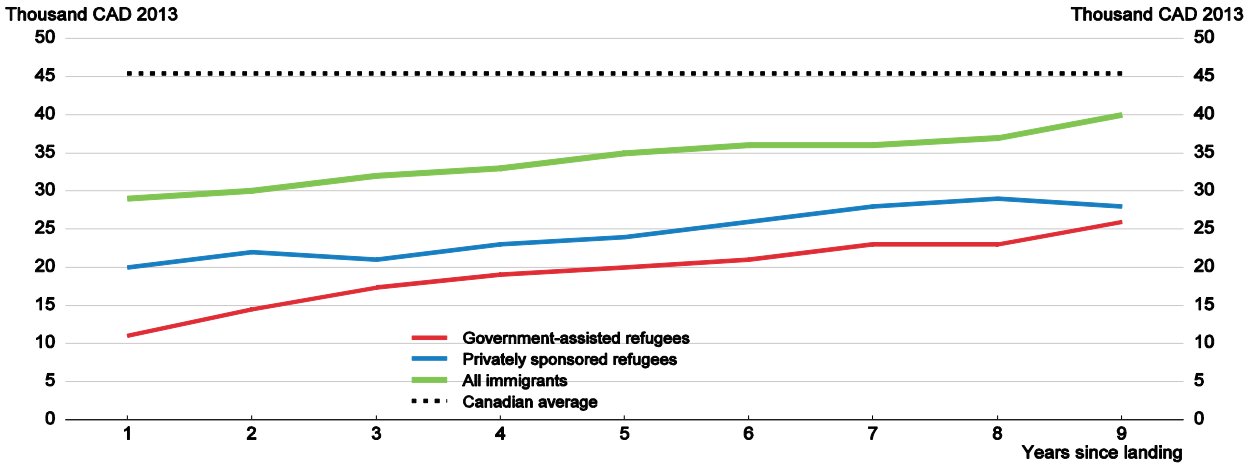
It may be possible to enhance earnings and well-being for government-assisted refugees by privately managing them. Government-assisted refugees have lower earnings than privately sponsored refugees and other refugee categories, all of whom have lower earnings than other immigrants and Canadians on average (Figure 33). It is not clear whether these contrasting results for refugees reflect selection or treatment effects, although the better outcomes for privately sponsored refugees in 13 countries found by Hou and Picot (2018) after controlling for relevant characteristics suggests that treatment effects may dominate. A blended model with government selection and private management is being trialled to see if it yields better results. If so, it should be expanded.

Figure 33. Average employment earnings for refugees and immigrants by years since landing

Thousand CAD 2013, 2013 tax year



Source: IRCC (2017), "Government-Assisted Refugees - Findings from the Longitudinal Immigration Database (IMDB)", *IMDB 2013 Research Series*.

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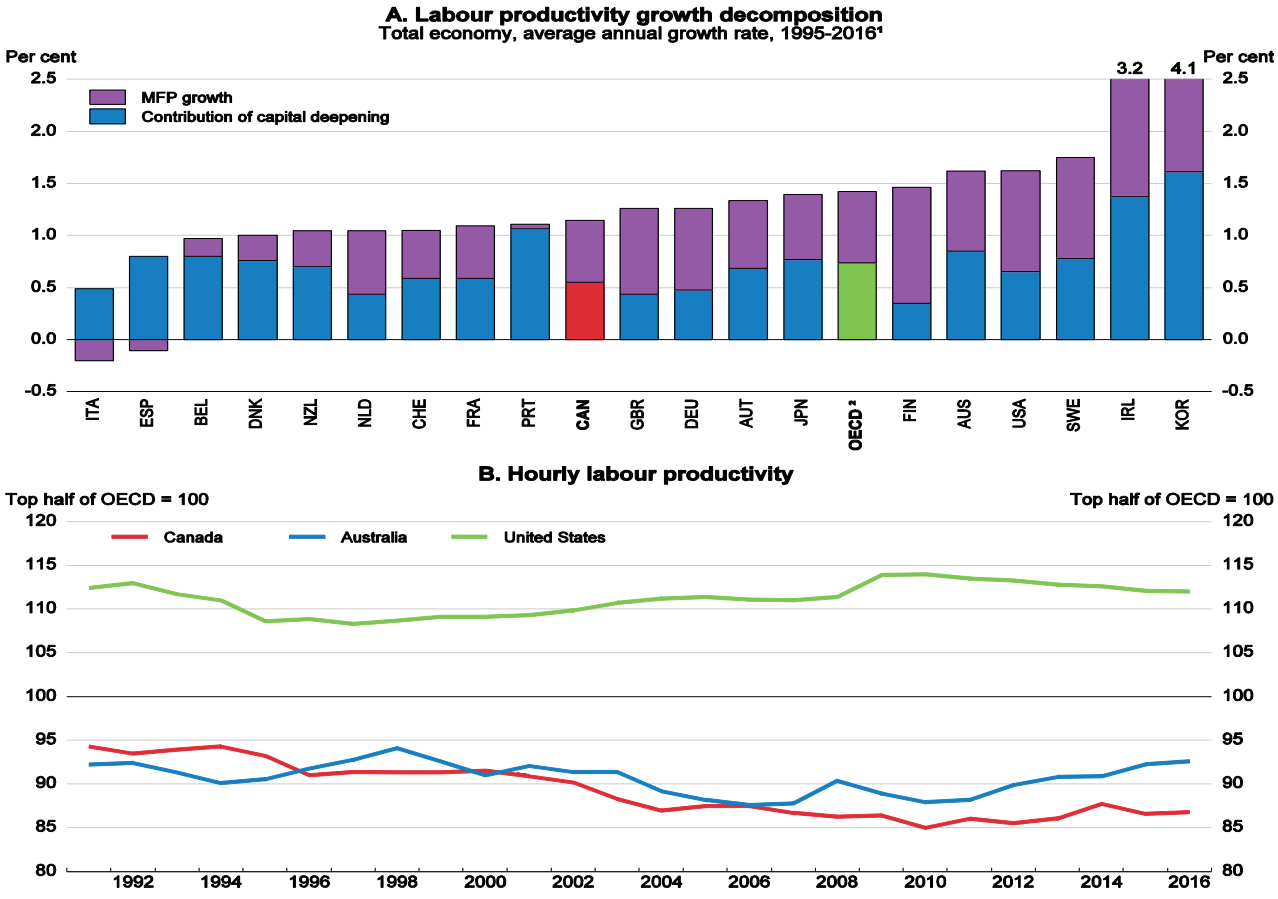
Discrimination may also be a cause of lower earnings for immigrants. Even after controlling for all non-ethnic factors that explain earnings, immigrants, especially the university educated, earn less than the native-born (Bonikowska, Green and Riddell, 2008[69]). Oreopoulos and Dechief (2012[79]) find evidence of discrimination against non-Caucasian job-seekers in Canada. While potential victims can seek justice under anti-discrimination laws, the Migration Integration Policy Index points to room for improvement in mechanisms to enforce the law. A measure along the lines of Australia's 2013 Multicultural Access and Equity Policy, which requires all government departments to deliver equitable access to services regardless of clients' cultural or linguistic background, could also enhance outcomes.

Reforms to increase productivity

Canada's labour productivity remains well below that in the top half of the OECD and has grown more slowly than in most OECD countries over the past two decades (Figure 34). Disappointing productivity performance reflects both small increases in

Figure 34. Labour productivity



1. 1996-2016 for Austria; 1995-2014 for Ireland; 1995-2015 for Japan, New Zealand, Portugal, Spain and Sweden.
2. Average of the 20 countries for which data are available.
Source: OECD (2018), *Productivity database*; OECD (2018), *Economic Policy Reforms: Going for Growth*.

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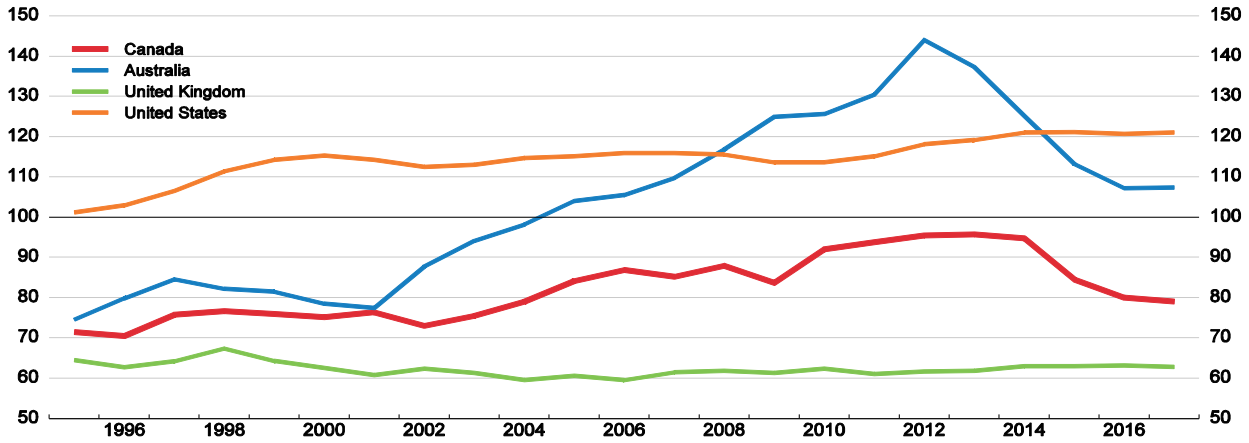
capital intensity, resulting from rapid growth in the labour force relative to the capital stock – non-residential investment per person in the labour force has been 20% below the OECD average (Figure 35) – and low multifactor productivity growth. As noted above, openness to trade has supported Canadian productivity, so there are threats to future productivity growth if trade barriers increase, for example due to termination of NAFTA.

Figure 35. Gross fixed non-residential capital formation

Per person in the labour force, OECD = 100[1]



1. Data for gross non-residential capital formation are in current prices and were converted into a common currency using 2010 purchasing power parity exchange rates. The labour force includes only people aged 15-64. Data for the OECD exclude Chile, the Czech Republic, Estonia, Greece, Hungary, Iceland, Israel, Latvia, Luxembourg, Mexico, Norway, Poland, the Slovak Republic, Slovenia and Turkey.
Source: OECD, *Economic Outlook and Labour Force Statistics databases.*

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Recommendations from past Surveys

Reducing product market competition barriers is vital for raising productivity, as recommended in past *Surveys* (Table 18). The Canadian Free Trade Agreement (CFTA) entered into force on 1 July 2017, replacing the Agreement on Internal Trade and reducing barriers to inter-provincial trade and establishing a federal-provincial-territorial Regulatory Reconciliation and Cooperation Table to oversee the regulatory conciliation process and promote regulatory cooperation across Canada. The CFTA should be taken further by prohibiting agricultural supply management regimes, reconciling remaining regulatory differences (possibly via mutual recognition) and expediting dispute resolution and raising penalties for non-compliance.

Focussing measures to support innovation on correcting market failures, as recommended in past *Surveys*, would also boost productivity. A positive step in this regard is the CAD 400 million funding over three years for the Venture Capital Catalyst Initiative, which will increase late-stage financing available to Canadian entrepreneurs. Around CAD 650 million per year in additional funding for research and development in the 2018 federal budget is focussed on fundamental research, where market failures are most pervasive. The federal government has also allocated CAD 950 million to accelerate innovation through five regional "superclusters", which has the potential to boost economic growth through one-off funding that complements existing local strengths. A

greater focus on removing barriers to innovation, for example communicated through clear selection criteria, would increase the likelihood that cluster development policy would be effective. The substantially enhanced research and development (R&D) tax credit for small companies and heavy reliance on indirect R&D subsidies should be evaluated to determine whether they are efficient and adjusted accordingly.

Table 18. Selected past key recommendations on increasing productivity

Recommendations in past Surveys	Actions taken since the previous Survey
A. Competition in network sectors and the internal market	
Reduce foreign ownership restrictions in air transportation on a reciprocal basis and in telecoms and broadcasting, where cultural objectives could be achieved by other means.	No action taken.
Develop more east-west electricity interconnections through provincial cooperation when there is an economic case to do so. Liberalise the generation and distribution segments to encourage wholesale and retail competition in jurisdictions that have not done so yet.	No action taken.
Broaden the Agreement on Internal Trade's (AIT's) sectoral coverage as much as possible. Seek to reconcile remaining regulatory differences (possibly via mutual recognition). Establish a pan-Canadian regulatory cooperation council. Raise monetary penalties for non-compliance, and expedite dispute resolution, which remains protracted.	The AIT was replaced by the Canadian Free Trade Agreement in 2017, which automatically covers sectors unless exceptions are identified. Energy is covered for government procurement. Agriculture is not covered. A Regulatory Reconciliation and Cooperation Table was created, and maximum monetary penalties for non-compliance were increased.
B. Innovation	
Improve targeting of public support for business R&D by shifting funding at the margin away from scientific research and experimental development (SR&ED) tax subsidies by lowering the small firm rate toward the large firm rate. Use the savings to reinstate capital costs in the eligible base and to scale up direct grants.	Budget 2017 announced that the SR&ED program would be reviewed to ensure its continued effectiveness and efficiency. All direct (non-tax) federal innovation programmes for business were reviewed in 2017 with changes including consolidation of programmes announced in Budget 2018. The Strategic Innovation Fund established in 2017 allocates repayable and non-repayable contributions to firms of all sizes across industrial and technology sectors.
Phase out remaining federal tax credits for provincial Labour-Sponsored Venture Capital Corporations (LSVCCs), as previously planned, and explore whether to make greater use of funds that operate like private, independent, limited-partnership venture capital funds, as was the case with the Venture Capital Action Plan.	No action taken since federal tax credits for provincial LSVCCs were restored in the 2016 budget.
C. Taxation	
Review small business taxation (e.g. in the context of the recently announced federal tax expenditure review) to identify clear market failures and the policy instruments best suited to addressing them.	Following completion of the tax expenditure review, the government announced measures in October 2017 – restrictions on income sprinkling and the allowable amount of passive investment income - to reduce misuse of the small business tax regime by high-income households. At the same time the government also announced that it would lower the small business corporate tax rate from 10.5% to 9% (compared with the standard federal corporate rate of 15%) by 2019.
Reduce personal income tax expenditures not warranted on economic or equity grounds, notably the non-taxation of benefits from private health plans and of capital gains on principal residences and qualified small business shares (in this case up to an indexed lifetime limit, which is currently CAD 848 252). The planned federal review of tax expenditures should assess them from both a tax efficiency and equity vantage point.	An internal tax expenditure review was completed in 2017. It resulted in measures to enhance the fairness, efficiency and effectiveness of the tax system being announced in Budget 2017, including the elimination of 12 tax expenditures and modifications to six others.

Rebalancing taxation away from taxes with high efficiency costs, such as corporate and personal income taxes, towards those with low efficiency costs, such as GST (VAT) and environmental taxes, and reducing unwarranted tax expenditures would improve resource allocation and, hence, productivity. In this regard, it is unfortunate that the federal government chose to reduce further the preferential income tax rate for small companies as it is unlikely to address efficiently clear market failures confronting small businesses. As discussed in the last *Survey*, these market failures are most likely to occur in capital markets for young, innovative firms.

Good project selection will be critical to harness the productivity benefits from infrastructure investment

Infrastructure investment is a key part of the federal government's growth strategy and will boost productivity if implemented effectively. The government plans to spend CAD 187 billion on infrastructure over 12 years, prioritising public transit (30% of new funding), green (28%) and social (27%) infrastructure, transportation that supports trade (13%), and rural and northern communities (3%). The government has established the Canada Infrastructure Bank, an independent federal government-owned entity that subnational governments can use to help finance revenue-generating projects that are in the public interest. The Bank will be responsible for investing at least CAD 35 billion over 11 years through public-private partnerships. This should leverage a much larger amount of investment. A one dollar increase in the infrastructure stock could raise GDP by just under 50 cents over the medium term through increasing productivity, crowding in private investment and positive spillover effects across provinces (Ishi, Mariscal and Gentry, 2017[80]). Investment in core economic infrastructure such as roads, railways, airports and utilities has historically delivered the largest productivity payoffs (Bom and Ligthart, 2014[81]).

As highlighted in the 2016 *Survey,* finding infrastructure investments with high returns is more difficult in Canada because infrastructure quality and quantity are already perceived to be high. However, a review of the ten largest public infrastructure projects in Canada in 2017 found that only one had a publicly released cost-benefit analysis that was sufficiently rigorous (Robins, 2017[82]). While the selection process for projects undertaken by the Canada Infrastructure Bank has not yet been defined, the availability of pre-committed funding can create pressure for spending that does not necessarily yield the highest net benefits. Thus, projects' social rates of return should continue to be evaluated through existing infrastructure planning processes, including those applied by provinces and municipalities, with rigorous cost-benefit analysis released publicly and, for large projects, second opinions. On a more positive note, leveraging private capital through the Canada Infrastructure Bank will offer benefits through access to private technology and innovation, enhanced private-sector incentives for project delivery, and increased efficiency through user charging.

Environmental sustainability

Canada's largest environmental challenge is reducing its emissions of greenhouse gases (GHGs), which are among the highest in the OECD in per capita terms. Canada is also the OECD's fourth largest emitter in absolute terms (Figure 36, Panel A). Its emissions have fallen since 2013 but are up nearly 20% since 1990 (mainly owing to oil and gas production, and transportation), in contrast to a decline in most other OECD countries.

To help Canada meet its COP21 target of cutting emissions to 30% below 2005 levels by 2030, federal, provincial and territorial governments, in consultation with Indigenous peoples, launched the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) in 2016. It outlines a country-wide approach to pricing carbon emissions to ensure that they are subject to a minimum price across the country, which is to rise from CAD 10 per tonne of CO_2 equivalent in 2018 to CAD 50 by 2022, or subject to cap-and-trade systems with adequate emissions-reduction targets and declining caps over time. The PCF also announced specific measures to reduce emissions and build resilience to adapt to a changing climate, including: accelerating the phase-out of traditional coal-fired electricity; reducing methane emissions from the oil and gas sector by 40-45% by 2025;

support for communities to adapt to climate change; and funding to foster clean technology solutions. With the exception of Saskatchewan, all federal, provincial and territorial jurisdictions have signed up. In provinces and territories that do not meet the minimum carbon price, the federal government will impose a federal back-stop carbon-pricing system consisting of a charge on fossil fuels and, for large emitters, an output-based pricing system (cap and trade with free allocation of permits up to the industry standard) and return the direct revenues to the provincial/territorial jurisdiction of origin. Opposition parties in Ontario and Alberta propose to terminate their provinces' carbon-pricing schemes and oppose application of the federal back-stop system, creating a serious political problem for the PCF should they gain power.

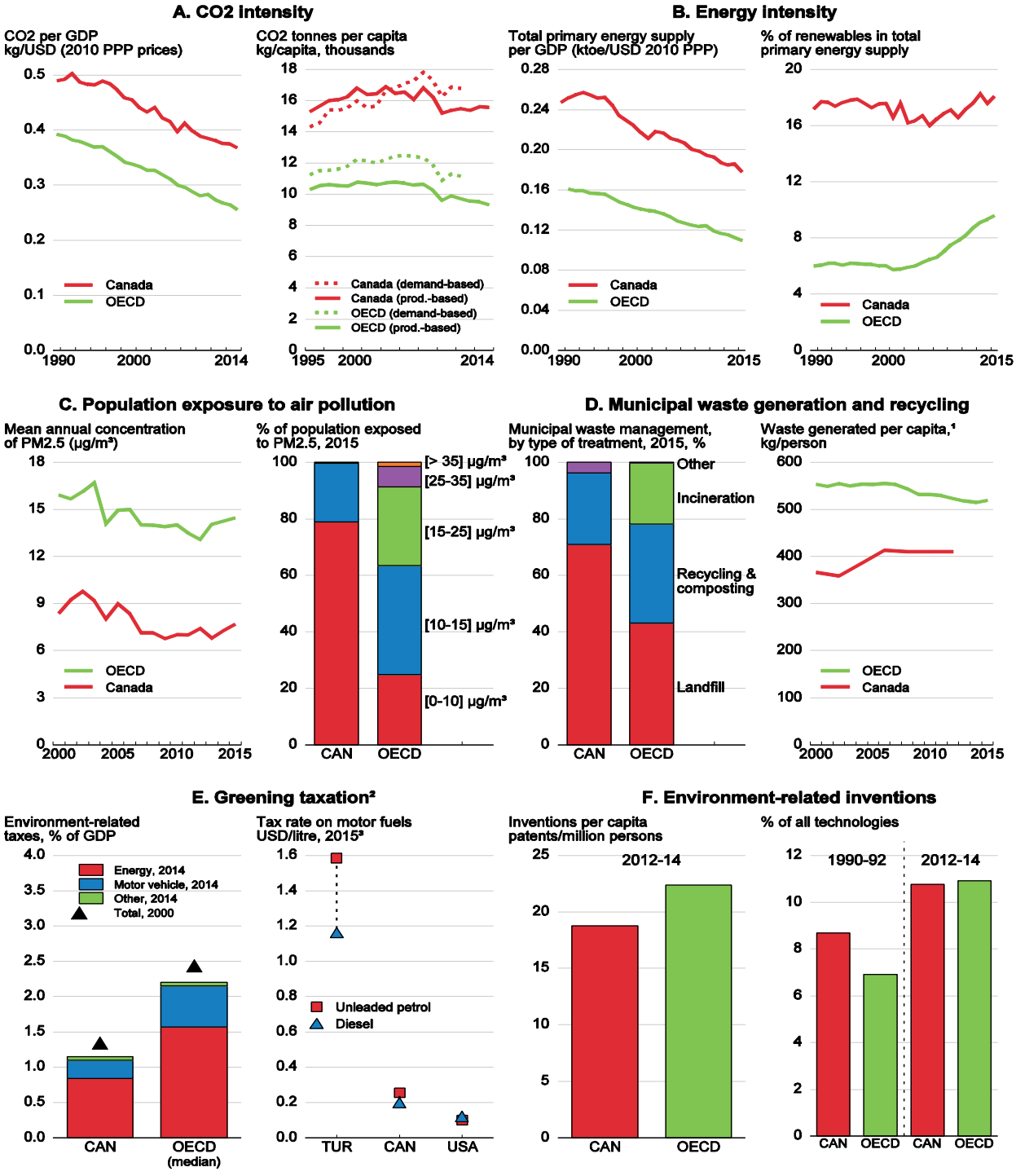
The federal government projects that emissions in 2030 will be 583 megatonnes (MT) of CO_2, 13% greater than Canada's COP21 commitment (Government of Canada, 2017[83]). However, these projections do not account for expected reductions from public transit, clean technology and innovation investments, and stored carbon, or for new policies that may be implemented by governments between now and 2030. Canadian governments have committed through the PCF to report on progress annually and take stock of results in order to increase ambition over time. Even if the COP21 target were to be met, Canada would still have high emissions intensity relative to most other countries that meet their Paris targets, suggesting that it will need to do much more to make its own abatement an effective contribution to limiting global warming.

Now that the two largest provinces have included transport fuels in their cap-and-trade system, bringing them into line with Alberta and British Columbia and more generally with the federal carbon-pricing benchmark, setting a tight cap on emissions could, as prices rise, eventually make many other overlapping and potentially expensive policies redundant, such as targeting transport emissions using incentives for zero-emission cars, fuel standards and vehicle economy standards. To contain the risk that a tight cap results in a politically unacceptable carbon price, a limit on the price of allowances could be set. Where carbon taxation is being used, the price should be adjusted to ensure that projected outcomes remain on track.

Good spatial planning policies, which ensure that urban planning avoids generating excessive needs for mobility, remain important for achieving abatement objectives (OECD/IEA/NEA/ITF, 2015[84]; OECD, 2017[85]). As "good practice" is not always well defined in spatial planning, experimentation – with proper evaluation – should be encouraged.

Canada's energy extraction industry emits almost 200 million tonnes annually, nearly 30% of total emissions. Under Alberta's Climate Leadership Plan, the province has committed to limit oil-sands emissions to 100 million tonnes through a form of carbon pricing (since 2007, facilities that emit 100 000 tonnes or more of GHGs per year are subject to a carbon price on emissions beyond a free allocation determined by benchmarks; since January 2018 these benchmarks are set by high-performing industry peers or competitors that produce the same or similar products). At 70 million tonnes per year, such emissions are currently well below this limit.

Figure 36. Environmental indicators



1. Canadian data refer to waste from households (as proxy for municipal waste).
2. Includes taxes at both central and lower levels of government.
3. 2014 for the United States.

Source: OECD (2018), *OECD Environment Statistics database* (Green Growth Indicators: Exposure to Air Pollution, Patents: Technology Development, Municipal Waste); OECD *National Accounts database*; IEA (2018), *IEA World Energy Statistics and Balances database*; *IEA Energy Prices and Taxes database*.

StatLink http://dx.doi.org/10.1787/888933780150

Alberta's oil-sands industry also generates liquid waste that is stored in tailings ponds. The Government of Alberta released a new Fluid Tailings Management directive in 2016, an outcomes- and risk-based approach that holds operators accountable for managing their fluid tailings. The Alberta regime also requires reclamation by companies, at the end of a project's life, to return the land to how it looked before development took place and requires financial security for these purposes. However, some groups express concerns that companies are not fully complying with the directives (McNeill and Lothian, 2017[86]; Natural Resources Defense Council and Environmental Defense Council, 2017[87]).

Revenues from environmental taxes (at all levels of government) are considerably lower than in most other countries, largely because of low energy taxation (Figure 35, Panel E). While the average tax rate on motor fuel is higher than in the United States, it is much lower than in Europe. Diesel is taxed at a lower rate than gasoline, even though its environmental externalities are higher. Application of congestion and road pricing remains limited and should be expanded to reduce negative effects from vehicle use, including associated environmental pollution. Expanding landfill charges would encourage waste prevention and recycling, as a large share of Canadian waste goes into landfill (Panel D).

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Annex. Progress in structural reform

This Annex reviews actions taken on recommendations from previous Economic Surveys that are not covered in tables within the main body of the Assessment and Recommendations. Recommendations that are new to this Survey are listed at the end of the Executive Summary and the relevant chapter.

Recommendations in previous *Surveys*	Actions taken since May 2016 and current assessment
A. Product market competition	
Grant the Competition Bureau the power to require provision of relevant information in the context of conducting market studies and advocacy activities. Require federal government agencies to "comply or explain" in response to the Bureau's recommendations	No action taken.
To level the playing field between cable and satellite companies and new media, consider subsidising Canadian content through general taxation.	No action taken.
Consider deeper integration within North America to establish a common aviation market.	No action taken.
Assess the impact of the current ownership structure of large Canadian airports on efficiency and cost competitiveness. Consider selling the largest airports to one or more private companies or set of investors. Alternatively, convert existing airport authorities into one or more for-profit corporations and sell the airport land. At a minimum, tie airport rents to profits or land values rather than revenues by moving towards a for-profit structure for airport authorities.	The federal government is reviewing its policies concerning airports and their governance, in line with its Budget 2016 commitment to look for ways to increase the affordability and sustainability of infrastructure in Canada where that would be in the public interest. No decisions have been taken.
Investigate the extent to which the current slot allocation system at constrained airports is reducing competition and system wide-efficiency. Consider implementing a more competitive process for slot allocation, such as establishing a secondary market, or broadening congestion-based pricing.	No action taken.
Eliminate revenue caps on western grain shipments by rail.	The federal government decided to maintain the caps.
Determine whether the expanded inter-switching zone for Prairie provinces' commodity shipments has led to net benefits for the economy; otherwise allow the provisions to lapse in August 2016.	The provisions were extended indefinitely.
B. Financial–sector policies	
Extend participation in Cooperative Capital Markets Regulatory System to provinces and territories not already participating.	The governments of British Columbia, New Brunswick, Ontario, Prince Edward Island, Saskatchewan, the Yukon and Canada participate. They continue to invite all other provinces and territories to participate.
Move towards a national corporate registration system.	No action taken.
C. Taxation	
Eliminate GST zero rating for basic groceries.	No action taken.
At the provincial level, increase taxes from non-renewable resource development, and raise the share of revenues saved.	No action taken.
Make more use of property taxes and user fees by municipalities, while easing the property tax burden on firms. As their tax base becomes more sustainable, reduce local authorities' reliance on provincial transfers by granting them more revenue-raising powers.	No action taken.
D. Social and labour market policies	
Adopt employer- or employee-targeted measures that improve the insurance and incentive basis of the Employment-Insurance (EI) programme, thereby cutting repeat use, and enhance opportunities for seasonal workers to retrain.	No action taken to improve the insurance and incentive basis of the EI programme. Additional investments through Labour Market Development Agreements with key provinces were announced in Budget 2018 to help seasonal workers to retrain.
E. Tertiary education and skills shortages	
Increase differentiation between institutions that engage in research and those that focus primarily on teaching, as has occurred in Ontario.	No action taken.
Promote a more flexible delivery model of higher education to encourage skills upgrading by strengthening credit transfer arrangements between tertiary education institutions and provinces.	No action taken.
In provinces with constrained public finances, evaluate whether tuition policies undermine institutional quality and competitiveness.	No action taken.

Recommendations in previous *Surveys*	Actions taken since May 2016 and current assessment
Replace the lifetime capital gains tax exemption by a more targeted measure of benefit to high-potential young firms.	No action taken.
Review Business Development Bank of Canada (BDC) programmes to ensure that they are focused on efficiently addressing clear capital-market failures. Encourage the BDC venture capital arm to shift from direct seed capital investments to passive side-car investments with angel investors.	The BDC has a legislative mandate to offer services that are complementary to those offered by private financial institutions. Through its annual corporate reporting process, the BDC has provided the government updates on how it is meeting its complementarity mandate, including changes to its venture capital strategy and lending to women entrepreneurs. The BDC will undergo a more in-depth legislative review in 2020 that assesses its effectiveness in the current economic and financial climate.
Subject the Industrial Research Assistance Program (IRAP) and other R&D support programmes to rigorous cost-benefit evaluations.	As an outcome of the 2017 horizontal review of federal business innovation programmes, the Government of Canada will be collecting better data to be able to evaluate interventions in a robust manner, with new funding for this purpose provided in Budget 2018 to Statistics Canada and the Treasury Board Secretariat.
Encourage tertiary education institutions to include training in entrepreneurship and business skills in their science-based programmes.	Collaborative networks/partnerships are being established between employers and post-secondary education institutions through the Student Work Placements programme to promote entrepreneurial skills and experiences for STEM students. Budget 2017 provided CAD 221 million over five years, starting in 2017–18, to provide work experience in businesses to Canadian post-secondary students, generally at the graduate-level. Funding is delivered by Mitacs, a not-for-profit organisation that builds partnerships between industry and educational institutions and has the goal of providing 10,000 work-integrated learning placements for Canadian post-secondary students and graduates each year—up from the 2017 level of 3,750 placements.
Scale up business development support for growth-oriented female ventures.	BDC has committed to investing CAD 200 million in women-led technology firms over 2018-19 to 2022-23.
F. Energy and environmental policies	
Act on Canadian governments' Vancouver declaration to ensure that an adequate price is placed on carbon emissions across the country to allow Canada to meet its international commitments.	The federal, provincial and territorial governments adopted the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) in December 2016. A core component is ensuring that GHG emissions are subject to a minimum price across the country. The price is to rise from CAD 10 per tonne of CO_2 equivalent in 2018 to CAD 50 by 2022. All provinces and territories except Saskatchewan have signed on to the PCF. The federal government will introduce an explicit carbon-pricing system, which will apply in jurisdictions that do not have carbon pricing in place by end-2018.
Make greater use of road-use charging and parking fees to encourage commuters to switch to public transit.	No action taken.
Regularly review water pricing and rights to ensure efficient use. Check that Alberta's water allocation and licence transfer processes reach conservation objectives.	No action taken.
Review the efficiency of promoting corn and cellulosic ethanol and other biofuels. Rather than imposing regulatory mandates, offer increased research subsidies or prizes for technological breakthroughs if a carbon tax or permit trading is infeasible in agriculture.	No action taken.
Review the oil-sands tenure process regularly, and remove the exploration/production requirement to make it consistent with Alberta's sustainability objectives.	No action taken.
Provide clear guidelines for resource companies on how to engage with affected Aboriginal groups so that projects bring long-term benefits to these communities.	The federal government recently tabled legislation in Parliament outlining a new impact assessment regime that proposes better rules for major project reviews to protect Canada's environment and grow the economy. These rules include: early, inclusive and meaningful public engagement; nation-to-nation, Inuit-Crown, and government-to-government partnerships with Indigenous peoples; timely decisions based on the best available science and Indigenous traditional knowledge; and sustainability for present and future generations.
G. Agricultural policies	
Phase out the supply management regimes by the progressive introduction of market forces, in particular, for milk and eggs.	The Senate tasked Ernst and Young to report on the effects of supply management. This report has not been published.