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This 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.

The economic situation and policies of Canada were reviewed by the Committee on 9 May 2016. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 27 May 2016.

The Secretariat's draft report was prepared for the Committee by David Carey and Corinne Luu, who benefitted from technical background papers prepared by John Lester and Mark Ronayne, under the supervision of Peter Jarrett. Research assistance was provided by Isabelle Luong and secretarial assistance by Dacil Kurzweg.

The previous Survey of Canada was issued in June 2014.

BASIC STATISTICS OF CANADA, 2015

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	36.1		Population density per km²	3.6	(35.1)
Under 15 (%)	16.4	(18.0)	Life expectancy (years, 2011[a])	81.5	(80.5)
Over 65 (%)	15.9	(16.3)	Men	79.3	(77.8)
Foreign-born (%, 2011)	19.6		Women	83.6	(83.1)
Latest 5-year average growth (%)	0.9	(0.4)	Latest general election	October	2015

ECONOMY

Gross domestic product (GDP)			Value added shares (%, 2012[b])		
In current prices (billion USD)	1 555.3		Primary sector	1.8	(2.4)
In current prices (billion CAD)	1 985.7		Industry including construction	28.2	(26.6)
Latest 5-year average real growth (%)	2.1	(1.7)	Services	70.0	(71.1)
Per capita (000 USD PPP)	45.1	(40.2)			

GENERAL GOVERNMENT

Per cent of GDP

Expenditure[b]	40.3	(42.3)	Gross financial debt[b]	98.5	(118.8)
Revenue	38.6	(39.1)	Net financial debt[b]	31.8	(76.0)

EXTERNAL ACCOUNTS

Exchange rate (CAD per USD)	1.277		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	1.220		Machinery and transport equipment	28.8	
In per cent of GDP			Mineral fuels, lubricants and related materials	19.0	
Exports of goods and services	31.4	(54.1)	Manufactured goods	11.8	
Imports of goods and services	33.8	(50.2)	Main imports (% of total merchandise imports)		
Current account balance	-3.3	(0.1)	Machinery and transport equipment	43.4	
Net international investment position (2014)	6.6		Miscellaneous manufactured articles	12.4	
			Manufactured goods	12.1	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate for 15-64 year-olds (%)	72.5	(66.2)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	6.9	(6.8)
Men	75.6	(74.1)	Youth (age 15-24, %)	13.2	(13.9)
Women	69.4	(58.5)	Long-term unemployed (1 year and over, %, 2014)	0.9	(2.5)
Participation rate for 15-64 year-olds (%)	78.0	(71.2)	Tertiary educational attainment 25-64 year-olds (%, 2013)	53.2	(33.3)
Average hours worked per year (2014)	1 704	(1 770)	Gross domestic expenditure on R&D (% of GDP, 2014)	1.6	(2.4)

ENVIRONMENT

Total primary energy supply per capita (toe, 2014)	7.2	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2013)	15.2	(9.6)
Renewables (% of total, 2014)	18.3	(9.1)	Water abstractions per capita (1 000 m^3, 2013)	1.0	
Fine particulate matter concentration (PM2.5, µg/m^3, 2013)	12.1	(13.8)			

SOCIETY

Income inequality (Gini coefficient, 2011[c])	0.315	(0.308)	Education outcomes (PISA score, 2012)		
Relative poverty rate (%, 2011[c])	11.8	(10.9)	Reading	523	(496)
Median equivalised household income (000 USD PPP, 2011[c])	27.7	(20.4)	Mathematics	518	(494)
Public and private spending (% of GDP)			Science	525	(501)
Health care, current expenditure (2014[a])	10.0	(8.9)	Share of women in parliament (%, April 2016)	28.3	(27.7)
Pensions (2012[d])	4.5	(8.7)	Net official development assistance (% of GNI)	0.28	(0.39)
Education (primary, secondary, post sec. non tertiary, 2012)	3.6	(3.7)			

Better life index: *www.oecdbetterlifeindex.org*

a) 2013 for the OECD aggregate.
b) 2014 for the OECD aggregate.
c) 2012 for the OECD aggregate.
d) 2011 for the OECD aggregate.

* Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

Glossary

AEG	Atlantic Energy Gateway
AIT	Agreement on Internal Trade
ASAs	Air Service Agreements
BDC	Business Development Bank of Canada
BDUs	Broadcasting Distribution Undertakings
CATSA	Canadian Transportation Security Authority
CBC	Canadian Broadcasting Corporation
CCB	Canada Child Benefit
CCPCs	Canadian Controlled Private Corporations
CIT	Corporate Income Tax
CMHC	Canada Mortgage and Housing Corporation
CN	Canadian National
CP	Canadian Pacific
CPCS	Canadian Pacific Consulting Services
CPP	Canada Pension Plan
CRTC	Canadian Radio-Television and Telecommunication Commission
CTA	Canadian Transportation Agency
EI	Employment Insurance
EPL	Employment Protection Legislation
FDI	Foreign Direct Investment
FERC	Federal Energy Regulatory Commission
FFPs	Frequent Flyer Programmes
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GST	Goods and Services Tax
HFCs	Hydrofluorocarbons
HST	Harmonised Sales Tax
IIF	Innovation Investment Funds
ISPs	Internet Service Providers
LNG	Liquid Natural Gas
LSVCCs	Labour-Sponsored Venture Capital Corporations
METR	Marginal Effective Tax Rate
MNO	Mobile Network Operations
NEB	National Energy Board
NPLs	Non Performing Loans
NWPTA	New West Partnership Trade Agreement
OATTs	Open Access Transmission Tariffs
OEB	Ontario Energy Board
OSFI	Office of the Superintendent of Financial Institutions

PMR	Product Market Regulation
PST	Provincial Sales Tax
QPP	Québec Pension Plan
R&D	Research and Development
RHAs	Regional Health Autorities
SBD	Small Business Deduction
SBFP	Small Business Financing Programme
SBIR	Small Business Innovation Research Programme
SMEs	Small and Medium Enterprises
SNA	System of National Accounts
SR&ED	Scientific Research & Experimental Development
STRI	Service Trade Restriction Index
TCA	(Ontario – Quebec) Trade and Cooperation Agreement
VAT	Value Added Tax
VC	Venture Capital
WCI	Western Climate Initiative

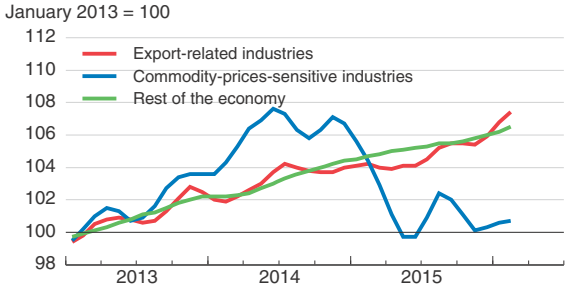
Executive summary

- *Activity is shifting from energy to non-energy sectors in response to price signals*
- *Vulnerabilities related to housing and household debt are still increasing, albeit at a slower pace*
- *Productivity growth has been weak until recently*

Activity is shifting from energy to non-energy sectors in response to price signals

Output is adjusting to lower commodity prices

Three-month moving average of real output



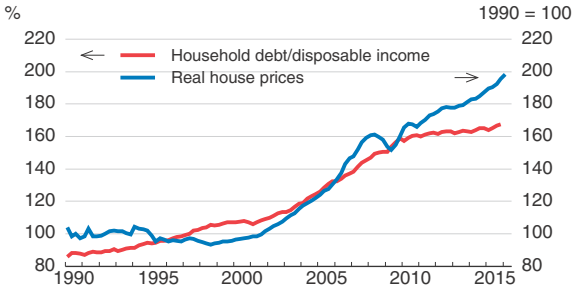
Source: Bank of Canada (2016), *Monetary Policy Report*, April; Statistics Canada, Table 379-0031.

StatLink http://dx.doi.org/10.1787/888933370730

The Canadian economy is adjusting to the fall in commodity prices, energy in particular. Business investment has fallen sharply in the energy sector, and employment has declined in oil-producing provinces. These factors, together with the loss of income from the fall in the terms of trade, temporarily depressed economic growth in 2015. Output has fallen sharply in industries most affected by commodity prices but has risen in the rest of the economy, especially in export-related industries, allowing new job creation to re-employ displaced workers. Exchange rate depreciation, Canada's flexible labour markets and monetary and fiscal policy are supporting the shift towards non-resource production.

Vulnerabilities related to housing and household debt are still increasing, albeit at a slower pace

Household debt and house prices are high



Source: Statistics Canada, Table 378-0123; OECD, Economic Outlook database.

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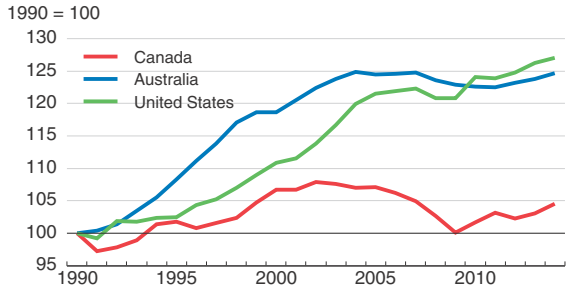
Low interest rates have encouraged further increases in household credit, with household debt continuing to edge up from already high levels. Canadian house prices have risen sharply, especially in Vancouver and Toronto, and housing investment is unusually high as a share of GDP, posing vulnerabilities and squeezing middle-class families in these high-priced markets. In response to these developments, the authorities have deployed some targeted macro-prudential measures, but further regionally focused measures should be considered.

Productivity growth has been weak until recently

Multifactor productivity has stagnated



Source: Australian Bureau of Statistics; US Bureau of Labor Statistics; Statistics Canada

StatLink http://dx.doi.org/10.1787/888933370758

Productivity has grown more slowly than in the best performing comparable OECD countries in recent decades, holding back living standards and well-being. This weakness in productivity growth is broad based. There are several potential explanations, although it is difficult to identify the most important. Among them are high barriers to competition in network sectors which impede innovation and productivity growth. Interprovincial non-tariff barriers hamper efficiency, particularly by reducing the scale of production. Improved small business dynamism, with higher start-up rates and strengthened "up-or-out dynamics", would speed the reallocation of resources to more productive firms and the diffusion of new technologies, raising productivity.

MAIN FINDINGS	KEY RECOMMENDATIONS
Reducing financial stability risks	
House prices, housing investment and household debt are very high, posing financial stability risks.	Continue to tighten macro-prudential measures and target them regionally, including through increasing capital requirements in regions with high house price-to-income ratios, as planned.
Making growth stronger, greener and more inclusive	
The federal government has a strong fiscal position, with room to support demand in the short term, speed resource reallocation and promote longer-term growth and inclusiveness.	Increase federal investment in physical infrastructure, social housing, education and innovation, as planned.
Canada will soon face the pressures from an ageing population and will need to use all available sources of labour, including its Indigenous Peoples, who continue to face poor social and economic outcomes.	Continue towards sharing more of the fruits of growth with Canada's Indigenous Peoples through providing more resources for their education, training, health care, housing, entrepreneurship and environmental infrastructure servicing their communities, as planned.
Carbon emissions are high both in per capita terms and relative to GDP, partly reflecting high emissions from road transportation and mining, oil and gas. Some provinces have made largely uncoordinated moves to put a price on carbon emissions.	Canadian governments should act on their recent Vancouver declaration to ensure that an adequate price is placed on carbon emissions across the country to allow Canada to meet its international commitments.
Raising productivity	
Barriers to competition in network sectors are high, which weakens competitive pressures to innovate and adopt new technologies.	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.
Electricity markets are highly fragmented, with few competitive regional wholesale and retail markets, weakening efficiency.	Develop more east-west 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.
Non-tariff interprovincial barriers lower efficiency, particularly by reducing the scale of production. While the Agreement on Internal Trade (AIT) has reduced such barriers, weaknesses in its framework and dispute resolution mechanisms and the absence of agreements in particular sectors limit its effectiveness.	Broaden the 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.
Tax breaks to SMEs do not appear to address market failures efficiently and insufficiently target potentially productive firms.	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.
Firms funded by Labour-Sponsored Venture Capital Corporations (LSVCCs) underperform those funded by private venture capital owing to less effective mentoring.	Phase out remaining federal tax credits for provincial 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.

Assessment and recommendations

- *Recent economic developments and near-term prospects*
- *Regional adjustments to terms-of-trade declines and policies to facilitate the sectoral shift*
- *Ensuring price and financial stability*
- *Fiscal policies to raise the incomes of all Canadians*
- *Boosting productivity and living standards*
- *Improving environmental policies to promote sustainability and productivity*

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

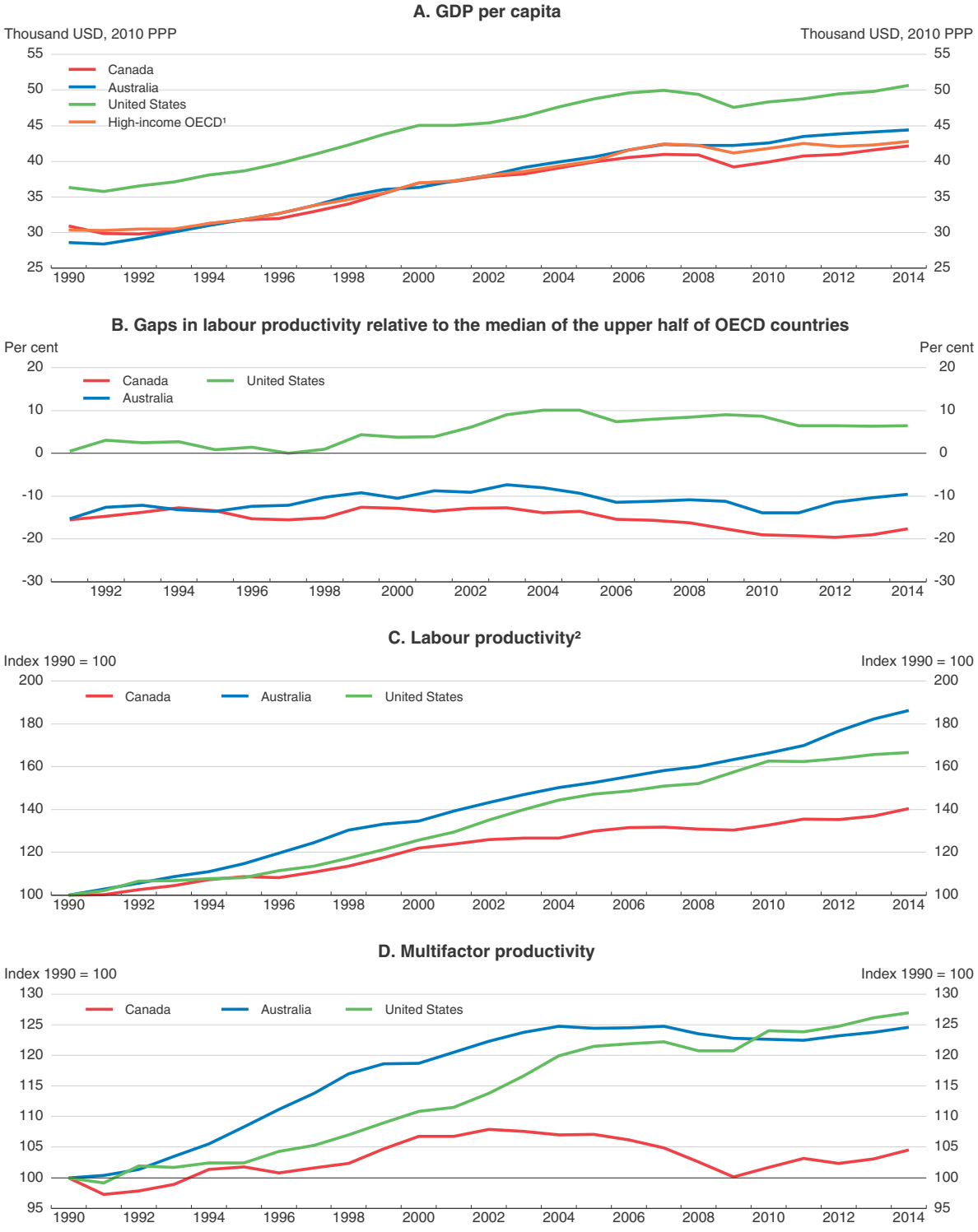
The Canadian economy has grown solidly since the turn of the century. The level and increases in GDP per capita have been similar to rates for the median of the most affluent OECD countries; labour productivity, however, remains lower in Canada (Figure 1, Panels A and B). Canada also recovered more strongly from the global financial crisis than most other OECD countries, helped by the impressive rise in commodity prices that was sustained until mid-2014, a comparatively strong recovery in the United States, Canada's main trading partner, a prudent banking system and supportive fiscal and monetary policies.

Canada has a large territory (covering nearly 10 million square kilometres), is topographically varied and sparsely populated (population density is only a tenth of the OECD average), even if a large share of the population lives in widely separated large urban centres. Its people have diverse backgrounds, with one of the world's highest shares of immigrants (nearly 20%) and a small but rapidly growing population of Indigenous Peoples (including First Nations, Métis and Inuit), who make up a further 4% of the population. Many public responsibilities are devolved to governments of the 10 provinces and three territories that comprise the confederation. The provinces' main powers are in the areas of taxation, health care, education, natural resources and energy, environment and labour market regulation.

Canada scores highly in all dimensions of the OECD's Better Life Index (Figure 2, Panel A). Household disposable income and wealth are above the OECD average, while outcomes in jobs and earnings and housing are well above average. On the non-economic dimensions, Canada does particularly well in health status but less so in work-life balance. Its scores are very similar to Australia's, another high-income commodity exporter, except in civic engagement and governance, which is lower, and are as good as or better than those of the United States in all dimensions except income. Income inequality is slightly below the OECD average, reflecting relatively low inequality in gross incomes (the reduction in income inequality through taxes and transfers is less than the OECD average), as is the poverty rate (Panel B).

A weakness in socio-economic outcomes concerns Canada's Indigenous Peoples, who currently number around 1.4 million (4.3% of the population, but as many as 16.7% in Manitoba and higher proportions still in the territories), are much younger on average than other Canadians and are growing quickly in number. They suffer from various critical social problems (Table 1). Indigenous Peoples are often poor and are more likely than other Canadians to live in sub-standard housing, to drop out of school, to take up smoking and heavy drinking, to suffer from health problems, to commit suicide and to have their children grow up in lone-parent or foster homes. They are also almost 20% less likely to be employed than their non-Indigenous counterparts. Appropriately, the new federal government has made improving outcomes for Indigenous Peoples a top priority (see below).

Figure 1. **GDP per capita and labour productivity**

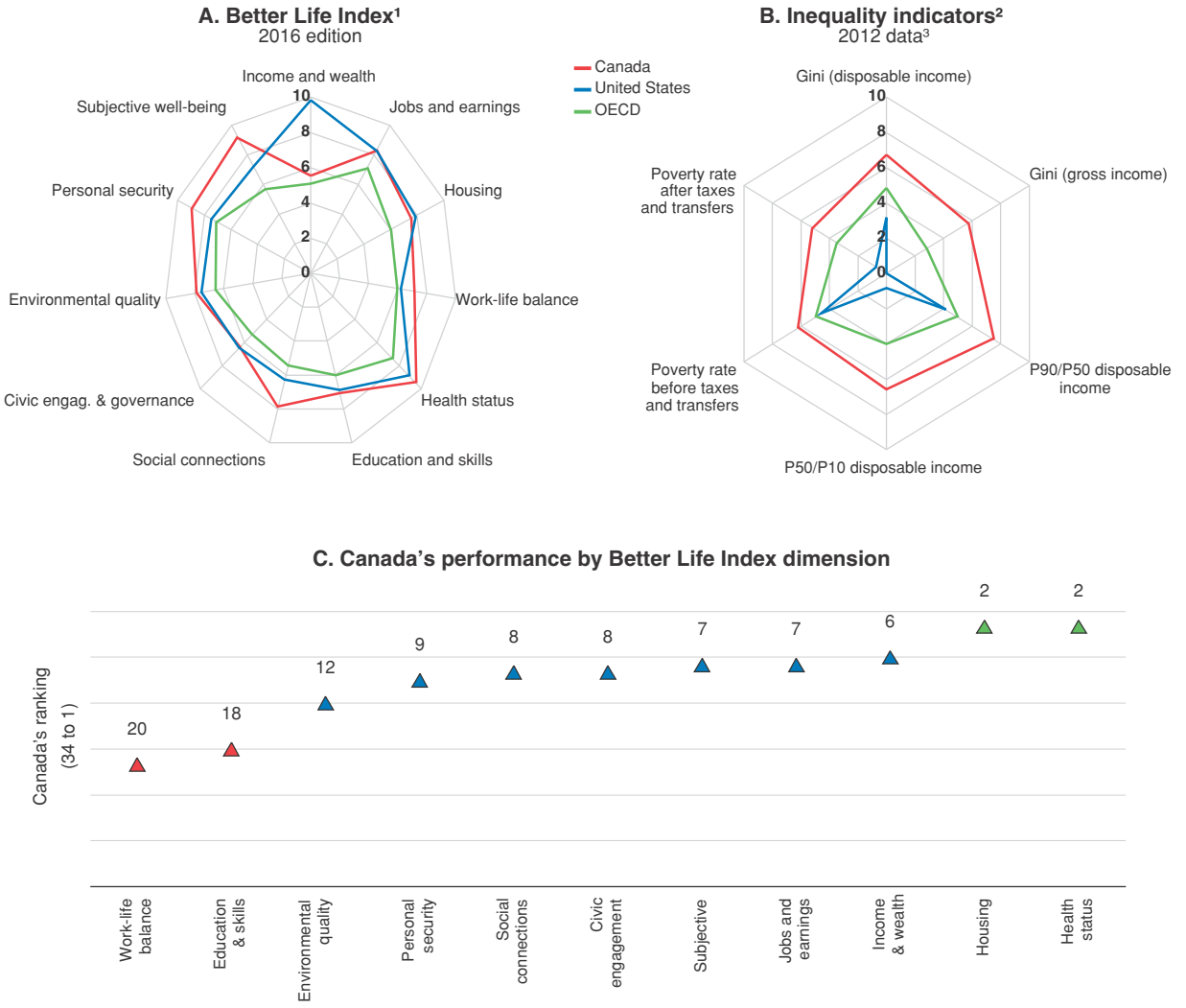


1. High-income OECD is the median of the highest 17 OECD countries.
2. In the business sector.

Source: Australian Bureau of Statistics, Cat. 5260.0.55.002; US Bureau of Labor Statistics; Statistics Canada, Table 383-0021; OECD (2016), *Economic Policy Reforms: Going for Growth 2016*.

StatLink http://dx.doi.org/10.1787/888933370761

Figure 2. **Measures of well-being**



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) × 10. The OECD aggregate is weighted by population. Please note that the OECD does not officially rank countries in terms of their BLI performance.
2. Indicators are normalised to range between 0 (highest inequality) and 10 (lowest inequality or poverty rate). The OECD aggregate is weighted by population.
3. 2011 data for Canada.

Source: OECD (2016), OECD Better Life Index, www.oecdbetterlifeindex.org; OECD, Income Distribution database.

StatLink http://dx.doi.org/10.1787/888933370779

Canada has been used to achieving rapid economic growth: in the 15 years prior to the 2008-09 downturn, real GDP grew at an annual average rate of 3.2%. But much of that growth came from increasing labour and capital inputs, with little in the way of efficiency gains. In recent years, progress in raising living standards has been more limited, with slower growth outcomes. The recovery since the 2009 recession trough has generated gains in GDP per capita nearly a full percentage point smaller than in the aftermath of the preceding similar trough in 1992 (Table 2). Looking below the surface,

Table 1. **Selected socio-economic outcome indicators for Canadian Indigenous Peoples, 2011**

	Indigenous Peoples	Others
Number / % share	1.40 m (4.3%)	
per memorandum Indigenous in Australia	0.67 m (3.0%)	
per memorandum Maori in New Zealand	0.60 m (15.0%)	
Demographics		
Median age	28	41
Share of the 0- 24 years old	46.2	29.5
Children's living arrangements		
% living with 2 parents	49.6	76.0
% step children	8.5	5.8
% living with relatives	3.9	0.6
% foster children	36	0.3
% living with one parent	34.4	17.4
Housing conditions		
% in crowded dwellings	11.2	4.0
% in dwellings in need of major repair	21.5	6.8
Education		
% without a high school diploma	30	12
Skills		
PIACC literacy score, 2012	260	274
PIACC numeracy score, 2012	244	266
Employment outcomes		
% employed, 25 – 64	62.5	75.8
Income		
Median after-tax income, 2010, CAD	20 060	27 622
Health outcomes		
% self-rated excellent or very good, 12 and over	52.1	60.5
% self-rated excellent or very good, 25 – 44	52.9	67.1
% self-rated excellent or very good, 45 and over	40.6	52.7
% daily smokers	27.5	15.1
% heavy drinkers	32.7	22.5
% with moderate or severe food insecurity, off reserve only	22	7

Source: Statistics Canada.

Table 2. **A comparison of the recoveries following the 1990-92 and 2007-09 recessions**

Average annual percentage change

	The current recovery	The 1990s recovery	Difference
Real GDP per capita:	1.27	2.22	0.95
Hourly labour productivity	1.07	1.49	0.42
Hours worked per employed person	0.04	0.09	0.05
One minus the unemployment rate	0.26	0.54	0.28
Participation rate	0.23	-0.01	-0.24
Working-age to total population	-0.33	0.09	0.42

Source: OECD.

slower gains in hourly productivity and less favourable demographics are the leading explanatory factors, along with the smaller decline in unemployment. The worse labour productivity performance is entirely due to a deterioration in multi-factor productivity growth, as capital intensity actually rose more quickly in the recent period than in the 1990s. And the outlook is for similar trends to persist, with annual GDP growth potential already down to an estimated 1.5% or so, as Canada's population ages because of low fertility rates and rising life expectancy, given the number of immigrants that could be feasibly absorbed. In the future it will have to seek out remaining pockets of underutilised labour resources – such as women and Canadian Indigenous Peoples – and find ways of boosting productivity growth through increased competition, innovation and skills. Canada's policymakers are focusing on lifting growth in GDP per capita and productivity to the rates achieved by comparable countries that perform better, such as the United States and Australia. There is considerable scope for improvement in business-sector productivity, which, by some measures, has been flat for over two decades (Figure 1, Panel C).

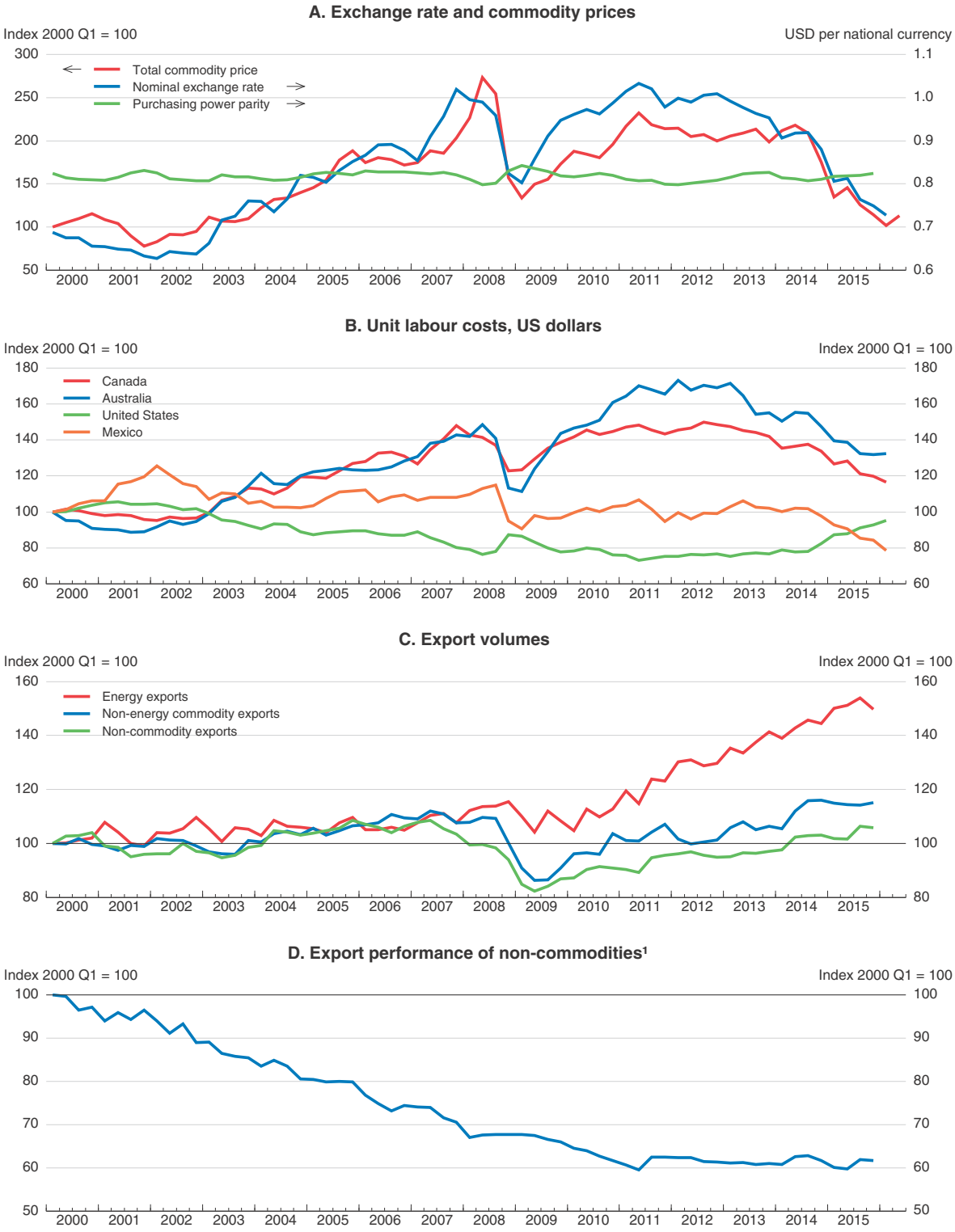
Improving outcomes is likely to be all the more challenging now that a downward phase of the commodity price cycle is underway (Figure 3, Panel A). While the earlier price run-up boosted incomes and business investment (especially in energy and mining), the fall since mid-2014 is having the opposite effect. The commodities upswing caused Canada's real exchange rate to appreciate, resulting in a large loss in cost competitiveness and a concomitant reduction in productive capacity in non-commodity tradable goods and services (Panels B, C and D). Nevertheless, the more recent exchange rate depreciation, relatively flexible economy and supportive monetary and fiscal policies will facilitate the shift in economic activity away from natural resources.

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

- Activity is shifting from resource to non-resource sectors in response to the fall in oil and other commodity prices. This shift would be facilitated by increasing product market competition and strengthening small business dynamism.
- House prices and household debt relative to disposable incomes are high and rising in some local markets, reducing affordability and raising financial vulnerabilities.
- Productivity has been relatively weak in recent decades, in part reflecting insufficient competition in network sectors, barriers to internal trade and lacklustre small business dynamism.

Chapter 1 explores in greater detail how barriers to competition in network sectors and inter-provincial trade can be lowered. Chapter 2 provides an in-depth look at how policies can be modified to increase small business dynamism and hence productivity in the Canadian economy.

Figure 3. **Key challenges for the Canadian economy**



1. Export performance is export volume changes relative to export market growth. Hence, Canadian non-commodity exporters lost 40% of their market share from 2000 to 2011.

Source: OECD, Economic Outlook 99 database; Statistics Canada, Tables 380-0070 and 176-0075.

StatLink http://dx.doi.org/10.1787/888933370789

Recent economic developments and near-term prospects

GDP declined in early 2015, led by a sharp fall in business investment in the oil and gas sector, which was hit hard by the collapse in global oil prices (Table 3; Figure 4, Panels A and B). Private consumption expenditure also slowed, albeit moderately, weighed down by losses of income and wealth associated with the deterioration in the terms of trade and falling employment growth in the energy-producing provinces (Panels A and C). Yet, after a weak first half of 2015, output began to expand more strongly outside the oil and gas sector in response to: cumulative and prospective macroeconomic policy stimulus, restored international competitiveness and the reversal of some temporary factors. Real GDP looks to have risen at about a 3% annualised rate in the first quarter of 2016. However, second-quarter output will be dragged down significantly by the weak expected starting point in

Table 3. **Macroeconomic indicators and projections**

Annual percentage change, volume (2007 prices)

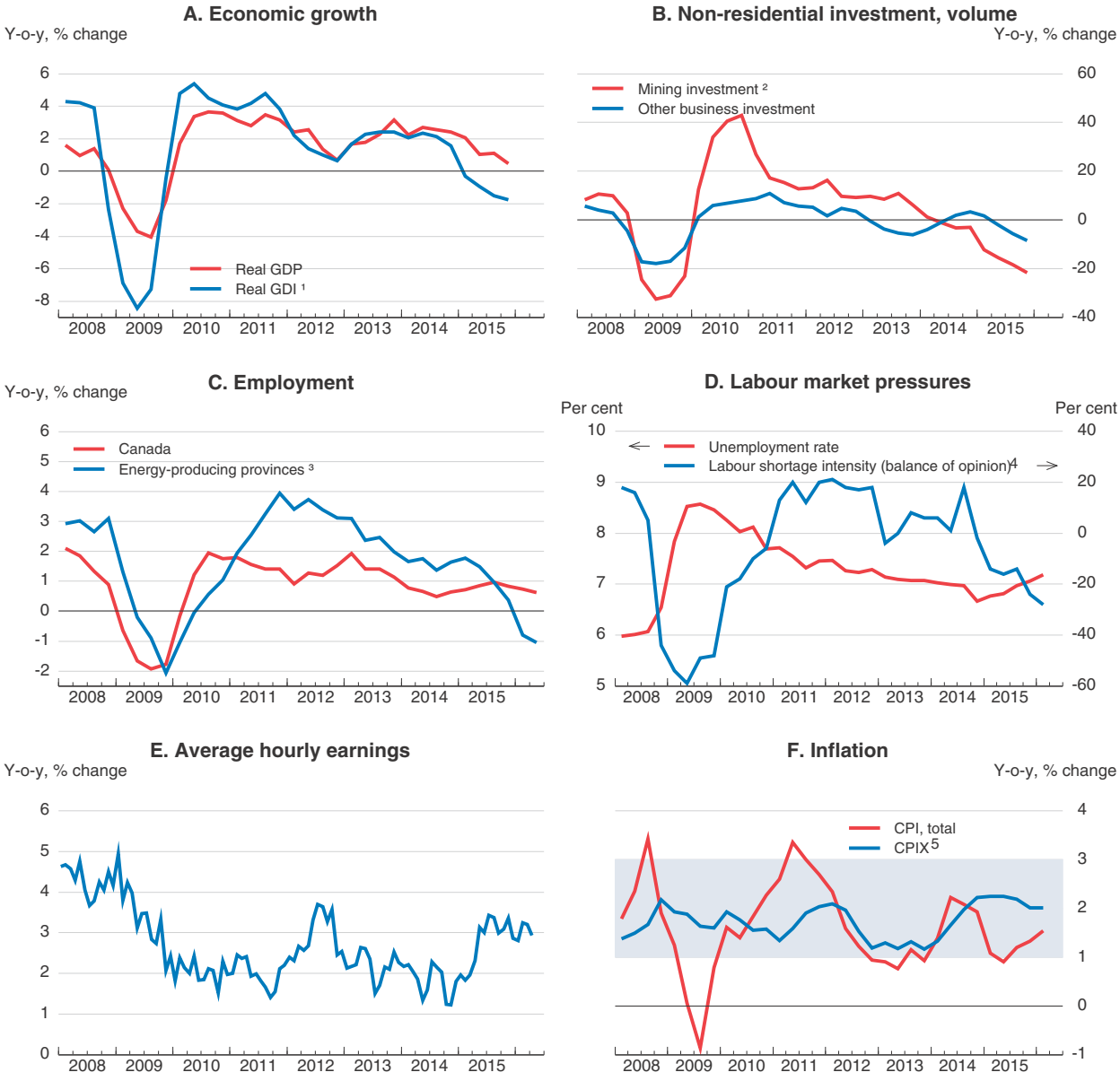
	2012					
	Current prices (CAD billion)	2013	2014	2015	2016	2017
Gross domestic product (GDP)	**1 823**	**2.2**	**2.5**	**1.2**	**1.7**	**2.2**
Private consumption	1 021	2.4	2.5	1.9	1.7	2.1
Government consumption	385	0.3	0.3	1.4	1.5	1.7
Gross fixed capital formation	448	-0.5	0.7	-3.6	-1.5	2.7
Housing	132	-0.3	2.5	3.7	1.5	0.9
Business	240	1.3	-0.6	-9.4	-4.7	2.8
Government	75	-6.3	2.2	2.7	2.7	6.0
Final domestic demand	1 853	1.3	1.6	0.5	0.9	2.2
Stockbuilding[1]	6	0.6	-0.4	-0.2	-0.4	0.0
Total domestic demand	1 859	1.8	1.3	0.3	0.5	2.2
Exports of goods and services	551	2.8	5.3	3.0	2.1	4.6
Imports of goods and services	587	1.5	1.8	0.1	-1.5	4.4
Net exports[1]	- 36	0.4	1.0	0.9	1.1	0.0
Other indicators (growth rates, unless specified)						
Potential GDP	..	1.9	1.8	1.7	1.5	1.5
Output gap[2]	..	-1.4	-0.8	-1.3	-1.1	-0.5
Employment	..	1.4	0.6	0.9	0.6	1.0
Unemployment rate[3]	..	7.1	6.9	6.9	7.1	6.8
GDP deflator	..	1.6	1.8	-0.5	1.2	2.1
Consumer price index	..	0.9	1.9	1.1	1.7	2.1
Core consumer prices	..	1.2	1.8	2.2	2.0	2.1
Household saving ratio, net[4]	..	5.1	4.0	4.3	4.3	4.3
Trade balance[5]	..	-0.3	0.2	-1.2	..	..
Current account balance[5]	..	-3.2	-2.3	-3.3	-3.0	-3.0
General government fiscal balance[5]	..	-1.9	-0.5	-1.7	-2.2	-2.2
Underlying government primary fiscal balance[2]	..	-0.3	0.5	0.1	-0.4	-0.9
General government gross debt [5, 6]	..	90.3	93.2	98.5	99.8	100.7
General government net debt[5, 6]	..	31.2	31.7	31.8	33.1	34.0
Three-month money market rate, average	..	1.2	1.2	0.8	0.9	1.5
Ten-year government bond yield, average	..	2.3	2.2	1.5	1.5	2.3

1. Contribution to changes in real GDP.
2. As a percentage of potential GDP.
3. As a percentage of the labour force.
4. As a percentage of household disposable income.
5. As a percentage of GDP.
6. SNA basis excluding unfunded liabilities of government-employee pension funds.

Source: OECD (2016), OECD Economic Outlook 99 database.

March, driven by the decline of net export volumes that month, and by the reduction in oil-sands output in Alberta in May that resulted from an unusually large forest fire that caused the complete evacuation of the town of Fort McMurray.

Figure 4. **Recent macroeconomic developments**



1. Real GDI equals real GDP adjusted for changes in the terms of trade.
2. Includes oil and gas. Also includes some engineering structures investment that may relate to other sectors.
3. The energy-producing provinces are Alberta, Saskatchewan, and Newfoundland and Labrador which together represented 17 per cent of total employment in 2015.
4. Percentage of firms reporting more intense labour shortages minus the percentage reporting less intense shortages.
5. The Bank of Canada monitors a set of "core" inflation measures, for example, the CPIX, which strips out eight of the most volatile CPI components and the effect of indirect taxes on the remaining components.

Source: OECD, Economic Outlook database; Statistics Canada, Tables 380-0068, 282-0087, 282-0151 and 326-0020; Bank of Canada (2016), *Business Outlook Survey – Results of the Spring 2016 Survey*, April.

StatLink http://dx.doi.org/10.1787/888933370796

The unemployment rate fell sharply during the recovery from the 2008-09 recession but has edged back up over 7% (Figure 4, Panel D), reflecting a jump in energy-producing provinces. Wage growth picked up to around 3% (year-on-year) during the first half of 2015 and has since continued at this pace (Panel E). Although net job gains have been mainly in full-time positions, many have been in self-employment, which is usually associated with weak economic activity.

CPI inflation is running in the lower part of the 1-3% official target band (Figure 4, Panel F), although the Bank of Canada's core index is rising at a pace near the 2% midpoint. Renewed downward pressure from falling gasoline prices and a small degree of excess capacity in the economy are more than offsetting upward pressure from the pass-through of earlier exchange rate depreciation, which the Bank of Canada (2016a) estimates to have been worth about 0.8 to 1.0 percentage point in the year to Q1 2016.

Canada's current account was in moderate surplus from the turn of the century until the 2008 downturn, when a large fall in the terms of trade pushed the balance into deficit of around 3% of GDP, where it has since remained (except in 2014, when the deficit was 2.3% of GDP). Most of the deterioration has been in the goods component, although services and private transfers also contributed significantly. On the other hand, direct investment income has increased, reflecting higher foreign direct investment assets. Despite continued current account deficits, the net international investment position increased from negative 17.9% of GDP at end-2012 to 23.8% of GDP three years later, largely driven by the impact of the sharp depreciation in the Canadian dollar: more of Canada's assets are denominated in foreign currency than its liabilities.

Economic growth is projected to strengthen in 2016 and reach 2.2% in 2017 (Table 3). As the contraction in the resource sector slows and economic activity in the rest of the economy gains traction, the drag from falling investment and employment in the commodity-producing sector should soon peak and then fade away by late 2017. Non-energy exports should continue to benefit from the lower Canadian dollar and get a further boost from strengthening export market growth (the United States remains by far Canada's largest trading partner: it took 75.6% of Canada's merchandise exports in 2015; with China, the next largest destination, taking only 4.1% of the total). Some sectors are likely to continue to face longer-term competitiveness challenges, as there is little sign that production has moved towards higher technology industries or that capital intensity has risen. Interest rates are assumed to remain very low for an extended period, and federal fiscal policy is turning expansionary (see below). The unemployment rate is projected to edge back down to 6 ¾ per cent by late 2017. Consumer price inflation is likely to be close to 2% in 2017, assuming the exchange rate and oil prices are steady, as the pass-through from exchange rate depreciation dissipates and excess capacity is gradually eliminated.

The most important risks surrounding these projections are external. Global oil prices could fall still further, amplifying cuts in energy-sector investment and employment; but if prices continue to recover, so will these sectors. Developments in emerging markets, notably China, will have an important bearing on commodity prices and export demand. On the domestic front, the main downside risk is still a disorderly housing market correction, particularly in the high-price Toronto and Vancouver markets (see below). This would dampen residential investment and private consumption, and could threaten financial stability. In addition, the transition from commodity-producing sectors to other sectors could be more protracted than expected. The main upside risk is that the economic

expansion in the United States could be stronger than expected, lifting demand for Canadian exports. Some extreme but inherently unquantifiable potential shocks are described in Table 4.

Table 4. **Possible extreme shocks affecting the Canadian economy**

Shock	Possible impact
Financial-sector crisis starting in China	Such a crisis would lead to a sharp downturn in global growth and trade volumes, putting further downward pressure on natural resource prices and lowering Canadian incomes. These effects could be accentuated by increased risk premiums, which would increase the cost of capital for businesses and further depress investment, and by spreading protectionism abroad. The resulting real exchange rate depreciation would help to offset adverse effects on income and employment, although such beneficial effects could be slow to appear. Moreover, economic rotation towards non-commodity exports would be slowed by falling foreign demand.
House prices	A very sharp fall in house prices triggered by a shock that results in a large increase in unemployment could result in a rise in mortgage defaults and put pressure on financial stability.
European Union fragmentation	Should, for example, the United Kingdom decide to leave the European Union in the imminent referendum, there would be widespread financial market instability, including beyond Europe, with adverse economic consequences for advanced countries, including Canada.

Macro-financial vulnerabilities have generally eased since the onset of the global financial crisis (Box 1), with the exception of financial stability-related vulnerabilities and saving levels (excluding households). In particular, house price rises (measured by the Teranet-National Bank house price index) have accelerated to just over 8% in the year to April 2016, largely driven by increases in Toronto and Vancouver, and household indebtedness has continued to rise, reaching 167.6% of disposable income at the end of 2015, a historical high, placing Canada near the top of the OECD range. Yet, owner's equity has been stable as a share of the value of real estate assets at around 73%, the level of household debt represents only 17% of household assets, and net worth has risen to over eight times disposable income, an historical record. And exchange rate depreciation has contributed to a broad-based decline in external vulnerabilities.

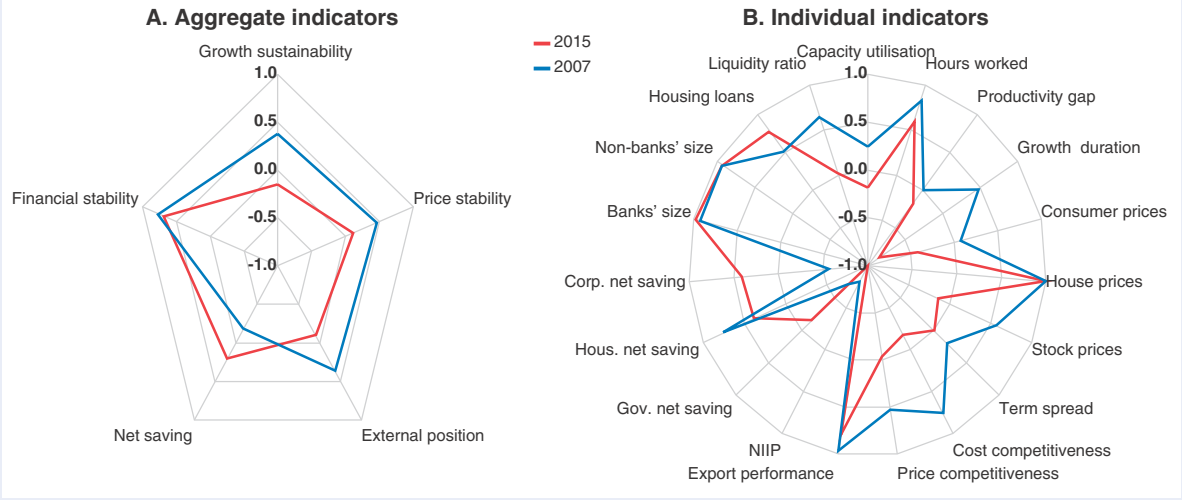
Box 1. **Assessing potential macro-financial vulnerabilities**

As in OECD (2016), potential macro-financial vulnerabilities can be mapped in terms of deviations of indicators from their long-term averages, denoted by zero in Figure 5, with the largest deviations representing the greatest potential vulnerability, denoted by +1 and -1. Selected indicators are derived from recent OECD work on vulnerability indicators (Röhn et al., 2015) and on the linkages between finance and economic growth (Cournède and Denk, 2015).

On average, Canada's potential macro-financial vulnerabilities have fallen since the crisis. The greatest improvements have been in external competitiveness indicators, partly reflecting currency depreciation since 2014. However, financial stability vulnerabilities, which were already elevated, have risen. While bank and non-bank size were already high relative to historical averages, an increased concentration of loans in the residential sector has accentuated vulnerabilities. Lower corporate saving, particularly by financial firms, and weaker government saving have pushed up saving-related vulnerabilities.

Box 1. **Assessing potential macro-financial vulnerabilities** *(cont.)*

Figure 5. **Potential macro-financial vulnerabilities**
Deviations of indicators from their real long-term average (0)[1]



1. With the highest deviations representing the greatest potential vulnerability (+1) and the lowest deviations representing the smallest potential vulnerability (-1).Each aggregate macro-financial vulnerability indicator is calculated by aggregating (simple average) normalised individual indicators. Growth sustainability includes: total industrial capacity utilisation rate, total hours worked as a proportion of the working-age population (hours worked), difference between GDP growth and productivity growth (productivity gap), and an indicator combining the length and strength of expansion from the previous trough (growth duration). Price stability includes: an indicator combining the absolute value of the deviation of core inflation from target and the gap between total and core inflation (consumer prices), the average of the house prices-to-rent ratio and the house prices-to-income ratio (house prices), the Toronto composite share price index adjusted by nominal GDP (stock prices), and the difference between long-term and short-term government bond interest rates (term spread). External position includes: the average of unit labour cost-based real effective exchange rate (REER), and consumer price-based REER (cost competitiveness), relative prices of exported goods and services (price competitiveness), export performance and net international investment position (NIIP) as a percentage of GDP. Net saving includes: government, household and corporate net saving, all expressed as a percentage of GDP. Financial stability includes: banks' size as a percentage of GDP, non-banks' size as a percentage of GDP, housing loans as percentage of total chartered banks' loans, and liquid assets as a proportion of short-term liabilities (liquidity ratio). For the liquidity ratio, the long-term average refers to a period of 10 years only due to the unavailability of data for a longer period.

Source: OECD calculations based on IMF, Financial Soundness Indicators; OECD, Economic Outlook database; Statistics Canada; Thomson Reuters.

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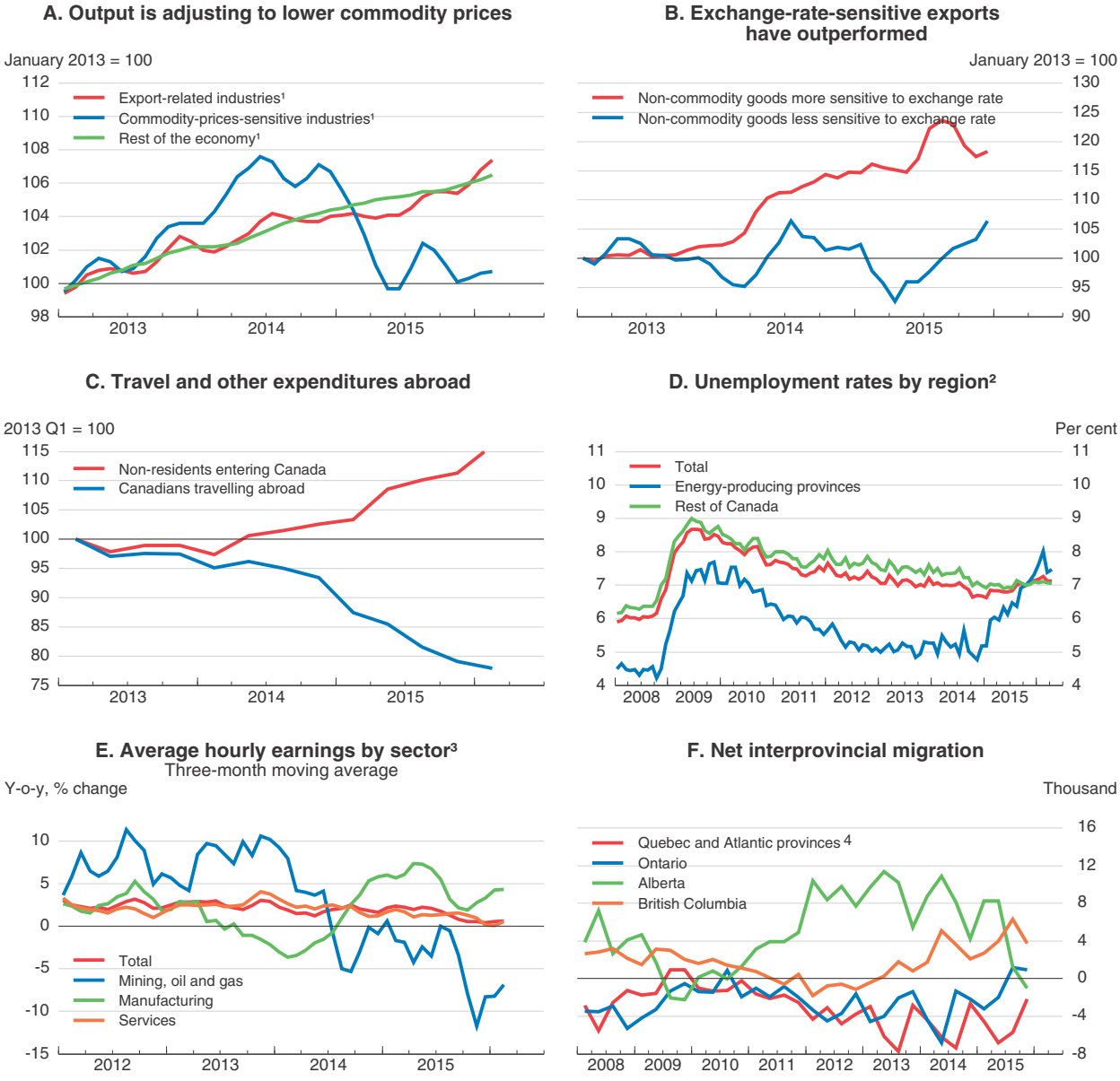
Regional adjustments to terms-of-trade declines and policies to facilitate the sectoral shift

The Canadian economy is undergoing a complex adjustment to falling commodity prices, especially for energy. This entails the withdrawal of productive factors from resource and related sectors and their re-deployment in the rest of the economy. Oil and gas and related output has fallen considerably since late 2014, and the export-related and other non resource industries (most notably finance and insurance, real estate, retail trade, transportation and warehousing, health care and social assistance, and arts, entertainment and recreation), have expanded, aided by the strengthening US economy, the weaker Canadian dollar and accommodative financial conditions (Figure 6, Panel A).

Non-commodity export sectors, which are sensitive to the exchange rate, have shown some modest improvement (Figure 6, Panel B), suggesting that adjustment is underway.

Figure 6. **The rotation from energy to non-energy sectors and regional dynamics**



1. Three-month moving average of real output. For more details on the sectoral definition, see notes in Bank of Canada (2016).
2. Data from the Labour Force Survey. Energy-producing provinces include Alberta, Saskatchewan, and Newfoundland and Labrador.
3. Data from the Survey of Employment, Payrolls and Hours.
4. Atlantic provinces include New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador.

Source: Statistics Canada, Tables 379-0031, 228-0059, 228-0063, 427-0005, 282-0087 and 051-0017; Bank of Canada (2015), *Monetary Policy Report*, October, Chart 27 updated; Bank of Canada (2016), *Monetary Policy Report*, April, Chart 9 updated.

StatLink http://dx.doi.org/10.1787/888933370818

Mining, and oil and gas-related investment have declined significantly since early 2014. Other business investment has also struggled (see Figure 4, Panel B), but as non-energy export demand grows, it should pick up. Survey-based indicators suggest that capacity pressures are more prevalent and investment and hiring intentions greater for non-commodity exporters than other domestically oriented firms (Bank of Canada, 2016b). The

rotation has also been reflected in tradable services: the lower dollar has encouraged increased tourism to Canada, while Canadians have reduced their foreign travel (Panel C).

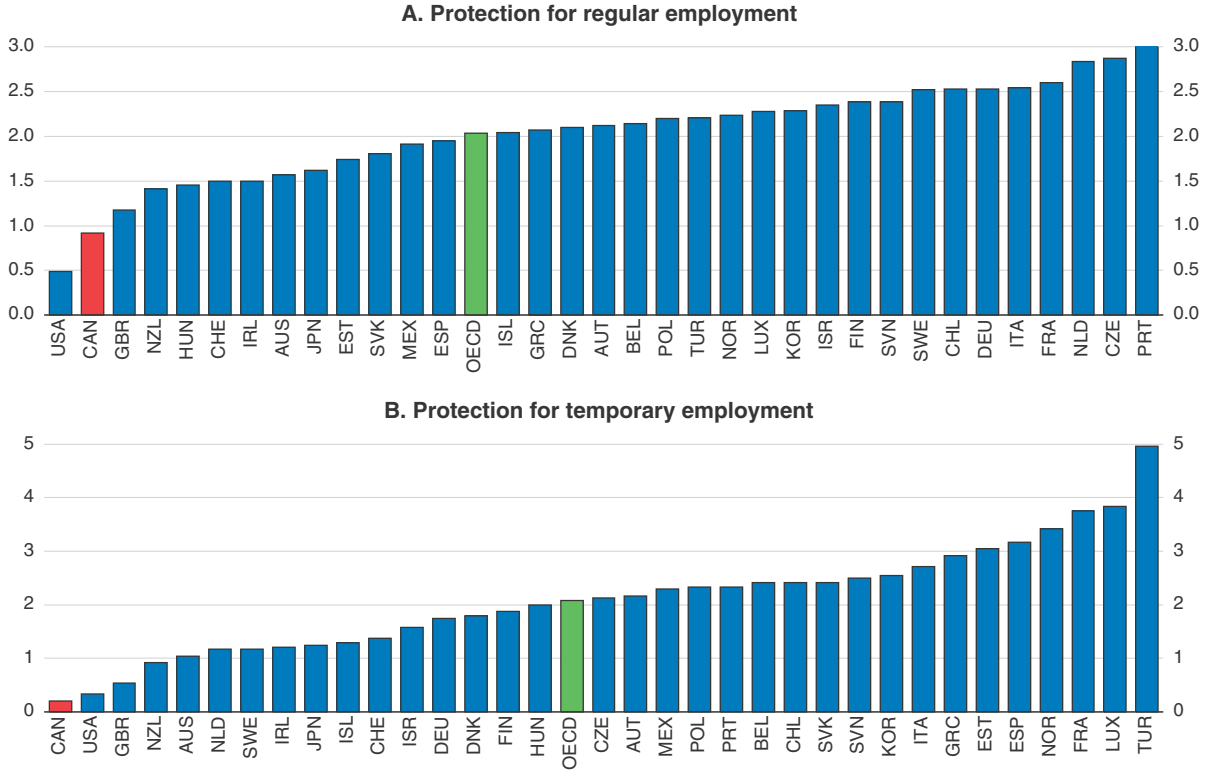
Regional labour markets have also evolved on different tracks. Employment growth has come to an abrupt halt in energy-producing provinces, but job creation mainly in Ontario and British Columbia has allowed modest growth at the national level (see Figure 4, Panel C). Unemployment in energy-producing provinces has risen sharply (Figure 6, Panel D), and average hours worked are down, but again national unemployment has risen only slightly. Nationwide hourly earnings in the mining and oil and gas sectors have fallen sharply (Panel E). Slowing activity and job prospects in Alberta have led to a decline in net inter-provincial migration, with concurrent increases seen in British Columbia and Ontario and ongoing shrinkage in the Atlantic provinces (Panel F).

Canada's labour markets are characterised by flexible employment protection legislation (EPL) (Figure 7), which increases employment rates and is associated with lower levels of long-term unemployment (OECD, 2015a). Canadians with stable work histories have good access to income support through unemployment insurance (known in Canada as Employment Insurance (EI)), which has average replacement rates but short benefit duration.

Canada's spending on training and job search is relatively low (Figure 8). Such programmes, particularly timely access to public employment services, are generally

Figure 7. **Employment protection legislation in Canada is not restrictive**

Index scale from 0 (least restrictive) to 6 (most restrictive), 2013



Source: OECD, Employment Protection Legislation database.

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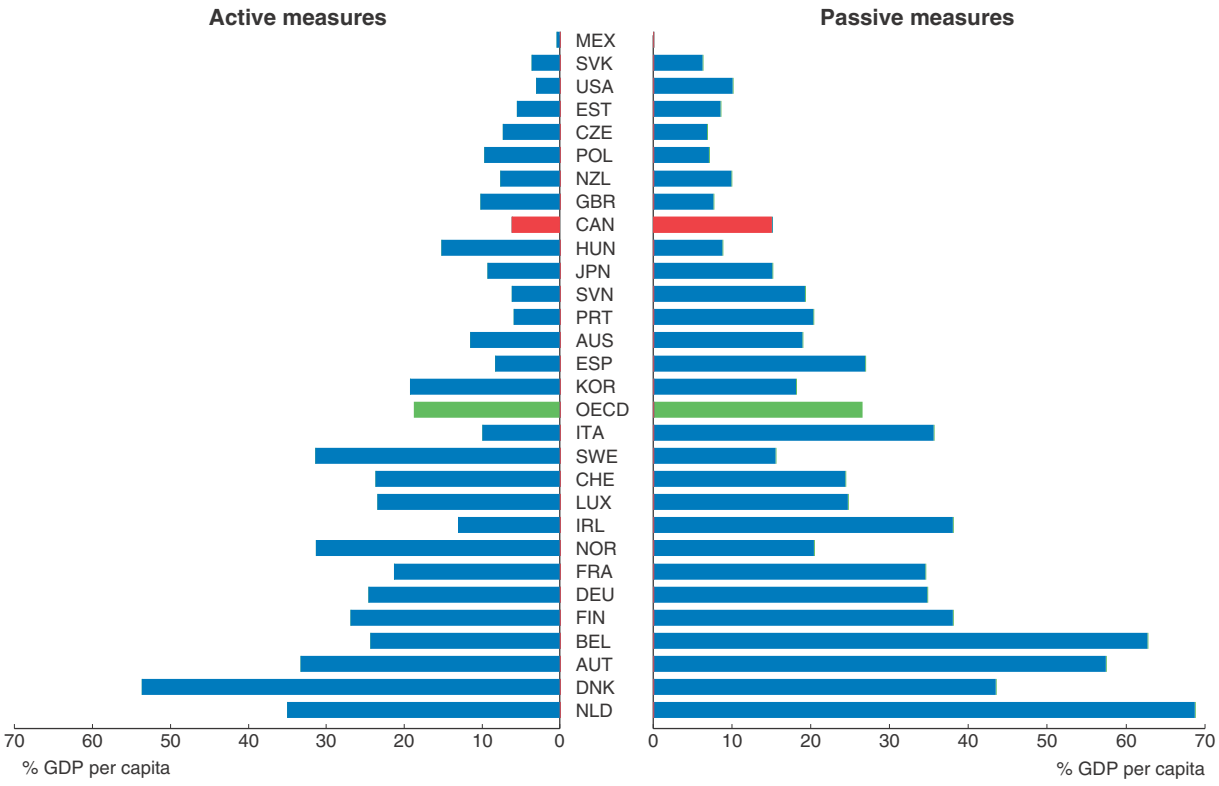
Figure 8. **Public spending on labour market measures**[1]

Spending per unemployed, as a percentage of GDP per capita, 2012 or latest year available



1. Labour market measures include active and passive measures which refer to, respectively, Categories 1 to 7 and Categories 8 to 9 of the OECD/Eurostat Labour Market Programme Database. For more details about the categories, see Grubb and Puymoyen (2008). Countries are ranked in ascending order of the total of both active and passive measures in 2012.

Source: OECD (2015), *Back to Work – Canada*, Figure 5.6; D. Grubb and A. Puymoyen (2008), "Long-Time Series for Public Expenditure on Labour Market Programmes", *OECD Social, Employment and Migration Working Papers*, No. 73, *http://dx.doi.org/10.1787/230128514343*.

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associated with a higher probability of finding a job (Cournède et al., 2016; OECD, 2015a). Access to some public employment services and training is linked to EI benefit receipt. Widening eligibility for these services could get some of the jobseekers who do not qualify for EI benefits back to work sooner. More closely linking benefit administration with employment assistance could make activation policies more effective (OECD, 2013). This could entail locating (federal) EI benefit administration services and (provincial) public employment services in the same offices.

Progress in implementing a selection of recent OECD *Survey* recommendations is reviewed in Box 2. Reforms to ease anti-competitive product market regulations (discussed below) are generally associated with a higher chance that jobless people are re-employed, an effect that becomes economically large four years following the reforms, resulting in lower long-term unemployment rates (Cournède et al., 2016). While internal migration already appears to be the major long-term adjustment mechanism to asymmetric labour-market shocks in Canada, as in the United States but not the euro area, and flows are similar in Canada and the United States (Bayoumi et al. , 2006), there is nevertheless scope to foster more inter-provincial labour mobility. This could be done by promoting the harmonisation of labour standards and training, along with further strengthening and

Box 2. **Implementation of selected past *Survey* recommendations**

- ***Tax efficiency:*** The 2008 *Survey* recommended that remaining provincial sales taxes (PST) be replaced by value-added taxes (Harmonised Sales Taxes (HST)). Progress has been made in moving away from PST, with only a minority of the population now living in provinces with a PST. The largest province with a PST is British Columbia, which exited the HST and returned to a PST in 2013 following a referendum. There has also been some progress in reducing tax expenditures not warranted on economic or equity grounds. For example, income splitting for couples with children and tax credits for textbooks and children's fitness and art were eliminated in the 2016 federal budget. At that time the government also announced a review of tax expenditures. This needs to include all major expenditures, notably, the preferential tax regime for small companies (see below) and non-taxation of benefits from private health insurance plans (which Quebec removed many years ago) and of capital gains on principal residences.
- ***Supply management:*** No action has been taken to phase out supply management regimes in agriculture (notably dairy), as recommended in the 2008 Survey. These regimes sustain inefficient producers and increase prices for consumers as well as threatening Canada's potential membership in future regional free trade areas.
- ***Ethanol and other biofuels:*** Neither has there been any progress to reduce mandates for ethanol and other biofuels, which are not cost-effective means of reducing greenhouse gas emissions. Opposition from the agricultural sector to losing these markets lies behind the lack of progress.
- ***Industrial subsidies:*** Since the 2006 *Survey*, the OECD has recommended that Canada minimise its use of industrial subsidies, which distort product markets. The latest National Accounts data (for 2014) show Canada's recourse to subsidies to be 7th lowest in the OECD at less than 0.9% of GDP (the OECD simple average is 1.7%) and that they have been falling since 2003.
- ***Employment Insurance (EI):*** The 2014 *Survey* recommended that Canada adopt employer- or employee-targeted measures that improve the insurance and incentive basis of the programme, which provides unemployment benefits, and enhance opportunities for seasonal workers to retrain should the January 2013 EI reforms fail to cut repeat use. To date, the evidence is mixed. The share of frequent claimants in total EI regular claims has fallen only slightly. On the other hand, the share of the unemployed receiving EI benefits fell in Atlantic Canada and Québec (regions with high repeat use) following reforms, with a flat level in the rest of Canada. The 2016 federal budget announced the cancellation of these reforms.
- ***Tertiary education:*** To overcome barriers to equitable access to tertiary education the 2012 *Survey* recommended that Canada increase targeted needs-based financial assistance, improve the transparency of the aid application process and expand information on returns to education. The government now provides more information on fields of study and occupational outcomes. The 2016 federal budget announced significant investments to make post-secondary education more affordable for students from low- and middle-income families, such as increased Canada Student Grants amounts and expanded eligibility thresholds so that even more students can receive non-repayable financial assistance. In addition, Ontario will make college or university tuition free for students from families with incomes of CAD 50 000 or less, and increase tuition grants for middle-class families starting in the 2017-18 school year. These proposed changes are to be funded by eliminating the Ontario tuition and education tax credits (which are not means tested). New Brunswick has also introduced income-dependent free tuition for students.
- ***National securities regulator:*** A national securities regulator has been recommended to reduce duplication, speed response to financial stability concerns and reduce compliance costs. The federal government's 2011 proposal for a national regulator was judged unconstitutional. However, several provinces and territories have agreed to establish a Cooperative Capital Markets Regulatory System, along with the federal government, to harmonise and modernise capital markets in their jurisdictions.

fast-tracking dispute resolution procedures in the Agreement on Internal Trade (despite a 2015 amendment that improves them for person-to-government disputes), could facilitate labour market adjustments (see below and Chapter 1). Increasing small business dynamism would also facilitate labour market adjustment as start-ups and young firms (not small firms *per se*) contribute disproportionately to net job growth (Haltiwanger et al., 2013) (see below and Chapter 2).

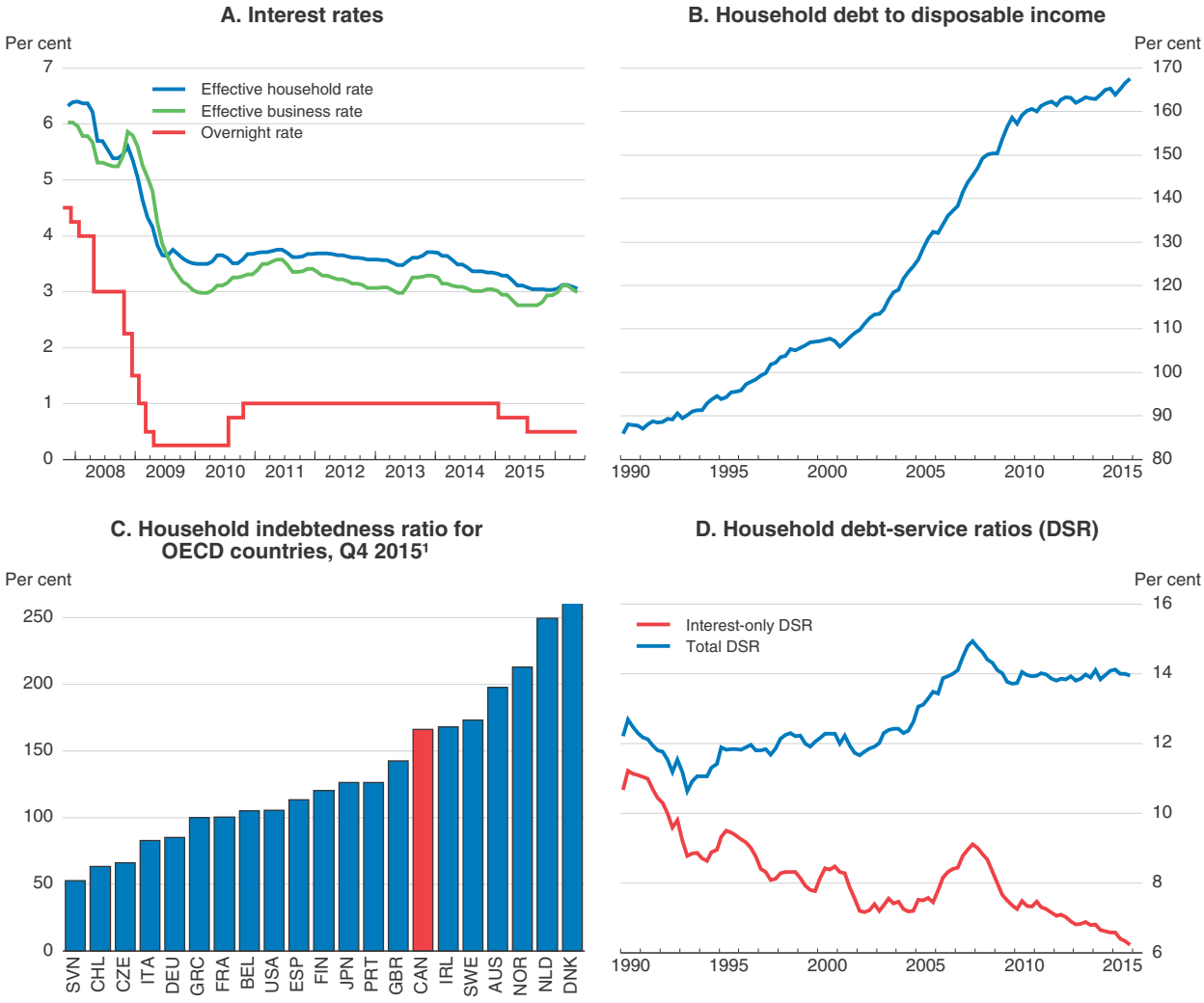
Ensuring price and financial stability

The Canadian economy suffered a major terms-of-trade shock in 2014-15 and continues to operate with significant slack and lower-than-targeted inflation. Expansionary macroeconomic policies can help to speed up the economy's return to normal operating conditions (where the economy is operating at its potential level of output). Until recently, only monetary policy has been expansionary: the discretionary stance of fiscal policy was neutral in 2014-15. With monetary policy bearing all the burden of stimulating the economy, interest rates have fallen to very low levels. This has added further fuel to already overheated housing markets in Vancouver and Toronto and encouraged Canadian households to take on even more debt, the repayment of which might be problematic. Both of these effects have increased financial stability vulnerabilities. Partly to ease the burden on monetary policy, a moderately expansionary fiscal policy stance was adopted in the 2016 federal budget (see below). This has already allowed the Bank of Canada to maintain its policy rate unchanged so far in 2016, despite developments in recent months that may have otherwise called for consideration of a rate cut. Such rebalancing of the short-term macroeconomic policy mix will result in the federal government accumulating more debt and households less, which is preferable from a financial stability perspective, as household debt is already high in relation to incomes, while the federal government's finances are in good shape (see below). An additional consideration is that while fiscal expansion normally pushes up the value of the currency, much of this effect could be offset if undertaken simultaneously by a number of OECD countries, as recommended in the latest *OECD Economic Outlook* (OECD, 2016b).

To cushion the effects of the commodity price decline on growth and inflation the Bank of Canada lowered its overnight rate by 0.5 percentage point in the first half of 2015 and has since remained on hold. Low inflation and reasonable growth prospects suggest that the current pause is appropriate. Recently, most measures of core inflation have been close to 2 per cent. Given excess supply in the economy, these measures would be lower without the impact of exchange rate pass-through. However, as noted above, very low borrowing rates (Figure 9, Panel A) have encouraged household credit growth and underpinned rising asset prices, especially for housing. Macro-prudential measures have been strengthened, but house prices continue to rise, although the ratio of household debt to income has almost levelled off.

Since 1990, Canadian house prices have risen sharply and relative to income and rents are now well above long-run averages; however, persistently low mortgage interest rates have offset the associated pressures on affordability (Figure 10, Panels A-D). Recently house prices have declined in energy-producing regions, continued to rise strongly in Vancouver and Toronto, and risen modestly elsewhere. According to the Canada Mortgage and Housing Corporation (CMHC, 2016), 10 of the 15 Census Metropolitan Areas it monitors have evidence of overvaluation, and seven show moderate or strong evidence of overbuilding. Overall, in its view, most markets show at least moderate evidence of

Figure 9. **Interest rates and household debt**



1. Total household outstanding debt as a percentage of household gross disposable income. Q4 2014 for Denmark and Q1 2015 for Japan.
Source: OECD, National Accounts – Household Dashboard database; Statistics Canada, Tables 378-0123 and 380-0073; Bank of Canada, Financial Indicators, *http://credit.bankofcanada.ca/financialindicators*.

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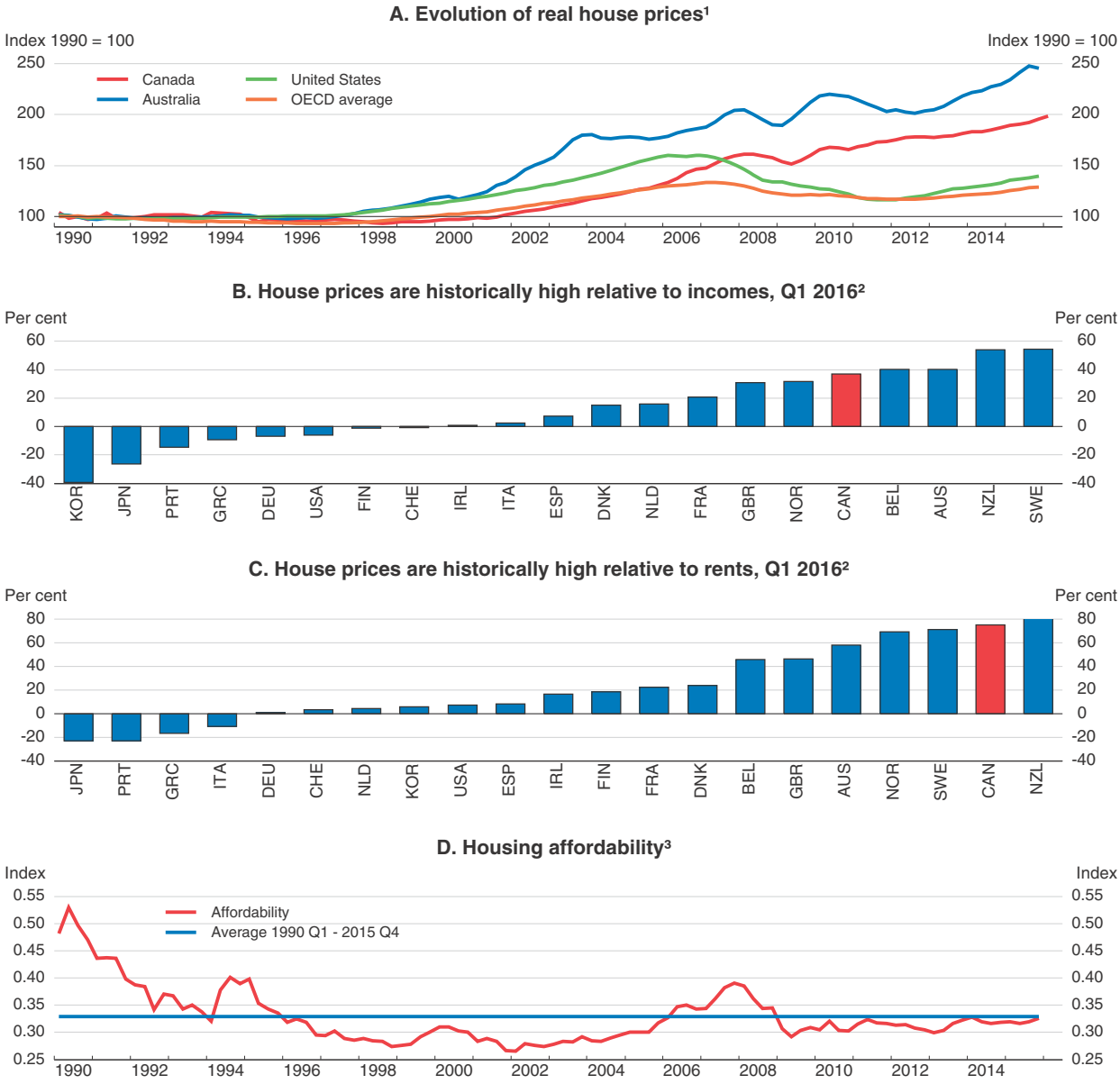
"problematic conditions". One factor driving market strength in Vancouver and Toronto is foreign buying. Unfortunately, limited data are available on such purchases. Fortunately, the federal government has allocated some funding for Statistics Canada to develop a methodology to gather such data.

Another factor is supply constraints: these are both physical – Vancouver is bounded by the Pacific Ocean and coastal mountains, while Toronto is bordered by Lake Ontario – and regulatory – such as Toronto's green belt of some 800 000 hectares and Vancouver's provincial zone of protected farmland. In both cases land is therefore limited, curbing the normal supply response to appreciating property prices. Ontario is considering whether to expand the Toronto-Hamilton greenbelt while at the same time encouraging densification, especially near public transit routes (Advisory Panel on the Coordinated Review of the Growth Plan for the Greater Golden Horseshoe, the Greenbelt Plan, the Oak Ridges Moraine

Figure 10. **House prices**



1. Nominal house prices deflated by the private consumption deflator.
2. Deviation of the ratio of nominal house prices/nominal disposable income per capita (respectively /rent prices) over 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. The latest observation is Q4 2015/Q1 2016.
3. The affordability index provides an estimate of the share of disposable income that a representative household would put toward housing-related expenses. The measure is a ratio, where the numerator, housing-related costs, is the sum of the average quarterly mortgage payment plus utility fees and the denominator is the average household disposable income. The higher the level, the more difficult it is to afford a home.

Source: OECD, Economic Outlook database; Bank of Canada, Financial Indicators, *http://credit.bankofcanada.ca/financialindicators*.

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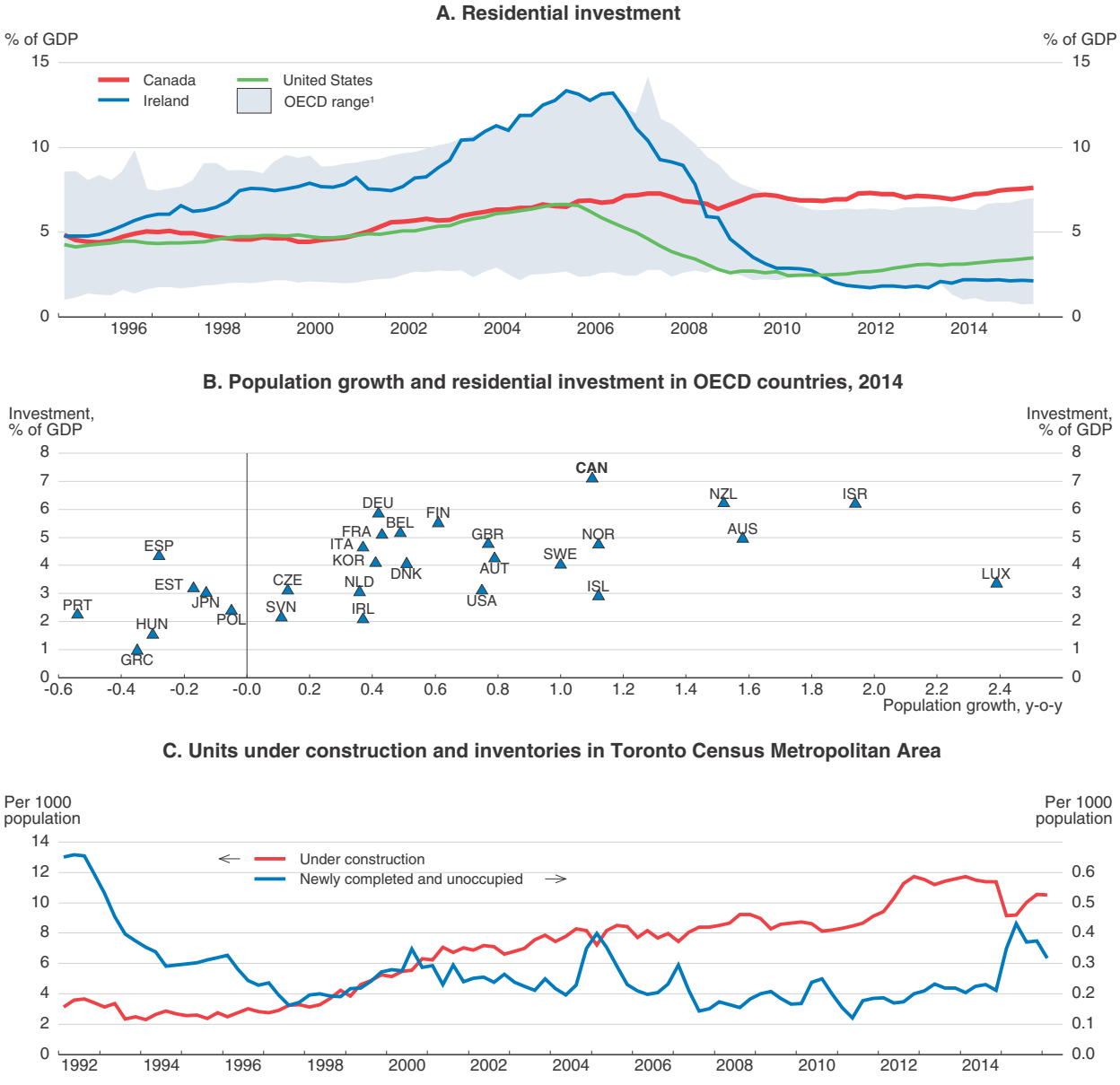
Conservation Plan and the Niagara Escarpment Plan, 2016). Despite these curbs on the supply response, the share of residential investment in Canada's GDP is currently the highest amongst OECD countries, but it is considerably below earlier peaks in Ireland and Spain (Figure 11; Panel A). Strong residential investment may in principle reflect robust demographic growth, but Canada's outcome appears stronger than what can be justified by underlying population increases (Panel B).

Figure 11. **Residential investment**



1. Excluding Canada.

Source: Statistics Canada, Tables 027-0060, 027-0047 and 051-0056; OECD, Economic Outlook database.

StatLink http://dx.doi.org/10.1787/888933370863

High household debt is still nevertheless an important potential vulnerability making the economy susceptible to a fall in employment and incomes, as this would weaken households' ability to service their debt. Household indebtedness has increased to high levels, both historically (Figure 9, Panel B) and compared with other OECD countries (Panel C). While low interest rates have helped to reduce interest-related obligations, broader debt-service ratios including required principal payments are above historical averages (Panel D). In addition, debt has become more concentrated in the hands of highly indebted younger households, who may be less able to cope financially with a job loss or interest rate increases (Bank of Canada, 2015).

Nevertheless, Canadian mortgages are issued on a recourse basis, and most households have plenty of equity in their homes. In addition, banks must test mortgage qualification for insured mortgages with terms less than five years or with variable interest rates against a benchmark five -year interest rate, which is currently about two percentage points above market five-year mortgage rates, affording some degree of protection. In December 2015, the Office of the Superintendent of Financial Institutions (OSFI), the financial supervisor, announced planned changes to the regulatory capital frameworks for residential mortgages for large federally regulated lenders and private mortgage insurers so that capital requirements keep pace with housing market developments and risks, such as when regional house prices are high relative to incomes. Moreover, following a series of rounds of macro-prudential measures implemented since 2008 (e.g. introducing new loan documentation standards, shortening the maximum amortisation period, setting a maximum gross debt service ratio, raising CMHC guarantee fees and capping the total amount of new CMHC securitisation programmes), the federal government boosted down-payment requirements for insured mortgages in February 2016 from 5 to 10% for the portion of each insured home priced between CAD 500 000 and CAD 1 million, which is the ceiling on availability of public mortgage insurance. Stress testing on the six large banks has been carried out regularly in the last few years, though results are not published. Common equity Tier 1 capital ratios, average Liquidity Coverage ratios and Basel III leverage ratios exceed minima required by OSFI (Bank of Canada, 2015; Table 5). Nonperforming loans (NPLs) remain low at only 0.5% of gross loans. This said, macro-prudential measures should be tightened further and targeted regionally, as in New Zealand, where the authorities imposed lower ceilings on loan-to-value ratios in 2015 in the booming Auckland market and are considering further measures. Targeted measures could go beyond planned changes by OSFI to capital guidelines in regions with high house price-to-income ratios or strong house price growth to make capital requirements more responsive to market developments and risks.

Another possible financial vulnerability is exposure, direct and indirect, to declines in the resource sector. For the Big Six banks, oil and gas lending accounts for only 2% of total loans and other mining less than 1% (Bank of Canada, 2015). However, indirect exposures through household and commercial real estate loans in oil-producing regions account for 13% of total loans (Bank of Canada, 2015). Overall, the diversity of the Canadian economy and a well-capitalised banking sector suggest that the large banks can weather such risks, although some small regional lenders (for example, credit unions) may have greater exposure and need to be actively monitored by their respective provincial supervisors.

Table 5. **Canadian financial indicators**

Ratios in per cent

	2005	2010	2011	2012	2013	2014	2015
Regulatory capital to risk-weighted assets (total capital ratio)	15.3	15.6	15.9	16.2	14.3	14.2	14.2
Regulatory tier 1 capital to risk-weighted assets (tier 1 ratio)	11.2	13.1	13.3	13.4	11.7	11.9	12.1
Leverage ratio (tier 1 capital to assets)	4.7	5.0	5.1	4.9	4.4	4.7	4.8
Capital to assets	3.8	4.7	4.9	4.9	5.0	4.9	5.1
NPLs to gross loans	0.5	1.2	0.8	0.7	0.6	0.5	0.5
Return on assets	1.0	1.1	1.1	1.1	1.1	1.1	1.0
Return on equity	23.8	23.0	23.6	22.7	22.3	22.5	20.7
Liquid assets to total assets	12.1	15.5	15.2	11.9	11.3	11.0	11.4
Liquid assets to short-term liabilities	33.7	51.1	54.1	51.8	47.8	50.5	45.2
Foreign-currency-denominated loans to total loans	21.4	27.4	28.2	26.8	27.7	30.1	33.4
Foreign-currency-denominated liabilities to total liabilities	37.6	36.3	40.6	42.4	42.7	49.2	48.4

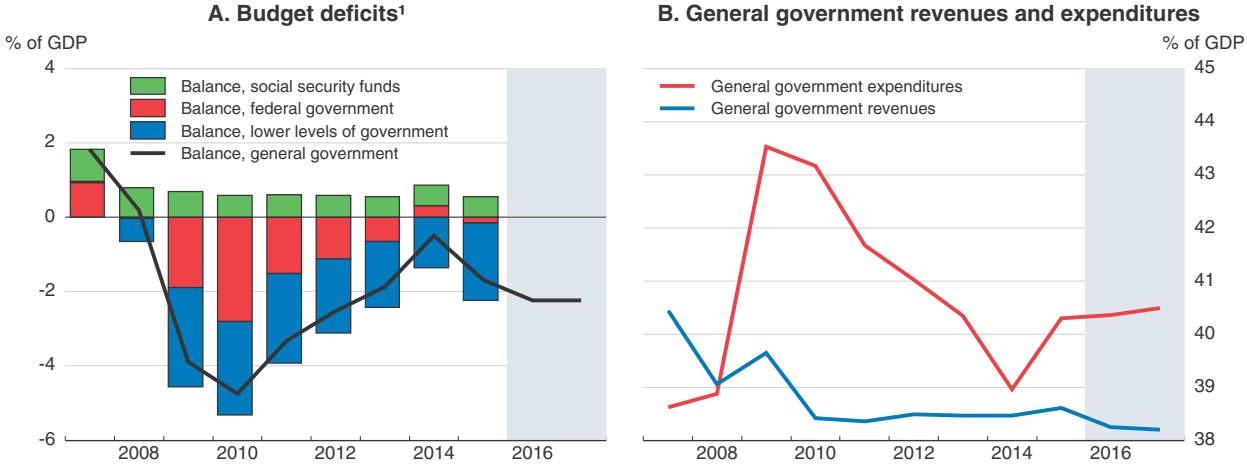
Source: IMF, Financial Soundness Indicators database.

Fiscal policies to raise the incomes of all Canadians

Considerable progress was made in reducing the general government budget deficit from a post-recession peak of 4.7% of GDP in 2010 to 0.5% of GDP in 2014 (Figure 12, Panel A). This reduction, which occurred mostly at the federal level, was achieved by reducing expenditure, which had shot up in the wake of the global financial crisis (Panel B). Around two-thirds of the deficit reduction is estimated to have been structural. The deficit rose to 1.7% of GDP in 2015, and most of the increase reflected deteriorating provincial public finances in oil-producing provinces, particularly Newfoundland and Labrador, and Alberta.

The new federal government has adopted a moderately expansionary fiscal policy stance to boost demand. New measures increase the budget deficit by 0.6-0.7% of GDP in the next two years and by 0.3% of GDP in 2018 and 2019 compared with an unchanged policy baseline

Figure 12. **Public finances have improved in recent years**



1. Average of the four quarters of the year.

Source: OECD, Economic Outlook 99 database; Statistics Canada, Table 378-0119.

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(Table 6). The increase in deficits reflects higher spending, including on infrastructure, which is a government priority: indeed, it expects to double infrastructure spending to CAD 120 billion over the next decade. The federal government estimates that these measures could increase the level of GDP by 0.5 per cent in 2016 and 1 per cent in 2017 (Finance Canada, 2016), but federal indebtedness will rise for some time nonetheless.

Table 6. **Fiscal projections**

As a percentage of GDP

Federal government							
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Budget revenues	14.3	14.6	14.4	14.5	14.5	14.5	14.5
Program expenses	12.9	13.6	14.6	14.6	14.2	13.8	13.6
Public debt charges	1.3	1.3	1.3	1.3	1.3	1.4	1.5
Budget balance	0.1	-0.3	-1.5	-1.4	-1.0	-0.8	-0.6
Federal debt	31.0	31.2	32.5	32.4	32.1	31.6	30.9
General government							
	2014	2015	2016	2017			
Budget balance	-0.5	-1.7	-2.2	-2.2			
Gross debt	93.2	98.5	99.8	100.6			
Net debt	31.7	31.8	33.1	33.0			

Source: Budget 2016 and OECD.

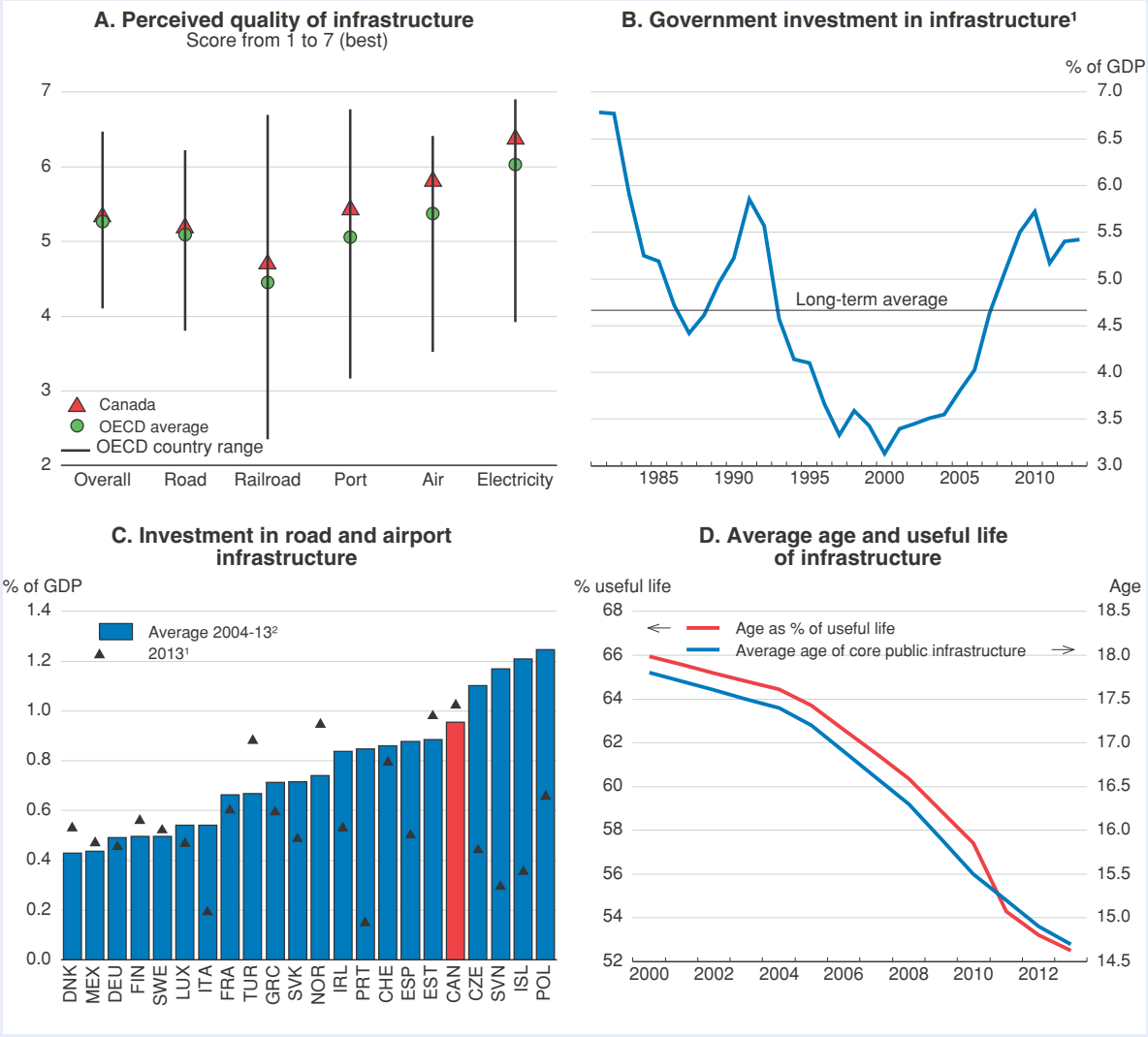
The federal government's focus on investment in physical infrastructure, social housing, education and innovation to deliver short-term stimulus and promote longer-term growth and inclusiveness is astute. Short-term fiscal multipliers are greater for infrastructure and social housing than for tax measures, for example. Finance Canada (2016) estimates fiscal multipliers for infrastructure investment measures to be 0.9 in the first year and 1.4 after two years, though these estimates are subject to considerable uncertainty. However, finding infrastructure investments with high returns is likely to be more difficult in Canada than in some other jurisdictions, because there does not appear to have been so much underinvestment in recent years (Box 3).

Box 3. **Canadian infrastructure provision and the efficiency of its use**

Canada's infrastructure compares favourably with OECD averages in terms of its perceived quality (Figure 13, Panel A) and investment levels. Canada's total public investment in infrastructure is above historical average (in per cent of GDP), and investment in transportation infrastructure (including roads and airports) relative to GDP appears to be higher than OECD norms (Panels B and C). While this may partly reflect weaker investment in the mid- to late-1990s, the upward trend in public investment since then has increasingly exceeded depreciation rates, leading to a decline in the average age and a lengthening of average remaining useful life (Panel D). Indeed, core public infrastructure stock per capita has increased roughly 15% since 2003 (Infrastructure Canada, 2015). While these data suggest that infrastructure deficits are low in Canada, some select or localised constraints may exist, and efficiency gains may result from improving the coordination among various transportation modes. Moreover, road congestion seems to be an issue, especially at the evening peak, in Vancouver and, to a lesser extent, Toronto (TomTom, 2016), raising logistics costs. Greater use of infrastructure pricing, such as congestion and user charges, could ensure more efficient infrastructure use.

Box 3. **Canadian infrastructure provision and the efficiency of its use** *(cont.)*

Figure 13. **Infrastructure provision and perceived quality**



1. Includes investments in constant Canadian dollars from all levels of government including crown corporations and departmental agencies. Data for 2013 are based on forecasts. Infrastructure includes core public infrastructure assets (bridges, roads, water, wastewater, transit, culture, and recreation and sports), marine and air transportation, rail, brownfields, waste management, education, health and social assistance, energy, communication, oil and gas engineering, commercial and government and other institutional buildings, and other infrastructure.
2. Or latest available year.

Source: World Economic Forum (2015), *The Global Competitiveness Report 2015-16*; OECD, International Transport Forum database; Infrastructure Canada.

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Yet, the federal government does not have clearly defined medium-term objectives in terms of the budget balance (such as getting back to balance by a certain date). It has, however, committed to reducing the federal-debt-to-GDP ratio over the five-year period ending in 2020-21. The government has also noted that it remains committed to

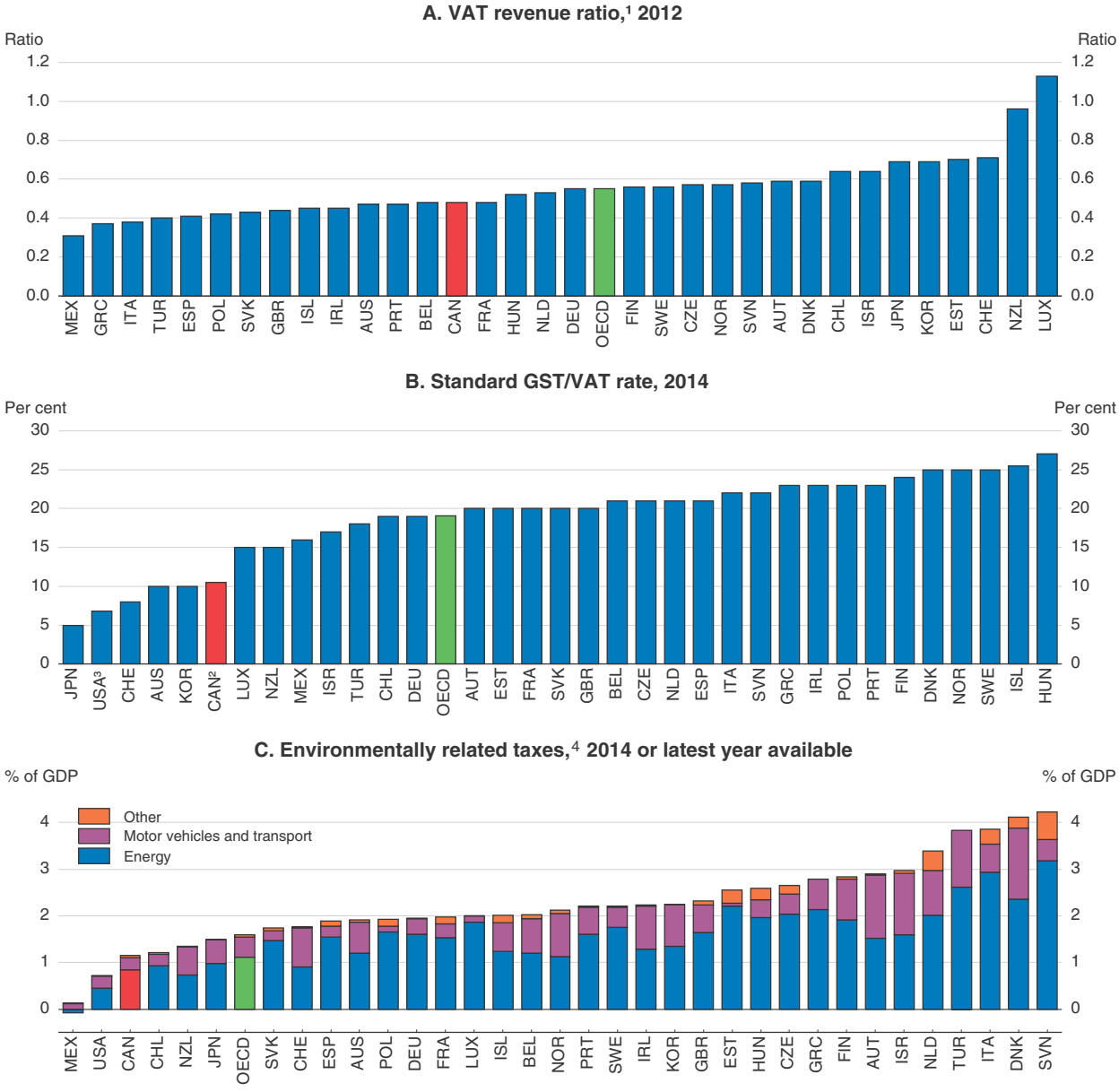
eventually returning to balanced budgets. General government net debt is projected only to rise moderately to 33% of GDP in 2017, which is far below the projected OECD average of 72% of GDP. In most countries gross public debt is the preferred metric for general government because government assets may be illiquid and/or poorly priced, and it is therefore imprudent to offset them fully against gross debt. However, in Canada's case such assets are mostly held by well managed pension funds, which provide pension payments for civil servants and the general public and hold only moderate amounts of non-marketable shares. In any case, the federal government should establish a medium-term debt-to-GDP target, taking into account the outlook for provincial/territorial debt, to ensure that general government finances are sustainable (see below).

The new federal policy package also includes important changes to redistribute income towards low- and middle-income households. The most significant measure is the replacement of existing programmes to help families with children, some of which are not income tested, by the Canada Child Benefit (CCB), which is income tested, as of mid-2016. Almost 90% of the cost of the CCB will be met from cancelling the existing measures.

The other main redistributive measure is a middle-class income tax cut to be financed mainly by increasing the tax rate on high incomes to an average federal-provincial combined rate of over 50%. It would have been less costly to finance this tax cut by increasing taxes with lower efficiency costs, such as Goods and Services Tax (GST) – both through broadening the base (the VAT revenue ratio, shown in Figure 14, Panel A, suggests that Canada's base may be marginally less comprehensive than the OECD average), and raising the standard rate (Panel B), although cross-border shopping possibilities restrict the extent to which rates can exceed sales tax rates in neighbouring US states) and by applying environmentally related taxes (especially taxes on energy), which are limited (Panel C).

As noted above, the 2016 federal budget also proposes a substantial increase in funding of CAD 8.4 billion over the next five years (an average of 0.1% of GDP, of which CAD 1.3 billion in 2016-17 and 1.8 billion in 2017-18) to improve the sub-standard socio-economic conditions facing Indigenous Peoples. This amounts to a 22% increase in end-of-period levels and represents a big effort at making growth more inclusive and opportunities more equal. Most of this expenditure will be on education and training (about half of the total), including upgrading of school buildings, and social and green infrastructure (housing, water and wastewater treatment and health care). A large share of the education funding is intended to be invested in primary and secondary education on reserve (including language and cultural programming), to provide special needs education so as to boost literacy and numeracy, to close the gap in high school graduation rates and to ensure greater access to tertiary education. Social infrastructure spending will seek to ensure quality housing, as well as early learning, child care, health care, cultural and recreational facilities. The green initiatives involve improving on reserve waste management, water quality and wastewater treatment. But the budget also provides some funds for improving governance by their representative organisations and for strengthening the capital base of the First Nations Financing Authority, which raises private long-term capital for economic development in their communities. It would be useful if some programme evaluation mechanisms were built in at the outset to ensure that real progress is made.

Figure 14. **GST/VAT and environmental taxes are relatively low in Canada**



1. The VAT revenue ratio is defined as the ratio of VAT revenues to household consumption expenditure excluding VAT revenues divided by the standard rate.
2. The national GST rate is estimated by adding the federal rate (5%) and rates of the provincial equivalent tax (the Harmonised Sales Tax as well as the provincially-legislated Quebec Sales Tax), weighted by household final consumption expenditure excluding sales taxes.
3. The sales tax for the United States is estimated by computing a simple average of the combined tax rate (i.e. state tax plus local tax) of those US states having a frontier or a connection with Canada: Washington, Idaho, North Dakota, Minnesota, Michigan, New York, Vermont, New Hampshire and Maine.
4. Include taxes at both central and lower levels of government.

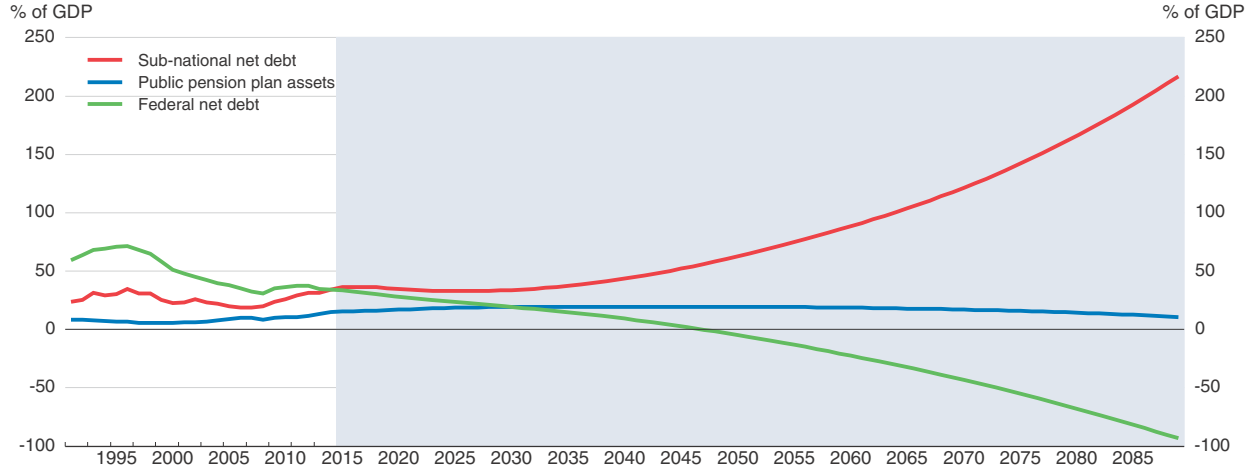
Source: OECD (2015), *Tax Administration 2015: Comparative Information on OECD and Other Advanced and Emerging Economies*, Table 6.2; OECD (2014), *Consumption Tax Trends 2014*, Table 2.A2.1 updated; OECD, Environment-Related Tax Revenue database; Statistics Canada, Table 384-0045; Canada Revenue Agency; Tax Foundation, *http://taxfoundation.org/article/state-and-local-sales-tax-rates-2014*.

StatLink http://dx.doi.org/10.1787/888933370895

Debt sustainability

Fiscal policies for all levels of government combined appear sustainable, at least for several decades – government debt will not ultimately increase more than output under current policies. However, this outlook reflects contrasting positions between the federal and other levels of government. Based on policies in place at mid-2015, the Office of the Parliamentary Budget Officer (PBO, 2015) has recently projected that federal net debt would fall from 34.1% of GDP in 2015 to zero before 2050 and become increasingly negative thereafter, whereas net debt of sub-national governments, currently at 34.4% of GDP, would rise continuously to over 200% of GDP after 75 years (Figure 15). The qualitative nature of this outlook is robust to various alternative macroeconomic assumptions. The new government's decision not to increase the eligibility age for Old Age Security (the first-pillar pension) will not threaten long-term debt sustainability. The public second-pillar pension plans (Canada Pension Plan and Quebec Pension Plan), which are funded from employee and employer contributions, are sustainable based on projections from the Office of the Chief Actuary of Canada and also contain legislative provisions to amend the level of contributions and benefits to ensure sustainability.

Figure 15. **Government sector net debt over the long term**



Source: Office of the Parliamentary Budget Officer (2015), *Fiscal Sustainability Report 2015*, Figure 7-1, *www.pbo-dpb.gc.ca/web/default/files/files/files/FSR_2015_EN.pdf*.
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The main factor accounting for the contrasting outlooks of the federal and sub-national governments is population ageing, which affects the fiscal position of sub-national governments more importantly, especially through health-care costs. The federal government partly offsets these costs, as health-care transfers are to be indexed to GDP growth, with a 3 per cent floor, starting in 2017-18. Total provincial and territorial health-care spending in Canada is projected to rise from 7.2% of GDP in 2014 to 12.5% of GDP in 2090. Slowing health-care expenditure growth is therefore likely to remain an important aspect of sub-national governments' reforms to put their finances onto a sustainable path. Sensitivity analysis by the Office of the Parliamentary Budget Officer (PBO, 2015) suggests that slower health-spending growth would significantly improve the fiscal situation of sub-national governments over the long term. The issue of health-care costs was analysed in the 2010 *Economic Survey* (OECD, 2010), which recommended reforming physician and

hospital funding, adopting joint pharmaceutical procurement, and removing tax exemptions for employer-provided private health-insurance benefits. Progress has been achieved in some of these areas (see Annex for more information).

Boosting productivity and living standards

Productivity is, in the long run, the most important source of wider personal choices and higher income, living standards and well-being for Canadians. As noted above, productivity growth has been weak in recent decades relative to rates in comparable high-income countries. It is not clear what the major causes are, but enhancing product market competition and strengthening the internal market could help to improve performance. More generally, structural reforms could make a noticeable difference to the efficiency with which inputs are used in production. For example, the former Canadian government reported on a number of detailed commitments to the G20 in 2014, which were evaluated by the OECD to be worth over a half per cent of added output if fully implemented.

The benefits of greater competition in network sectors

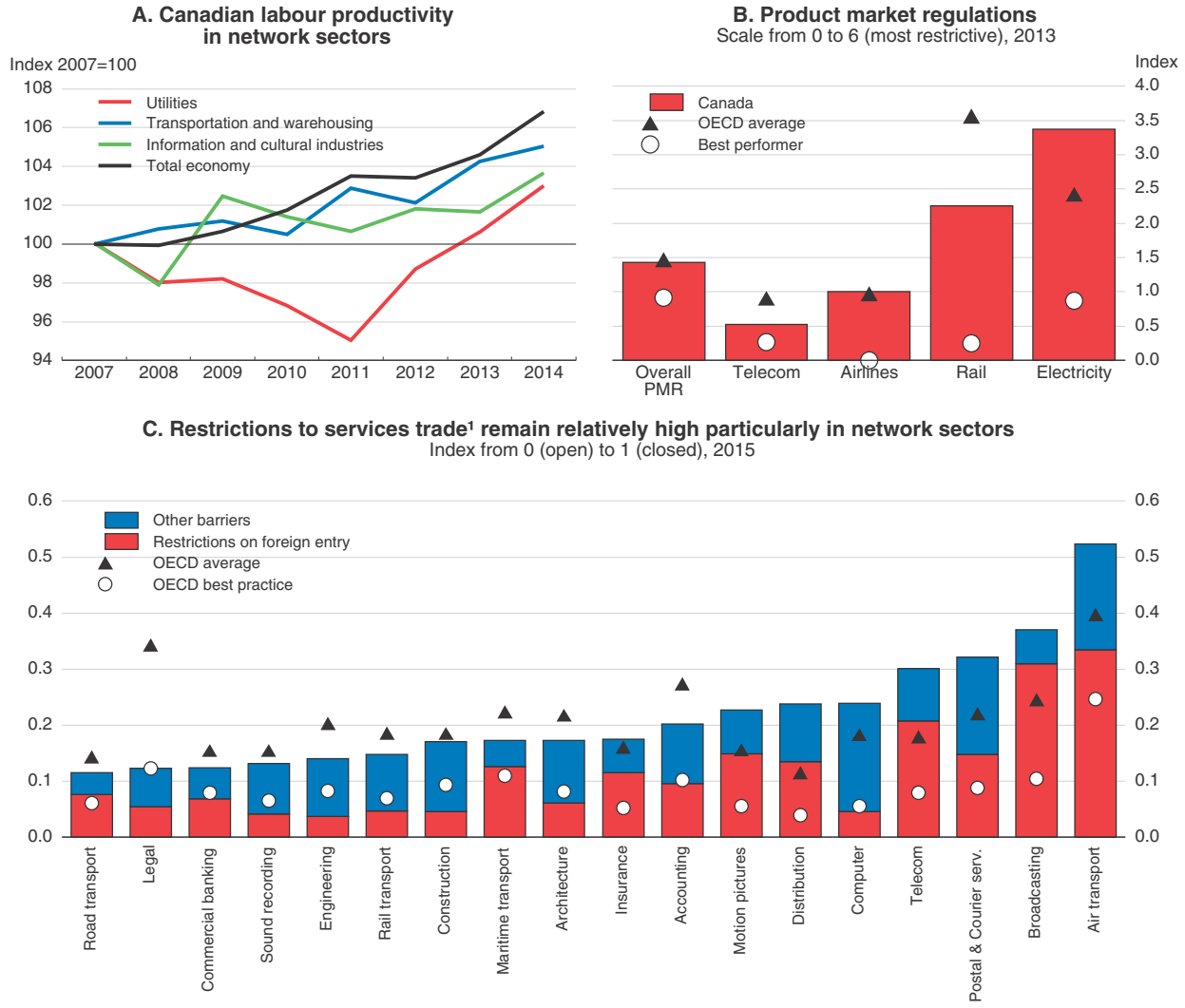
Poorly designed regulations lower productivity by weakening competitive pressures to innovate and adopt technologies and organisational arrangements used by firms at the global productivity frontier and by reducing the reallocation of resources towards the most productive firms (Andrews et al., 2015). According to Statistics Canada, labour productivity growth in Canada's network sectors has lagged the economy-wide average since 2007 (Figure 16, Panel A), Elsewhere, based on the OECD's STAN database, outcomes are mixed, depending on the sector, though productivity weakness has generally been widespread. While overall product market regulations (PMRs) in Canada are about as strict as the OECD average, those in some network sectors, especially electricity, are stricter (Panel B). This includes widespread restrictive foreign ownership limits (Panel C). The OECD has examined Canada's PMRs, and its empirical models show that if they were in all cases transformed to best practice equivalents, annual multi-factor productivity (and hence output) growth would improve by over half a percentage point per year over a ten-year horizon.

Electricity

Regulation in Canada's electricity sector is pervasive by OECD standards (Figure 17, Panels A and C). Electricity generation, transmission and distribution are controlled by vertically integrated public monopolies, except in Nova Scotia and Prince Edward Island, where the monopolies are privately owned, and Alberta where there is competition. Some provinces have limited accounting separation between generation, transmission and distribution, but competition would be enhanced if generation were fully separated from transmission and distribution, as long as generators are provided with non-discriminatory access to transmission lines.

Canadian retail electricity prices are generally regulated on a cost-of-service basis (average cost pricing). Only Alberta has fully competitive wholesale and retail electricity markets. Encouraging the other provinces to adopt competition in generation and to strengthen market pricing signals by establishing competitive wholesale markets would enhance efficiency (IEA, 2007), particularly for investment decisions. In addition, establishing retail competition would enable consumers to pick their electricity suppliers, which could incentivise the development of service offers better tailored to consumers' needs. If generation and distribution were liberalised to encourage wholesale and retail

Figure 16. **Regulations and labour productivity in network sectors**



1. The Services Trade Restrictiveness Index (STRI) records measures on a most-favoured-nation basis; preferential trade agreements are not taken into account. Air transport and road freight cover only commercial establishment (with accompanying movement of people). The data have been verified and peer-reviewed by OECD Members.

Source: OECD, Product Market Regulation and Services Trade Restrictiveness Index databases; Statistics Canada.

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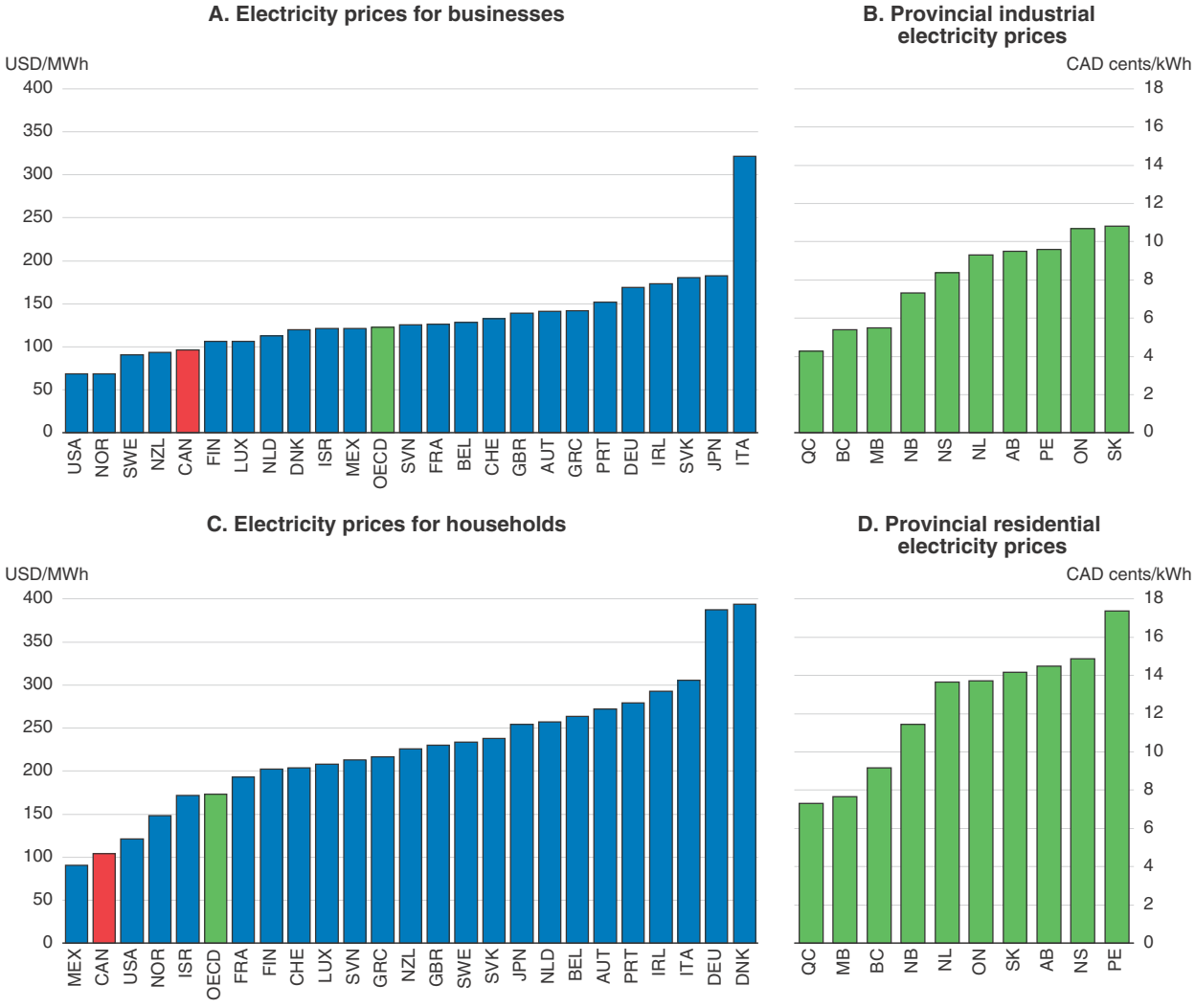
competition in all markets where there is none as yet, OECD estimates are that the level of economy-wide multi-factor productivity would rise by 0.5% within a decade.

Transmission interconnections between the provinces are poor. Improving integration could raise efficiency, reduce potential overinvestment and increase the resilience of the system to potential electricity shortages, thereby facilitating market deregulation. Achieving environmental objectives could also become more affordable, and a larger base would facilitate integrating intermittent sources, which would further increase Canada's already high reliance on renewables (around 62%). As electricity market fragmentation largely reflects the provinces' central regulatory role, expanding efforts such as the Atlantic Energy Gateway, a federal-provincial-utilities collaborative effort, and establishing an energy chapter in the updated Agreement on Internal Trade (see below) would enhance efficiency. At the same time, the economic rationale for constructing an east-west electricity grid in

Canada may not be clear because of the costs of transporting electricity across large unpopulated areas. However, improving the trade opportunities between adjacent provinces, where incremental opportunities for mutual benefit exist, may be beneficial.

Electricity prices for businesses and households are generally low in Canada, although they differ considerably by province, primarily reflecting resource endowments (Figure 17, Panels B and C). Therefore, the impact of heightened competition on end-user prices will probably vary: in some provinces where prices are set below external market rates (like Quebec) a liberalised regime would actually raise them. However, increased revenues in these provinces and improved returns to capital could be used to develop other infrastructure, fund programmes with higher returns, cut the most distortionary taxes or compensate those on low incomes and fight poverty. However, given the proximity of the US market, where electricity prices are even lower, increasing electricity prices in Canada could undermine the competitiveness of energy-intensive sectors.

Figure 17. **Electricity prices in 2013**



Source: IEA, Energy Prices and Taxes database; A.J. Goulding and M. Atanasov (2014), *Power Prices in Context: Comparing Alberta Delivered Electricity Prices to other Canadian Provinces on a Level Playing Field*, London Economics International.

StatLink http://dx.doi.org/10.1787/888933370926

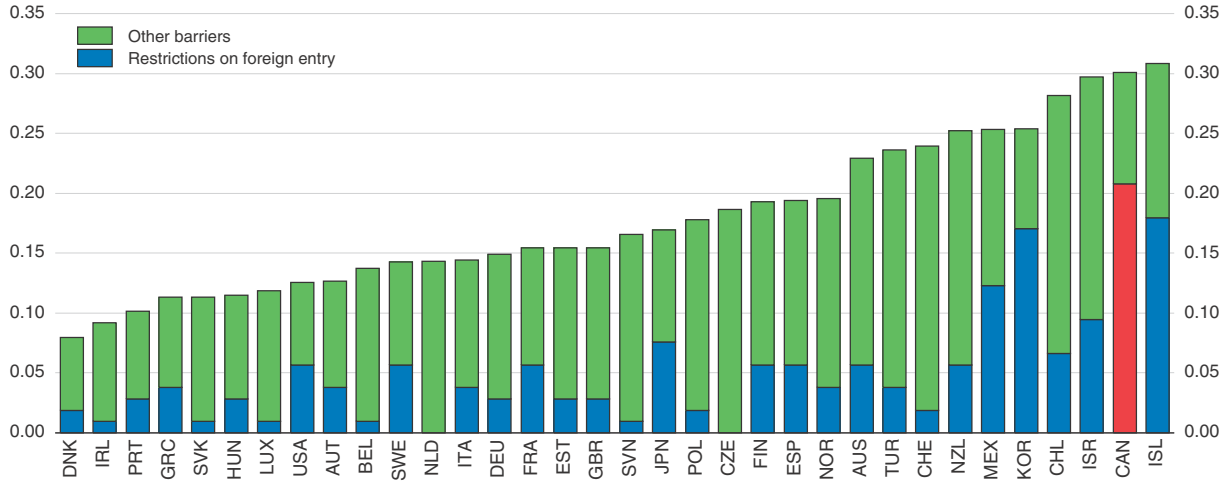
Telecoms and broadcasting

Greater competition in telecoms and broadcasting could lower prices and increase access to fast, high-quality networks, raising business efficiency by enhancing the synchronisation of goods, services and payments in the supply chain. Canadian telecommunications are of fairly high quality: for broadband this is borne out by indicators such as above-average download speeds. The number of fibre subscriptions is comparably low, despite some recent pickup (OECD, 2015b). Telecommunications services are relatively costly, but this may partly reflect higher quality. Mobile subscription numbers are fairly low, while fixed broadband adoption rates are above the OECD average (OECD, 2015b). This may reflect large geographical distances with low population density that limit the diffusion of wireless technology.

Canada has restrictive foreign ownership rules in telecoms and broadcasting (Figure 18), which are intended to support Canadian cultural objectives but which also reduce competitive pressures. Foreign interests have been generally allowed to hold no more than 46.7% of voting equity in any facilities-based telecommunications carrier or a broadcast distribution undertaking. In June 2012 the government abolished these restrictions for telecommunications companies with a market share of no more than 10%, but no such entry has taken place to date; broadcasting restrictions were unchanged. Nevertheless, Rouzet and Spinelli (2015) estimate that eliminating the ownership restrictions in telecoms could reduce price-cost margins by 2 percentage points from Canada's average of 26% for exchange-listed companies, yielding tangible gains for consumers and downstream firms. Moreover, lower trade restrictions in telecoms have been associated with increased internet subscriptions and may boost exports of services and information-intensive goods (Nordås and Rouzet, 2015). Of note, higher foreign company penetration would likely come from the United States, where prices are lower but for lower-quality services.

Figure 18. **Foreign entry restrictions in telecommunications are high in Canada**

Index from 0 (open) to 1 (closed), 2015



Source: OECD, Services Trade Restrictiveness Index database.

StatLink http://dx.doi.org/10.1787/888933370931

Air transportation

Competitive and efficient transportation services are crucial for Canada's integration into the global economy, and their performance could be enhanced by improving regulation. Restrictive foreign-ownership limits are a key barrier, which probably raise financing costs and may lead to a slower adoption of new technology and know-how. To operate domestic air services, carriers are required to be no more than 25% foreign owned and controlled. Foreigners may own non-voting equity but are not permitted to own more than 25% of voting shares in any Canadian carrier. Competition could be increased and downstream cost competitiveness enhanced by lessening these restrictions. This could be done by raising the voting equity limit to 49% for carriers operating international air services (allowing more could invalidate international Air Service Agreements) and eliminating them completely in the domestic market on a reciprocal basis, including granting rights of establishment (where foreign carriers would be permitted to set up a separate carrier in Canada to operate domestic services).

Strengthening the internal market

Inter-provincial tariff barriers are forbidden by the Canadian constitution, and Canadians have the right to live and work anywhere in the country. However, non-tariff inter-provincial barriers reduce trade, labour mobility and productivity, particularly by shrinking the scale of production. While estimates vary widely, these barriers may cost the economy billions of dollars per year (Industry Canada, 2014), even though official estimates show relatively limited differences in price levels across major Canadian cities (prices are about 15% higher in Toronto than in Winnipeg and Montreal; see CANSIM Table 326-0015). These barriers arise from overlapping federal, provincial and territorial regulatory responsibility over many economic policy areas. The Agreement on Internal Trade (AIT), which took effect in July 1995, improved the flow of people and goods across borders (Public Policy Forum, 2013). However, its framework and narrow coverage, notably the absence of an energy-sector agreement, limit its effectiveness.

In particular, the current AIT includes only rules and sectors that are specified in the agreement. Moreover, some included sectors, such as agriculture, have very limited scope, allowing for various barriers to internal trade, including distortionary supply management policies (Box 2). Moving towards a framework that includes all sectors and barriers would be more dynamically efficient (as new areas would be automatically included) and transparent. Reconciliation of regulations for trade in goods and services and labour mobility (possibly through mutual recognition), as in some sub-national and international agreements abroad, could expand trade and mobility. Negotiations are underway to improve the AIT and make it into a modern trade agreement. Over time, focusing on in-depth harmonisation of legislation, standards and regulations among the provinces through a regulatory council, as in Australia, could help to further reduce inter-provincial barriers. Moreover, expediting dispute proceedings, which average 41 months (Pavlovic et al., 2015), and raising penalties may improve adherence to the AIT.

Boosting productivity through greater small business dynamism

A dynamic small business sector can heighten competition and underpin productivity growth. Dynamism can be reflected in high rates of firm creation, exit and scaling up, and in relatively few stagnant, old firms – in other words, high start-up rates and strong "up-or-out" dynamics. Entry can be viewed as a form of experimentation that

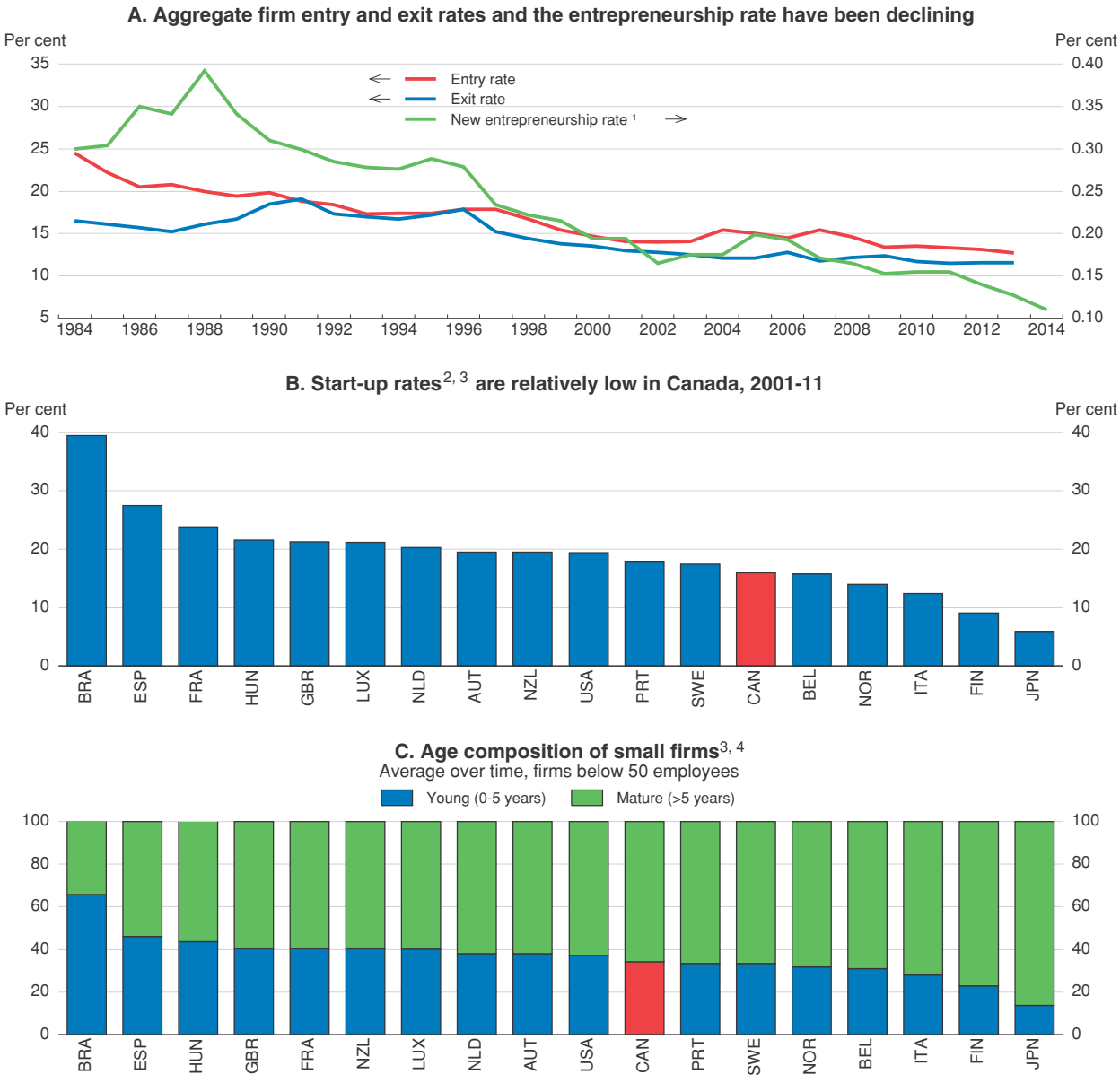
introduces new ideas, business models and technologies into the marketplace while exits can be viewed as the end of unsuccessful experiments (MacDonald, 2014). High start-up rates increase both the likelihood of radical innovation and competitive pressures on incumbents to innovate and hence adopt new technologies (Andrews et al., 2014; Henderson, 1993; Baumol, 2002). More than half of multi-factor productivity growth at the industry level is attributable to new entrants in a sample of Danish firms (Lentz and Mortensen, 2008). Similarly, a recent OECD study (OECD, 2015c) finds that an increase in the share of firms younger than six years relative to firms aged 12 years and over is associated with higher multi-factor productivity growth and that this effect is mainly attributable to start-ups (i.e. firms younger than three years). It also finds that an increase in the share of employment in small firms older than five years with less than 50 employees – which indicates an absence of "up-or-out" dynamics – is associated with lower productivity growth.

Firm entry and exit rates have been falling since the early 1980s (Figure 19, Panel A), as has occurred in other countries (Criscuolo et al., 2014). It is not clear why these rates have fallen. For Canada, Cao et al. (2015) find the decline came mainly from within sectors, rather than inter-sectoral shifts, and that population ageing accounted for only a small part (20%) of the fall since 2000 (older working-age groups have lower entrepreneurship rates). The start-up rate in Canada appears to be relatively low by international comparison (Panel B). On the other hand, performance in scaling up start-ups, as indicated by the share of start-up microenterprises (1-9 employees) growing into small firms (10-19 employees) (i.e. 'up dynamics') after three years, appears to be average (5%) (Figure 20). This group is important as it contributes to productivity growth and accounts for a disproportionate share of start-up net job creation. There seems to be a comparatively large share of small old firms, which contribute less to productivity and employment growth (Figure 19, Panel C). However, all of these comparisons are subject to considerable uncertainty owing to differences in data collection methodologies. In particular, in contrast to other countries in the sample, data for Canada exclude spurious start-ups and exits resulting from reorganisations or mergers and acquisitions. This tends to reduce start-up and exit rates and the share of young firms in Canada relative to other countries, and to increase the share of microenterprise start-ups growing into small firms.

Sectoral excess job reallocation rates (the difference between the sum of job creation and destruction as a share of employment and net employment growth), which mainly reflect developments in small firms, are an indicator of resource reallocation and hence of small business dynamism. These fell from the early 1990s to the mid-2000s, since when no data are available (Cao and Leung, 2010). Based on the estimated coefficients for excess job reallocation in Cao and Leung (2010), the decline is estimated to have cut annual multifactor- and labour productivity growth rates by 0.7% and 1.6%, respectively.

Canada's framework policies, such as product and labour market regulation, are generally supportive of small business dynamism, although less so than those of the United States. Labour market regulation, in particular, poses few barriers to the reallocation of labour, which is critical for a vibrant small business sector. There is, however, scope to lower barriers to product market competition, notably to trade and investment (Figure 21, Panel D). Canada has relatively high barriers to foreign direct investment, which inhibit allocative efficiency (Andrews and Cingano, 2014), and discriminates against foreign suppliers in public procurement. Regulatory protection of

Figure 19. **Small business dynamism has declined but remains in the middle of the range**



1. The number of new self-employed workers who hire employees as a fraction of the working-age population.
2. Start-ups are defined as those firms which are 0 to 2 years old. Start-up rates are defined as the fraction of start-ups among all firms, averaged across the indicated period. For more details, see Figure 7 in Criscuolo et al. (2014).
3. Data are preliminary. Owing to methodological differences, figures may deviate from officially published national statistics. Data for Canada refer only to organic employment changes and abstract from merger and acquisition activities.
4. Share of firms by different age groups in the total number of micro and small firms (below 50 employees) in each economy on average over 2001-11 (or available years). For more details, see Figure 6 in Criscuolo et al. (2014).

Source: S. Cao et al. (2015), "Trends in Firm Entry and New Entrepreneurship in Canada", *Bank of Canada Discussion Paper 2015-11*, October, Charts 1 and 3; C. Criscuolo, P.N. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", *OECD Science, Technology and Industry Policy Papers*, No. 14, OECD Publishing, *http://dx.doi.org/10.1787/5jz417hj6hg6-en*.

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Figure 20. **Three-year survival and growth outcomes of micro start-ups**[1, 2]

1. Refers to the group of firms that have between zero and nine employees at the beginning of each period and which are 0-2 years old. Inactive firms do not report information on employment at the end of the three-year period, either because they are temporarily inactive or because they have permanently exited. Sectors covered are: manufacturing, construction and non-financial business services. Average of the three-year periods (2001-04, 2004-07 and 2007-10). For more details, see *Source*.
2. See note 3 in Figure 19.

Source: C. Criscuolo, P.N. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", *OECD Science, Technology and Industry Policy Papers*, No. 14, OECD Publishing, *http://dx.doi.org/10.1787/5jz417hj6hg6-en*.

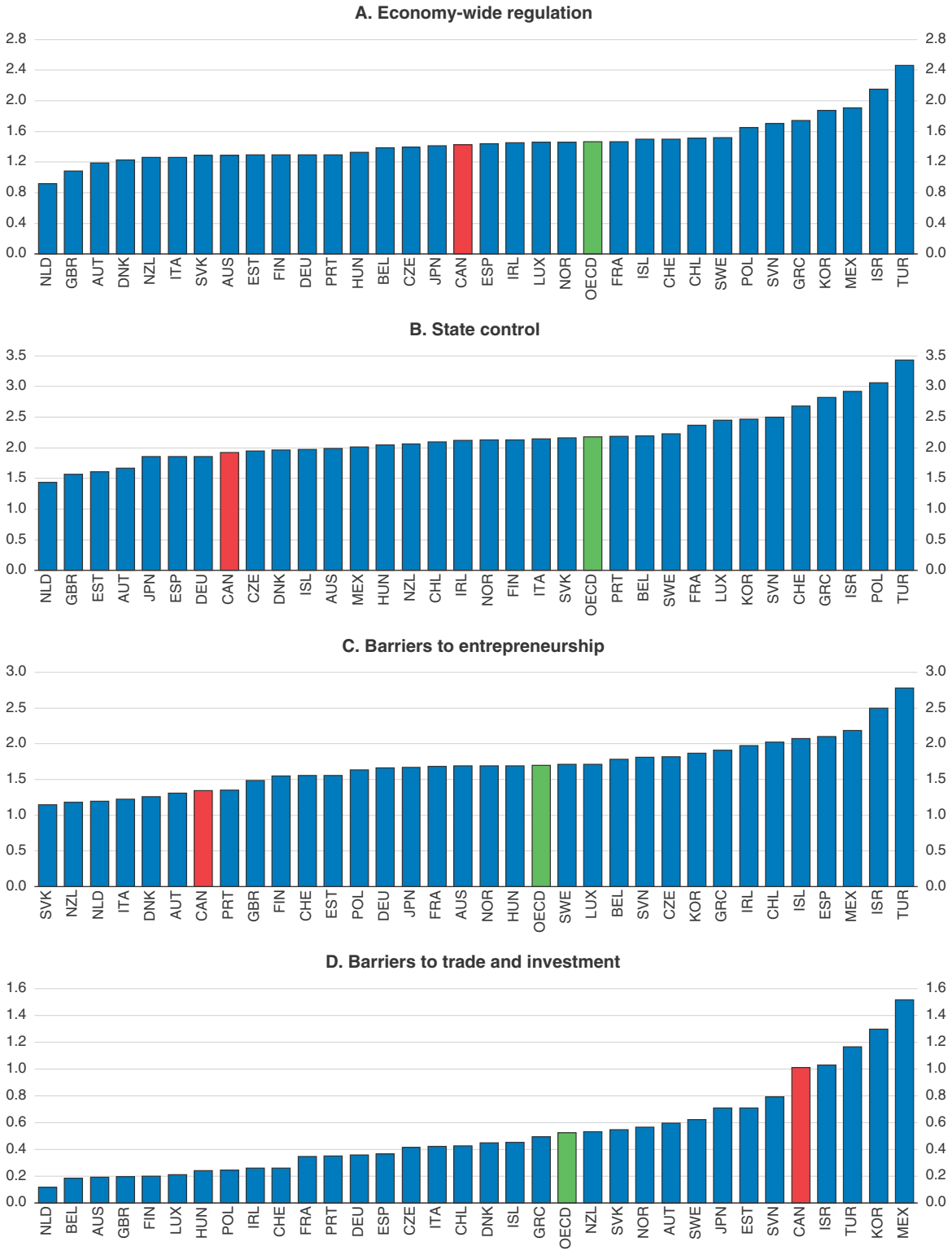
StatLink http://dx.doi.org/10.1787/888933370957

incumbents is high by international standards and arises primarily from an above-average use of antitrust exemptions.

Small business dynamism and productivity would also benefit from focusing small business programmes more clearly on reducing market failures. The programme with the largest budget cost, the preferential tax rate for companies under a threshold size based on taxable capital (known as the Small Business Deduction [SBD]), is not so focused. The aim of this arrangement is to leave them with more money to invest, effectively making it a financing programme. However, the economic literature on capital market failures does not establish a case for subsidising SMEs based on their size alone – such market failures

Figure 21. **Product market regulation overall is less restrictive than in most other countries**

Index scale from 0 (least restrictive) to 6 (most restrictive), 2013



Source: OECD, Product Market Regulation database.

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can result in too much or too little finance (Boadway and Keen, 2006; Braido et al., 2011; Boadway and Sato, 1999). In the Mirrlees Review of taxation in the United Kingdom (Mirrlees et al., 2010), it was concluded that there was no evidence of any general capital market failure affecting small firms (Crawford and Freedman, 2010). Accordingly, there was no case for a reduced small business corporate tax rate – this tax preference was abolished on 1 April 2015. The principal finance gap in the United Kingdom was for new and start-up businesses (Graham, 2004) and this could be more effectively addressed through targeted measures. As mentioned above, the federal government should include preferential taxation of small companies in its planned review of tax expenditures. If the review's conclusions are similar to those of the Mirrlees Review, the 2016 federal budget decision to defer a series of scheduled increases in the SBD (reductions in the small company tax rate) will be seen as a step in the right direction. The government should also review its targeted measures and adapt them as necessary to ensure that they correct clear market failures efficiently.

The federal government is also a major player in the venture capital market. A case can be made for subsidising venture capital based on the external benefits from innovation in firms suitable for venture capital. Indeed, such benefits may be much higher than for business R&D (Lerner, 2010). The key to success is finding instruments that increase the quantity of venture capital without diminishing its quality. One promising approach is to establish funds that operate like independent, limited partnership venture capital funds, with private partners selecting investments and mentoring, while the government leverages returns for the private investors by not sharing fully in any profits but fully sharing in losses. This approach has been successful in the United States (Lerner, 1999) and Australia (Cumming, 2007). It was adopted by the federal government through the Venture Capital Action Plan. A subsidiary of the Business Development Bank of Canada, BDC Capital Inc., represents the government as an investor in the Venture Capital Action Plan.

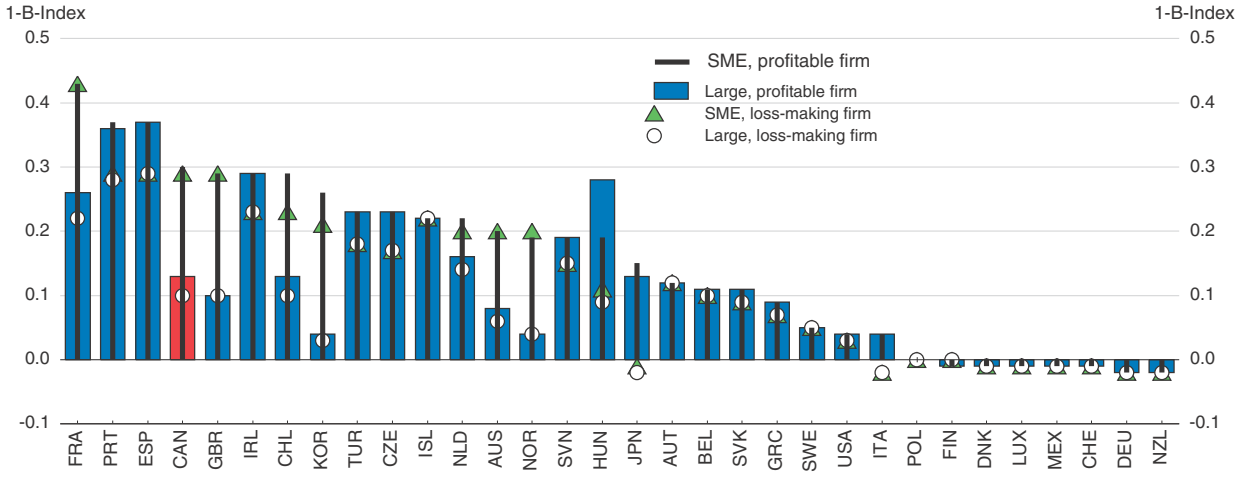
Government venture capital in Canada has underperformed private venture capital in terms of both value creation and innovation, according to a study that pre-dates the federal government's change of direction through the Venture Capital Action Plan (Brander et al., 2008). This underperformance reflects less effective mentoring and other value-adding skills, rather than lower-potential firms. In light of poor government venture capital performance based on both private and social returns, the federal Labour Sponsored Venture Capital Corporation tax subsidy should be phased out, as previously planned. In its place, more effective means of supporting venture capital, such as investments from BDC Capital Inc. in private sector-led managed funds and programmes contained in the Venture Capital Action Plan, should be explored.

Canadian governments provide enhanced (refundable) Scientific Research and Experimental Development (SR&ED) tax credits to Canadian Controlled Private Companies (CCPCs) with qualifying annual R&D expenditure up to CAD 3 million. The weighted average of combined federal and provincial enhanced credit tax rates is 43% compared with the combined standard rate of 20% on average (Lester, 2016). At the federal level alone, the SME R&D subsidy rate per marginal unit of R&D outlay and the extent to which it exceeds the standard rate are high by international comparison (Figure 22). Combined with provincial tax support, the implied R&D tax subsidy rate (as measured by one minus the B-index) can reach 40%, as in Québec, which provides one of the most generous fully refundable R&D tax credits among Canadian provinces. Yet, it is not clear whether the SME rate needs to be higher or

lower than the standard rate to correct market failures: information failures that make it more difficult for SMEs to obtain external finance for innovation support a higher rate while lower SME R&D spill-overs (Bloom et al., 2013) point in the opposite direction. To resolve this and other R&D subsidy issues, such as the appropriate balance between direct and indirect support and level for the standard tax credit rate, Canadian governments should evaluate R&D subsidy policies to ensure that they are providing value for money, as recommended in OECD (2016c). The federal government should re-examine the SR&ED tax credit (e.g. in the context of its announced tax expenditure review) and reconsider the balance between direct and indirect support for R&D.

Figure 22. **Implied tax subsidy rates[1] on R&D expenditures**

1-B-Index,[2] by firm size and profit scenario, 2015



1. These implied tax subsidy rates focus only on central government support and do not report provincial tax incentives, thus understating the level of Canadian tax support.
2. The B-index, a measure of the pre-tax income needed for a company to break even on a marginal, monetary unit of R&D outlay (OECD, 2013), takes into account tax relief provisions to derive implied tax subsidy rates (1 minus the B-index).

Source: OECD (2016), "R&D tax Incentives; Design and Evidence", *DSTI/IND/STP(2016)*1, Figure 1; OECD (2013), "Definition, Interpretation and Calculation of the B index", *Measuring R&D Tax Incentives*, October. *www.oecd.org/sti/b-index.pdf*.

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The 2016 federal budget proposes to launch a new initiative in 2016-17 to help high-impact (innovative) firms scale up and further their global competitiveness. Under this client-centred approach, firms will be able to access coordinated services (such as finance, advice and export and innovation support) tailored to their needs from the relevant federal agencies. This initiative aims to target 1 000 firms in the first few years and to expand thereafter.

There is also scope to increase female entrepreneurship. In 2011, only 15.5% of SMEs were majority-female owned, compared with 66.4% that were majority-owned by males (Industry Canada, 2015); ownership is evenly balanced between females and males in the remaining 18.1% of firms. Moreover, SMEs majority-owned by women had lower actual and expected growth rates than majority-male owned firms (Statistics Canada, 2011). Factors contributing to these gender gaps include female entrepreneurs having less management experience, less access to finance, greater childcare and eldercare responsibilities and less effective networks for accessing resources (OECD, 2016d; Hughes, 2006). To address some of these issues, recent budgets have included measures to foster networking, encourage

mentoring and championing, enhance access to international markets and provide finance (through the Business Development Bank of Canada). These measures could be built on by scaling up business development support to growth-oriented female-owned ventures. The highly successful "Grow to Greatness" accelerator programme of Alberta Women Entrepreneurs provides a role model for other jurisdictions. To increase female entry into high-technology manufacturing and knowledge-intensive service sectors, where growth opportunities tend to be stronger, more women need to obtain STEM (science, technology, engineering and mathematics) qualifications and pursue careers in these fields. For this to occur, it will be important to find ways to reduce the difference between stereotypes of successful people in these fields and of women – female gender stereotypes are incompatible with stereotypes of successful people in these fields, discouraging women from entering into them and resulting in discrimination when they do (Carli et al., 2016). Federal entrepreneurship programmes would also be more effective in increasing female entrepreneurship if they were extended to social enterprises, which tend to attract female entrepreneurs more than their male counterparts. Increasing assistance with child-care costs, which are relatively high in Canada by international comparison (OECD, 2014), could help female entrepreneurs constrained by family responsibilities to pursue more growth-oriented strategies, as do their male equivalents.

Indigenous Peoples are also underrepresented in SME ownership – only 2% of SMEs are operated by Indigenous entrepreneurs, about half of their share in the total population (Gulati, 2012). There are organisations dedicated to strengthening networks of entrepreneurs, mentoring and entrepreneurial skills, helping to develop successful role models in the process, but these efforts need to be reinforced. To promote Indigenous entrepreneurship, the top priority is to invest in education and capacity-building (Gulati and Burleton, 2015), both in Economic Development Corporations (how to set up and run one and create effective corporate governance arrangements), which are community firms that account for most Indigenous SME income, and in the Indigenous community at large (job and skills training). Indigenous firms also need better access to IT infrastructure – 20% of those in Ontario did not have an internet connection in 2013, rising to 37% for those on reserves (Canadian Council for Aboriginal Business, 2014).

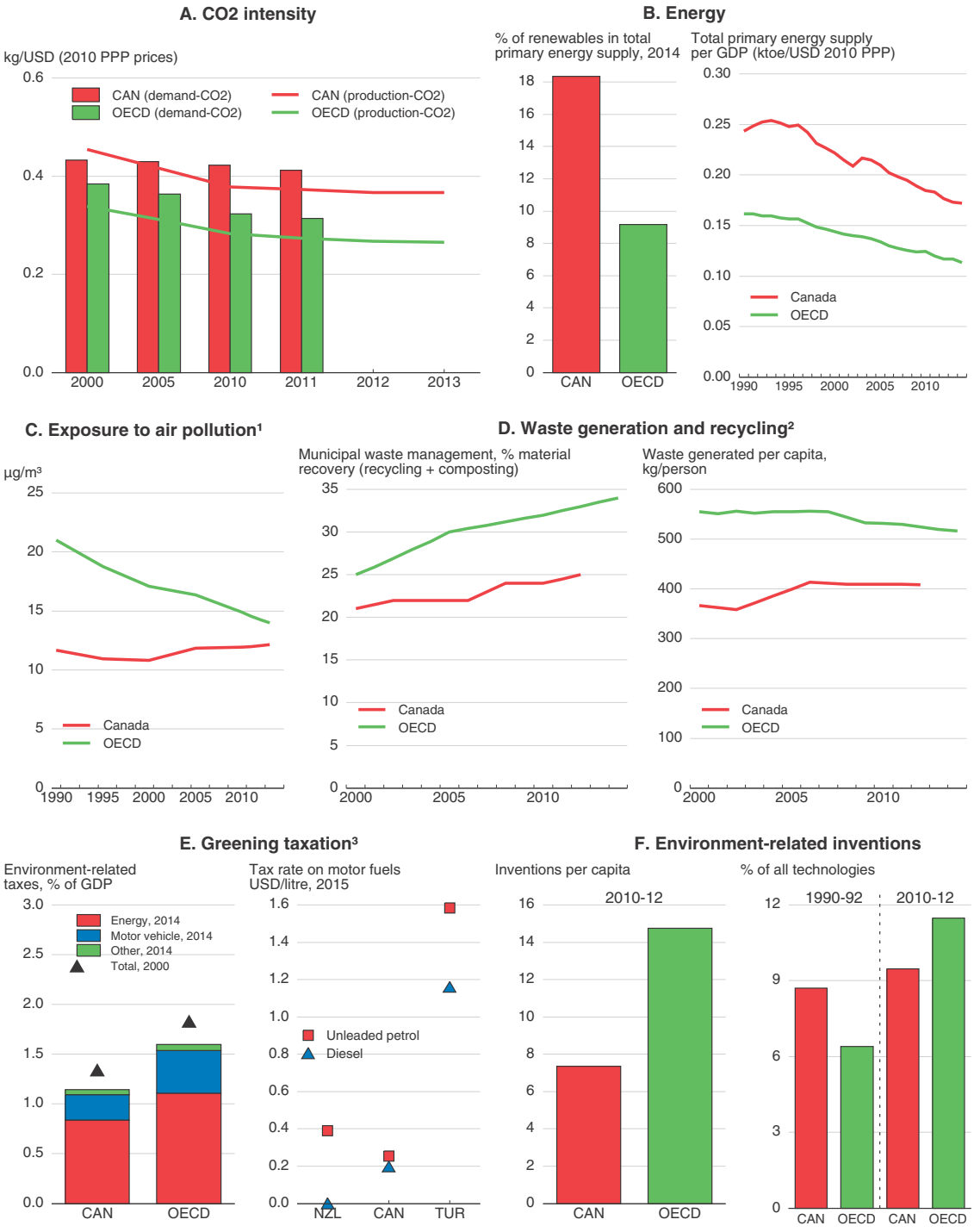
Improving environmental policies to promote sustainability and productivity

Greenhouse gas emissions

Canada's greenhouse gas emissions (GHGs) are among the highest in the OECD, both in relation to national income and in per capita terms. Factors contributing to high per capita emissions include high incomes, high climate variability and sparse population density. Though the overall level seems to have peaked, emissions are still well above their 1990 levels. Canada's carbon intensity has decreased over the last two decades but is nevertheless above the corresponding OECD average (Figure 23, Panel A).

While GHG emissions have fallen in recent years, declines have been much less than would have been required to meet the Copenhagen emissions-reduction target (a reduction of 17% from the 2005 level by 2020). For Canada to meet its COP21 target of reducing GHG emissions by 30% below 2005 levels by 2030, policy efforts need to be stepped up. Federal policy action on climate change under the previous government operated primarily through a sector-based regulatory approach. This included new regulations on emissions from coal-fired power stations built after 1 July 2015, effectively requiring them

Figure 23. **Environmental indicators**



1. Population-weighted average annual concentration of PM 2.5 (µg/m³). This indicator is calculated using concentrations estimates from the Global Burden of Disease (GBD) team based on a combination of global satellite observations and ground-based measurements.
2. OECD data are estimates and refer to municipal waste. Canadian data refer to waste from households (as proxy for municipal waste).
3. Includes taxes at both central and lower levels of government.

Source: OECD (2016), OECD Environment Statistics database (Green Growth Indicators, Patents: Technology Development, Municipal Waste); OECD National Accounts database; IEA (2016), IEA World Energy Statistics and Balances database; IEA Energy Prices and Taxes database; OECD calculations based on data from M. Brauer et al. (2016), "Ambient Air Pollution Exposure Estimation for the Global Burden of Disease 2013". *Environmental Science & Technology* 50 (1), pp. 79-88.

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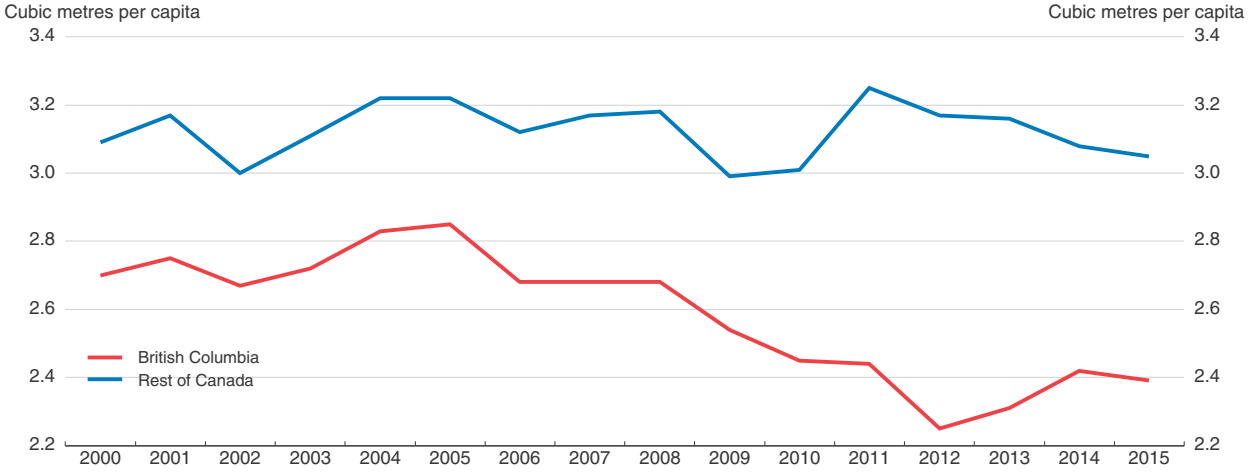
to operate at an emission intensity level which is made possible by the use of carbon capture and storage (older installations are grandfathered until 2030). Passenger vehicles, light trucks and heavy-duty vehicles are subject to progressively tightening GHG emission standards in line with their US counterparts.

Some provinces have moved towards employing market-based instruments to address GHG emissions. British Columbia introduced its carbon tax in July 2008; it has had a noticeable impact on fuel sales (Figure 24) and has not harmed the province's overall economic performance. Québec also implemented a modest carbon levy on fuel from 2007 to 2014 and introduced a cap-and-trade system in 2013 which is now linked with California's under the Western Climate Initiative (WCI). Ontario plans to launch a similar cap-and-trade system in January 2017 while Manitoba announced plans for a cap-and-trade system for large emitters in December 2015. Ontario and Manitoba intend to join Québec and California under the WCI. Alberta has recently announced revisions to its baseline-and-credit system for large emitters and a new carbon levy on transportation and heating fuels, as well as new regulatory measures to cap emissions from the oil sands and phase out coal-fired power plants.

Figure 24. **British Columbia's carbon tax has resulted in lower petroleum-based fuel sales**[1]



1. Years N start in August N-1 and finish in July N.
Source: Statistics Canada, Tables 134-0004 and 051-0001.

StatLink http://dx.doi.org/10.1787/888933370995

Abatement costs would be reduced by coordinating provincial schemes and ensuring that carbon is adequately priced across the country to achieve the nation's abatement objectives. As agreed in the March 2016 Vancouver declaration, the federal government is working with the provinces and territories to implement a pan-Canadian framework for clean growth and climate change by early 2017, which will enable Canada to meet or exceed its international emissions targets and transition to a stronger, more resilient, low-carbon economy. Working groups to identify options for action will be created in four areas: clean technology, innovation and jobs; carbon pricing mechanisms; specific mitigation opportunities; and adaptation and climate resilience. The federal government has also recently announced CAD 2 billion for the creation of the Low Carbon Economy Fund, which will support provincial and territorial actions to address climate change. It has also

announced CAD 1 billion to support clean technologies, which are intended to play a critical role in the transition to a low-carbon economy.

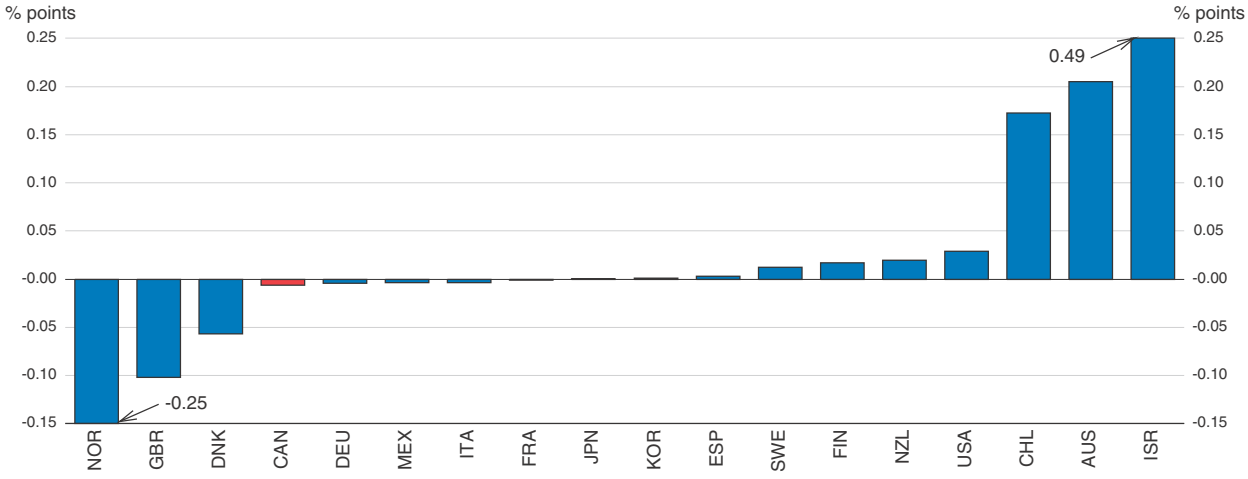
In a joint statement with the United States made in March 2006, Canada committed to reducing methane emissions by 40-45% below 2012 levels by 2025 from the oil and gas sector, and to explore new opportunities for additional methane reductions. In the same joint statement, Canada and the United States also committed to reduce the use and emissions of hydrofluorocarbons (HFCs), to propose new actions on HFCs in 2016, and adopt aligned GHG emissions standards for post-2018 model year on-road heavy-duty vehicles. Canada and the United States also recently endorsed the World Bank's Zero Routine Flaring by 2030 Initiative.

Other environmental issues

The Canadian economy is one of the most energy intensive in the OECD, after Iceland and Estonia (Figure 23, Panel B). Seventy per cent of its energy is obtained from fossil fuels, below the OECD average of around 80%. The estimated contribution of natural resources to GDP, which consist mainly of energy extraction, edged down over the first years of the century (Figure 25).

Figure 25. **Contribution of domestic natural capital to GDP growth**[1]

Average 2000-13[2]



1. The measured contribution of natural capital to output growth provides a lower bound on the contribution of the natural resources extraction industry. The contribution of the extraction industry to output growth is greater because it also includes investment in produced capital and labour force.
2. Or latest year available.

Source: OECD (2016), *Environmentally Adjusted Multifactor Productivity: Methodology and Empirical Results for OECD and G20 Countries* (forthcoming).

StatLink http://dx.doi.org/10.1787/888933371001

The average exposure to fine particulate matter ($PM_{2.5}$) in Canada has edged up over the last 14 years, while the average across OECD countries has fallen closer to the level in Canada (Figure 23, Panel C). Although emissions from industrial sources, residential wood combustion and transportation have declined over this period, emissions from road dust and construction activities have increased enough to offset this decline (Environment and Climate Change Canada, 2016).

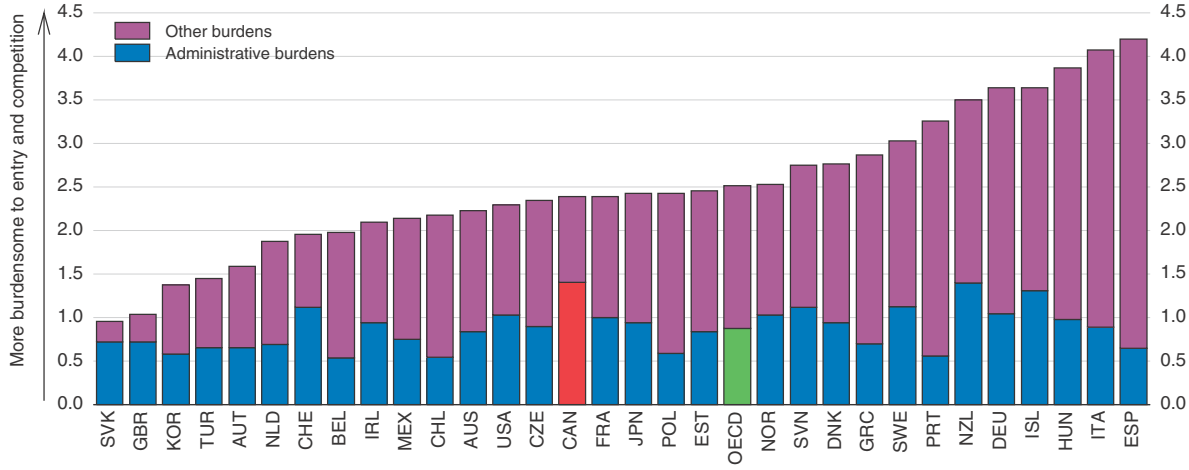
Municipal waste (proxied by household waste in Canada) generation per capita is lower than in most similar countries for which data are available (Figure 23, Panel D). Rates of material recovery from municipal waste in Canada are below the OECD average and are increasing less rapidly.

Canada has a relatively large share of the population not connected to public sewage systems, though agriculture is probably a more important source of surface water pollution. The Canada-based International Institute for Sustainable Development suggests that water quality, including possible pollution from industrial sites, including energy-related sites, is an environmental priority (IISD, 2015).

Revenues from environment-related taxes (covering all levels of government) are much lower than in other countries, largely because of low energy taxation (Figure 23, Panel E). Though higher than in the United States, the average tax rate on motor fuel is well below the level in Europe, for example. As in all other OECD and G20 countries except the United States, diesel is taxed at a lower rate than gasoline, even though its environmental externalities are higher.

While the economic costs of environmental policies in Canada are probably below the OECD average, administrative burdens are comparatively high (Figure 26). They include, for instance, a lack of single contact points (i.e. "one-stop shops" for environmental permitting), single applications and integrated permits (Koźluk, 2014), whose absence may also be especially burdensome for SMEs. This is partially a function of the constitutional arrangements in Canada, under which environmental protection and permitting responsibilities are distributed among both national and sub-national jurisdictions, which is not the case in all OECD countries. Time limits to issue permits and licences are also generally absent. Streamlining this process could help to increase overall productivity growth by lowering the costs of doing business and easing firm entry. Moreover, making greater use of market-based environmental policy instruments would be more productivity-friendly than using non-market instruments (Albrizio et al., 2014), owing to greater flexibility in the abatement process.

Figure 26. **Burdens on the economy due to environmental policies**



Source: T. Kozluk (2014), "The Indicators of the Economic Burdens of Environmental Policy Design – Results from the OECD Questionnaire", *OECD Economics Department Working Papers*, No. 1178, OECD Publishing.

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ANNEX

Progress in structural reform

This Annex reviews the measures taken in response to the recommendations from previous Economic Surveys. The recommendations that are new to the present Economic Survey are contained in the corresponding chapters.

Recommendations in previous *Surveys*	Actions taken since May 2014 and current assessment
A. Product market competition	
Lift restrictions on foreign direct investment in airlines, telecoms, broadcasting, culture and post and fulfil commitments to fully open telecoms to competition.	No actions taken since restrictions on telecoms companies with less than a 10% share of the market were lifted in 2012.
Minimise use of industrial subsidies, and scale back business assistance programmes to those that address a real market failure at minimum economic cost.	The latest National Accounts data (for 2014) show Canada's recourse to subsidies to be 7th lowest in the OECD at less than 0.9% of GDP (the OECD simple average is 1.7%) and that they have been falling trend-wise since 2003, when they reached more than 1.4% of GDP. The 2014 outcome is a post-1990 record low.
B. Financial-sector policies	
Employ further macro-prudential measures as needed if household debt ratios continue to rise.	Household debt and house prices continue to increase. Additional macro-prudential measures have been employed recently to reduce housing-related risks. The federal government increased down-payment requirements for insured mortgages from 5 to 10% for the portion of homes priced between CAD 500 000 and CAD 1 million, which is the ceiling on availability of public mortgage insurance, effective 15 February 2016. The Office of the Superintendent of Financial Institutions is also proposing changes to the capital framework of federally regulated lenders and private mortgage insurers to ensure that capital requirements keep pace with housing market developments and risks, such as when regional house prices are high relative to incomes. The Canada Mortgage and Housing Corporation is also increasing guarantee fees on National Housing Act mortgage-backed securities and Canada Mortgage Bonds, effective 1 July 2016, which could lead to modest increases in mortgage rates for consumers.
Establish a comprehensive national securities regulator, with strengthened efforts to get the consensus of all provinces.	While federal government support has been longstanding, its proposal for a national regulator in 2011 was deemed unconstitutional. Since then, the governments of British Columbia, New Brunswick, Ontario, Prince Edward Island, Saskatchewan, the Yukon and Canada have agreed to jointly establish a Cooperative Capital Markets Regulatory System. Together, they continue to invite all other provinces and territories to participate in it.
C. Fiscal policy and fiscal federalism	
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.	In its 2016 budget, the federal government committed to reducing the federal-debt-to-GDP ratio over a five-year period, ending in 2020-21, but did not specify targets. It also noted that it remains committed to eventually returning to balanced budgets.
Factor in differences in age structure when calculating federal transfers to provinces.	No action taken.
Establish provincial budget agencies, 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.	Ontario has established the Financial Accountability Office.
D. Taxation	
Eliminate GST zero rating for basic groceries.	No action taken.
Switch from provincial sales taxes (PST) to value-added taxes (VAT). Change the tax mix to rely more on VAT and less on less efficient income and profit taxes.	No action taken. Manitoba, Saskatchewan and British Columbia continue to levy PSTs. These provinces represent only about 20% of GDP.
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 small businesses (in this case up to an indexed lifetime limit, which is currently CAD 824 176).	The 2016 federal budget promised a review of tax expenditures. It should examine them from both a tax efficiency and equity vantage point.
Continue to rationalise federal and provincial business tax preferences for small scale, Canadian owned firms.	The 2016 federal budget re-affirmed a half-percentage-point reduction in the federal small business corporate income tax rate as of 2016, increasing the gap with the standard corporate tax rate to 4.5 percentage points, which goes in the opposite direction of the recommendation. However, it was also announced in the budget that further reductions in the rate, which had been announced in 2015, had been deferred.
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.

Recommendations in previous *Surveys*	Actions taken since May 2014 and current assessment
E. Social and labour market policies	
If the 2013 Employment-Insurance reforms do not clearly cut repeat use, adopt employer- or employee-targeted measures that improve the insurance and incentive basis of the programme and enhance opportunities for seasonal workers to retrain.	To date, the evidence is mixed, with only a marginal decline in the share of frequent claimants in total EI regular claims since the 2013 reforms, which occurred in large part due to a moderation in the least problematic provinces. On the other hand, the share of the unemployed receiving EI benefits fell in Atlantic Canada and Quebec (regions with high repeat use) following the reforms, with a flat level in the rest of Canada. The 2016 federal budget announced the cancellation of these reforms.
F. Health-care policies	
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.	Most physicians in Canada still operate under a fee-for-service model. The 2013-14 National Physician Database indicates that the share of alternative clinical payments in total payments has remained unchanged since 2011-12 at 28.8%. Of the many types of alternative clinical payments available, the value of capitation payments increased from 2.4% in 2011-12 to 3.3% in 2013-14. However, salary payments declined from 8.3% of alternative clinical payments in 2011-12 to 4.0% in 2013-14.
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 2/3 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.	No action taken.
Regulate private health insurance (PHI) to prevent adverse selection, and remove tax exemptions for employer provided private health insurance benefits.	No action taken.
Establish a pan-Canadian independent agency to monitor and analyse health-care quality.	While an agency has not yet been established, the Canadian Institute for Health Information has increased its reporting on the performance of the health-care system, including developing a web site allowing the public to compare the performance of jurisdictions and health-care institutions on a range of quality and access indicators.
G. Tertiary education and skills shortages	
Increase access to tertiary education for disadvantaged groups by increasing targeted needs-based financial assistance. Reduce barriers for debt-averse financially disadvantaged students by making the aid application process more transparent.	The 2016 federal budget announced measures to make post-secondary education more affordable for students from low- and middle-income families, such as increased amounts and eligibility thresholds for Canada Student Grants (non-repayable financial assistance). In addition, the 2016 budget proposed to replace the current system of assessing student income and financial assets to determine eligibility for Canada Student Loans and Grants by a requirement for students to contribute a flat amount towards the costs of their education. This change will allow students to work without having to worry about a reduction in their financial assistance and will make the Canada Student Loans Program application process more predictable and transparent. Ontario will make college and university tuition free for students from families with incomes of CAD 50 000 or less and increase financial support for middle-class families as from 2017-18. These changes are to be funded by eliminating the Ontario tuition and education tax credits (which are not means tested). New Brunswick has also introduced income-dependent free tuition for students.
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.
Publish data on student outcomes by tertiary education institutions.	The federal government is consulting with institutions and stakeholders to strengthen the data on student outcomes of tertiary institutions.

Recommendations in previous *Surveys*	Actions taken since May 2014 and current assessment
Reduce the incidence of weak numeracy or literacy skills being a barrier to post-secondary education (PSE) completion.	Through its Office of Literacy and Essential Skills, the federal government provides funding to a broad range of programmes that strengthen Canadians' essential skills.
Strengthen the single market for labour by making Agreement on Internal Trade Dispute Resolution Panels more accessible and expediting their procedures. Also, harmonise training and certification requirements of all apprenticeship programmes to boost apprentices' completion rates and interprovincial mobility.	Provinces and territories are implementing the Provincial-Territorial Apprentice Mobility Agreement, which came into effect in September 2015. It provides apprentices with greater recognition of their training, work experience and examination results when moving between provinces or territories.
Provide a deeper occupational and regional breakdown of vacancy and unemployment data to facilitate job matching and data on recruitment intensity to strengthen surveillance of job-matching efficiency.	Statistics Canada recently established a new annual Job Vacancy and Wage Survey (JVWS) to provide timely and detailed information on occupational demand and wages at the regional level. In addition to the number of job vacancies for which employers are recruiting externally, the new JVWS collects information on vacancies by occupation, the minimum level of education and work experience required, the wage or salary offered, whether the vacant positions are full-time, part-time, permanent, temporary or seasonal, the methods used to advertise the vacancies and the duration of recruitment efforts. The JVWS will provide a more detailed picture of the labour needs of Canadian employers than previously available.
H. 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 scale up direct grants.	With respect to direct support, the 2016 federal budget increases funding for the Industrial Research Assistance Program by CAD 50 million in 2016-17 (building on the CAD 110 million per year increase in the 2012 budget), pending the development of the government's Innovation Agenda in the coming year. The 2016 budget also makes available CAD 800 million in new support for innovation networks and clusters, to be allocated through the forthcoming Innovation Agenda.
Subject the Industrial Research Assistance Program (IRAP) and other R&D support programmes to rigorous cost-benefit evaluations.	A cost-benefit evaluation of IRAP was conducted as part of the 2012-13 evaluation of the programme. More generally, however, data limitations challenge the conduct of robust innovation programme evaluations. Better data should be collected by governments to evaluate interventions in a robust manner.
Encourage tertiary education institutions to include training in entrepreneurship and business skills in their science-based programmes.	No action taken.
Boost technology transfer from academia by adopting a research-granting process more open to business needs, best-practice models for university patenting and a system of vouchers for research contracting.	The federal government supports research collaborations between academia and businesses in a variety of ways, including project support through the federal granting councils and Regional Development Agencies, network support, such as the business-led Networks of Centres of Excellence Program, and graduate-level and post-doctoral industrial research and development internships delivered through Mitacs. Other than increasing support for such activities in successive federal budgets, steps have been taken in recent years to ease the administrative burden on participating firms through common application processes, open application cycles and more streamlined programming. Voucher and similar initiatives are currently being deployed in seven provinces and through federal research grants requiring no matching funds from business partners for research as well as consulting services (e.g. Engage Grants). Further to a measure in the 2014 federal budget, the Industrial Research Assistance Program recently piloted a three-year, CAD 20 million voucher programme enabling client SMEs to access business services and technical assistance from post-secondary and other publicly funded institutions. A recent evaluation found that it duplicated assistance through other programmes.
I. Energy and environmental policies	
Continue expanding the use of market instruments to price carbon emissions, and consider introduction of a (federal) GHG emissions tax. Work with the provinces and territories to ensure coherence of their climate-change strategies with Canada's international commitments. Lower levels of government could also implement more green taxes and congestion charges.	Trading in GHG emission permits between Québec and California began in 2014. Ontario and Manitoba plan to implement a cap-and-trade system compatible with Québec and California's. In addition, British Columbia and Alberta have policies in place related to carbon pricing, while Alberta recently announced revisions to its policies that will expand the coverage of emissions subject to carbon pricing. As agreed in the March 2016 Vancouver declaration, the federal government is working with the provinces and territories to implement a pan-Canadian framework for clean growth and climate change by early 2017 that will include a coordinated approach to carbon pricing.
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.

Recommendations in previous *Surveys*	Actions taken since May 2014 and current assessment
Liberalise electricity markets in provinces where they are still regulated. Liberalise trade in energy goods and services among provinces by finalising the energy chapter of the Agreement on Internal Trade.	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.	No action taken.
Ensure that regulatory objectives for treating waste from oil-sands projects are met.	Following the Alberta government's issuance of a tailings management framework for the Athabasca oil-sands in March 2015, the Alberta Energy Regulator (AER) is in the process of developing new requirements for tailings management. It will set project-specific thresholds based on information submitted in tailings management applications. Operators must report their fluid tailings volumes annually. The AER is supposed to take appropriate compliance and enforcement action if any are exceeding their thresholds.
J. Agricultural policies	
Phase out the supply management regimes by the progressive introduction of market forces, in particular, for milk and eggs.	The Senate has tasked Ernst and Young to report on the effects of supply management.
Consider the use of business risk-management tools to replace government safety-net programmes that create moral hazard and place a heavy burden on the budget.	Under the federal-provincial-territorial Growing Forward 2 2013-18 Multilateral Framework Agreement, the coverage of Business Risk Management programmes, specifically AgriStability and AgriInvest, were changed to focus government support on disasters and severe market volatility as well as to provide an opportunity to reinvest in innovation and market development.
K. Housing policies	
Tighten mortgage insurance to cover only part of lenders' losses in case of mortgage default. Raise the private-sector share of the market by gradually reducing the cap on the Canada Mortgage and Housing Corporation's (CMHC) insured mortgages. Consider eventually privatising CMHC's insurance arm.	No action taken.
Expand low-cost rental housing supply and densification by adjusting zoning regulations to promote more multi-unit dwellings. Consider increasing incentives for private-sector development of affordable housing.	The 2016 federal budget announced CAD 208.3 million over five years, starting in 2016-17, for an Affordable Rental Housing Innovation Fund to test innovative business approaches to lower the costs and risks of financing affordable rental housing. Going forward, the government will also consult with stakeholders on the design of an Affordable Rental Housing Financing Initiative to provide low-cost loans to municipalities and housing developers for the construction of new affordable rental housing projects.
Undertake closer monitoring of activities in the unregulated mortgage lending sector to improve understanding of risk exposures. Increase cooperation and information sharing between federal and provincial financial regulators.	Canadian authorities are monitoring shadow-banking entities, including through participation in Financial Stability Board information-sharing exercises and regular domestic monitoring of shadow banking. Given that many prudentially unregulated mortgage lenders rely on mortgage insurance/CMHC-sponsored securitisation or loan sales to federally regulated banks to fund their mortgages, the vast majority of their mortgages must be compliant with federal rules. Nonetheless, unregulated lenders are being monitored by federal authorities.
As long-term federal subsidy agreements on public housing units expire, devote some of the savings to a renovation and energy retrofitting programme for viable social housing projects.	The 2016 federal budget announced spending of CAD 2.3 billion over two years to support affordable housing. Of this amount, CAD 573.9 million will support energy and water efficiency retrofits and renovations to existing social housing; and CAD 504.4 million will double funding under the Investment in Affordable Housing initiative, which supports the construction of new affordable rental housing units, the renovation and repair of existing affordable housing, measures to support housing affordability (such as rent supplements) and measures to foster safe, independent living. This federal funding also includes CAD 739 million to support housing in First Nations, Inuit, and northern communities.

Recommendations in previous *Surveys*	Actions taken since May 2014 and current assessment
Reform development-charge regimes to ensure developers are charged the true cost of providing infrastructure to the area being developed. Make greater use of road-use charging and parking fees, and increase integration of public-transit planning with land-development decisions.	No action taken on making greater use of road-use charging and parking fees. Efforts to reform development-charge regimes to better account for true infrastructure costs and improve the integration of public-transit planning with land-development decisions have been mixed. Plans in Vancouver to replace area-specific development charge levies (DCLs) with a city-wide DCL may reduce opportunities to internalise the varying costs of providing infrastructure. The 2015 Ontario Smart Growth for our Communities Act will provide more funding for transit and waste diversion through development charges and may improve integrated planning.
Continue efforts to legalise and encourage secondary suites and laneway housing in single-family residential zones.	While this was already permitted in Vancouver and Toronto, it has not been expanded further in recent years to cover all single-family residential zones elsewhere.
Remove property tax rate differentials that disadvantage multi-unit rental properties relative to owner-occupied housing.	No action taken.
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.	While already available in Vancouver, which may have contributed to a pickup in purpose-built rental starts since mid-2012, such tools do not appear to have been applied in other municipalities with strong house price growth. This recommendation remains relevant for Toronto (and, to a lesser extent, Victoria), where rental vacancies (both in purpose-built rentals and the secondary market) remain low. Increased supply, along with reduced demand due to weaker commodity prices, has led to increased vacancy rates in Alberta and Saskatchewan, reducing the urgency for such actions in these markets.

Thematic chapters

Chapter 1

Strengthening competition in network sectors and the internal market

Canada's productivity performance has lagged that of many other OECD countries, despite some improvement in recent years. One measure to enhance overall efficiency would be to strengthen competition on the domestic market to drive future multi-factor productivity improvements. The potential gains are large: about a half a percent per year over a fairly long horizon. This chapter focuses on increasing competition in network sectors, including energy, telecommunication services and broadcasting, and transportation, which are key inputs to production in the broader economy. Improving regulatory conditions, efficiency and/or cost competitiveness could yield more productive outcomes in these sectors, as well as in downstream industries. Competition could also be increased by lowering barriers to interprovincial trade and the movement of labour, which act to fragment Canada's already small domestic market. To this end, reforms of the Agreement on Internal Trade and measures to reduce sectoral barriers to trade are also discussed.

Introduction

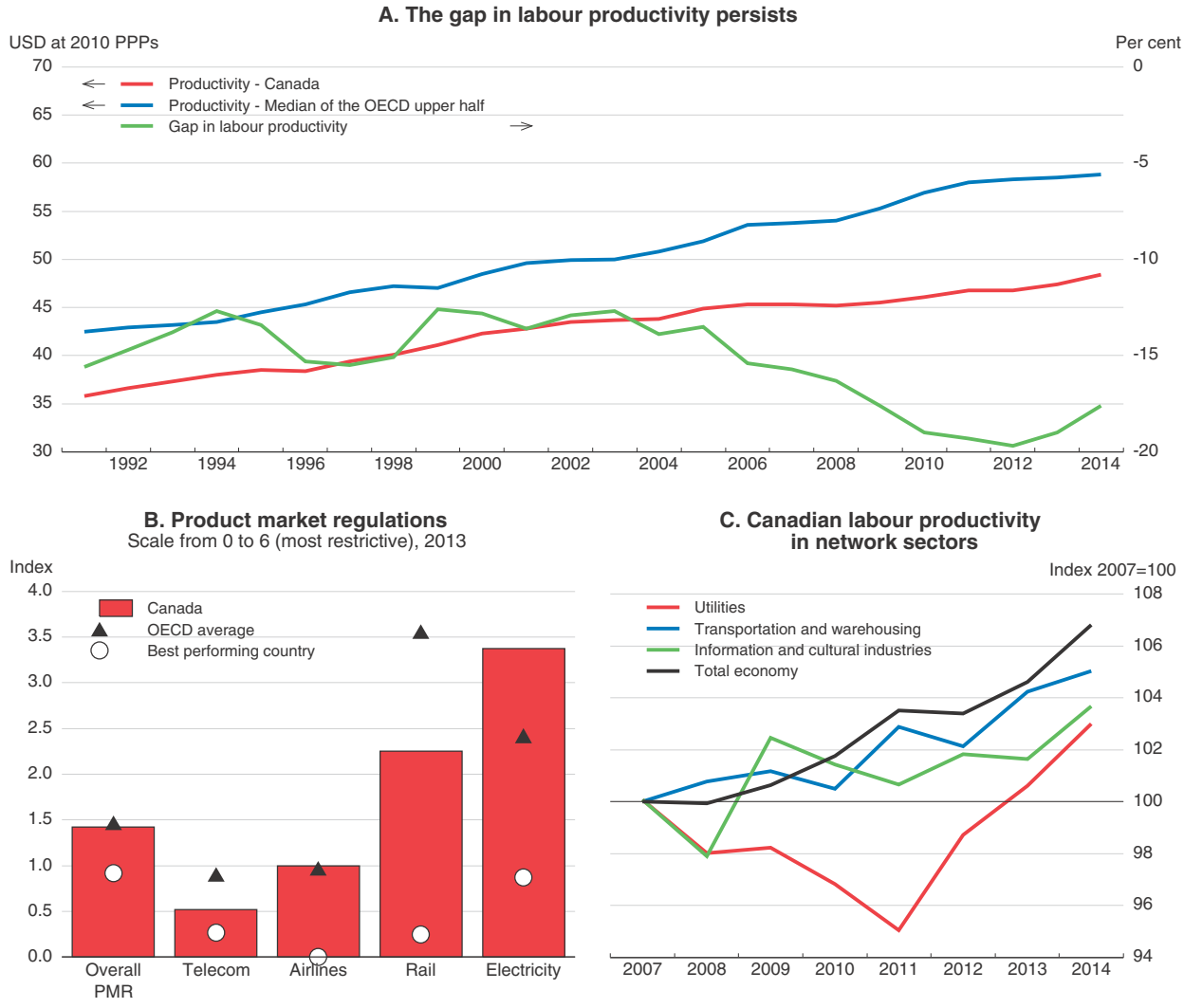
Productivity in Canada has lagged that in the best performing countries, resulting in a gap in GDP per hour worked (Figure 1.1, Panel A). As productivity is ultimately the source of higher incomes and wider personal choices, addressing this shortfall is an important long-term policy challenge. The discipline provided by enhancing competition in the Canadian market place and strengthening the internal market can play a role in sustaining this productivity improvement.

Pro-competitive regulation can boost living standards, including by strengthening product safety and consumer protection. But poorly designed regulations lower productivity by weakening incentives to innovate, to adopt the technologies and organisational arrangements used by firms at the global productivity frontier and to limit reallocation of resources to the most productive firms (Andrews et al., 2015). One measure of regulations is the OECD's product market regulation indicator (PMR) (Koske et al., 2015). While overall PMRs in Canada are about as strict as the OECD average, adopting best practice (defined as the best three OECD countries' outcomes) would generate an estimated multi-factor productivity gain of some 3.2% (5.6%) over a five-(ten-) year horizon. Moreover, PMRs in the network sectors of electricity, air transportation and telecommunication services are significantly more restrictive than those of best performers (Figure 1.1, Panel B). In these sectors labour productivity growth has lagged behind the broader economy (Panel C). Elsewhere, based on the OECD's STAN database, productivity outcomes are mixed, depending on the sector, though productivity weakness has been broad based.

Foreign direct investment restrictions, which are heavy in Canada, shrink access to capital, deter technology adoption and reduce competitive pressures and cost efficiency. Greater competition through eliminating foreign ownership restrictions in telecommunications, for example, could lower prices and increase access to fast, high-quality networks, raising business efficiency, better matching supply and demand in real time and enhancing the synchronisation of goods, services and payments in the supply chain. Lowering trade restrictions in telecommunications has been associated with more Internet subscriptions and may also boost exports of services and information-intensive goods (Nordås and Rouzet, 2015).

Competitive and efficient transportation services are crucial for Canada's integration into the global economy. For instance, cost-effective air transport services are important for trade in high-value products and time-sensitive goods. They also facilitate travel (and thereby well-being) and the tourism industry. Improving the regulatory environment and reducing foreign ownership restrictions in transportation could lead to an expansion of exports, strengthening export performance (exports relative to foreign market growth), which has deteriorated significantly in recent years (Figure 1.2, Panel A). These services are a significant input into industrial exports and tend to play a somewhat larger role in Canada than in many other OECD countries (Panel B), probably reflecting its geographical

Figure 1.1. **Labour productivity and regulation**



Source: Statistics Canada; OECD, National Accounts database, Productivity database and Product Market Regulation database.

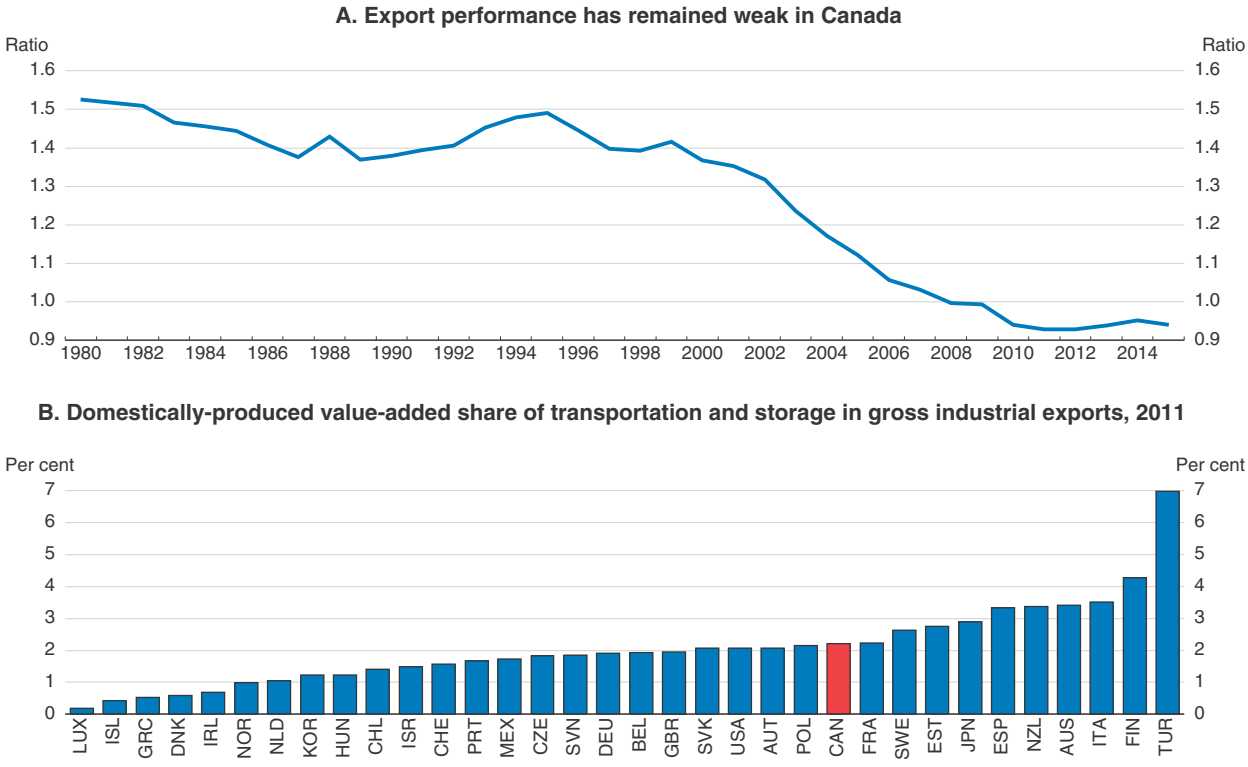
StatLink http://dx.doi.org/10.1787/888933371020

size and export composition. According to Hummels and Schaur (2013), an additional day in transit is equivalent to an *ad valorem* tariff of 0.6 to 2.1%, depending how time-sensitive the product is.

Production scale also affects productivity. Measures that fragment markets and stifle competition limit the effective scale of production, lowering productivity and efficiency and increasing domestic prices. This includes barriers that restrict the movement of goods and services and reduce labour mobility across provincial borders.

Overall, this chapter first discusses how competition in the network sectors of energy, telecommunications and broadcasting, and transportation may be strengthened through improving regulations and reducing interprovincial barriers. Second, the functioning of Canada's internal market is examined, including the Agreement on Internal Trade (AIT)

Figure 1.2. **Export competitiveness**



Source: OECD, Economic Outlook database; OECD-WTO, Trade in Value Added database.

StatLink http://dx.doi.org/10.1787/888933371032

and potential reforms that could improve its effectiveness. In addition, measures to enhance labour mobility and reduce sectoral barriers are discussed. Last, institutional reforms to improve the assessment of regulatory measures on competition are examined.

Unleashing competition in network sectors

Energy

Improving competition in the electricity sector, including through increased provincial market integration and the adoption of a more competitive market structure in generation, could raise efficiency, reduce potential overinvestment, increase the resilience of the system to potential electricity shortages, facilitate more affordable ways to achieve environmental objectives and permit increased integration of intermittent sources of electricity (such as solar and wind). The benefits of heightened competition on end-user prices will probably vary by province, as some are currently charging below-market rates by sharing the underlying resource rents with users. However, increased revenues in these provinces and improved returns to capital could be used to develop other infrastructure, fund programmes with higher returns, cut the most distortionary taxes or compensate those on low incomes and fight poverty, though they may also negatively affect competitiveness positions, given low US electricity prices. Natural gas markets, on the other hand, have comparatively low levels of regulation; past deregulation in this sector may provide a guide to better electricity market regulation.

Electricity

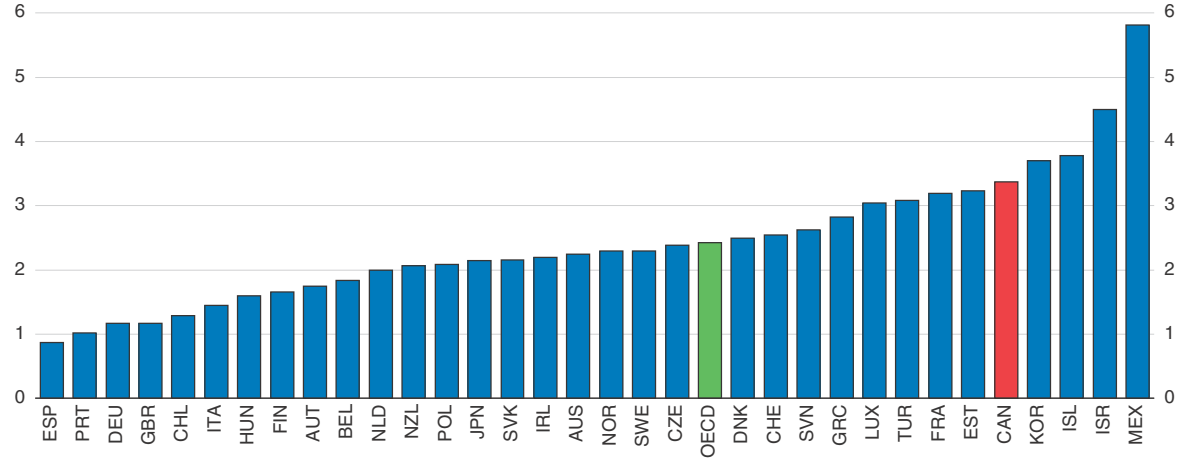
Market structure

Electricity markets are highly fragmented in Canada, owing to the provinces' central regulatory role. Federal regulation in this area is largely confined to the review and approval of international interconnections with the United States and oversight of nuclear safety and security. Integration between provincial electricity markets is generally limited, with no major east-to-west interconnections, other than between Ontario, Quebec and Newfoundland and Labrador. Most major interconnections run north to south into the United States, with more electricity being traded with the United States than between Canadian provinces.

Regulation in the Canadian electricity sector is heavy relative to most other OECD countries (Figure 1.3), reflecting a large share of public ownership and, to a lesser extent, limited vertical separation and high industry concentration in generation. According to the OECD's PMR indicators, the faster multi-factor productivity gains available from liberalising current Canadian regulatory arrangements in the generation and distribution segments of this sector are moderate, at a little less than 0.1% per year in the medium term for the overall economy. Besides important differences among provinces in generation mix (Table 1.1, Panel A), there are also wide variations in market structures (Table 1.2) and ownership (Table 1.1, Panel B), the impact of which on outcomes is highly controversial. In most provinces, electricity generation, transmission and distribution are controlled by a vertically integrated publicly owned monopoly, although in Nova Scotia and Prince Edward Island the monopoly is privately owned, and in Alberta there is a competitive structure. Some provinces have limited accounting separation between generation, transmission and distribution. However, electrical generation and marketing lack the same scale economies as distribution and transmission, implying that there is room for competition among generators. Competition could be enhanced if generation were fully separated from transmission and distribution, as long as generators are provided with non-discriminatory access to transmission lines at reasonable prices. This would require regulation and significant divestment by incumbent generators.

Figure 1.3. **Sectoral regulation in the electricity sector**

Index scale from 0 (least restrictive) to 6 (most restrictive), 2013



Source: OECD, Product Market Regulation database.

StatLink http://dx.doi.org/10.1787/888933371049

Table 1.1. **Provincial electricity generation characteristics**

Per cent, 2014 data

	Canada[1]	British Columbia	Alberta	Saskat-chewan	Manitoba	Ontario	Quebec	New Brunswick	Nova Scotia	Prince Edward Island	Newfound-land and Labrador
A. Generation by type											
Coal	10.4	0	69.3	46.6	0.1	0.0	0.0	15.9	53.9	0.0	0.0
Natural gas	5.4	1.6	19.6	22.2	0.1	7.0	0.0	10.6	14.3	0.0	0.0
Nuclear	17.5	0.0	0.0	0.0	0.0	63.0	0.0	33.4	0.0	0.0	0.0
Other fuels	2.6	1.5	4.2	5.7	0.0	2.6	0.6	14.4	14.8	1.6	3.5
Hydraulic	61.5	92.1	3.2	22.3	97.3	24.2	98.8	21.1	9.4	0.0	96.0
Wind	2.0	0.3	3.6	3.2	2.4	2.8	0.6	4.6	7.4	98.3	0.5
Other (excl. fuels)	0.5	4.5	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Share of generation from fuel	36.0	3.1	93.2	74.5	0.3	72.7	0.6	74.3	83.1	1.6	3.5
B. Generation by ownership structure											
Private	25.7	7.0	82.9	12.1	4.5	41.2	6.6	20.1	100.0	79.3	4.1
Public	74.3	93.0	17.1	87.9	95.9	58.8	93.4	79.9	0.0	20.7	95.9

1. Including the Territories.

Source: Statistics Canada, Tables 127-006 and 127-009.

Table 1.2. **Provincial electricity market characteristics**

	British Columbia	Alberta	Saskatchewan	Manitoba	Ontario
General description	Regulated	Competitive	Regulated	Regulated	Hybrid regulation and competition model
Market design	Centrally managed model with bilateral contracts	Mandatory supply to wholesale market (power pool)	Centrally managed model with bilateral contracts	Centrally managed model with bilateral contracts	Wholesale market (power pool) with bilateral contracts, power purchase agreements and regulated tariffs
Main generation utility	BC Hydro	N/A	SaskPower	Manitoba Hydro	Hydro One
Provincially owned	Yes	No	Yes	Yes	Yes
Real time wholesale market	No	Yes	No	No	Yes
Transmission	BC Hydro	ATCO Electric, AltaLink Management, EPCOR Utilities, ENMAX Power	SaskPower	Manitoba Hydro	Hydro One, Great Lakes Power, Canadian Niagara Power, Five Nations Energy and Cat Lake Power Utility
Distribution	BC Hydro, FortisBC, and some municipal utilities	ENMAX, EPCOR, ATCO, FortisAlberta	SaskPower	Manitoba Hydro	More than 60
Retail prices	Regulated cost-of-service basis, including a stepped rate for residential consumers to encourage conservation	Market based with regulated rate option available for residential, farm, irrigation and small commercial users (<250MWH/year)	Regulated cost-of-service basis	Regulated cost-of-service basis	Competitive for commercial and industrial customers; more regulated for residential and small businesses which choose between an electricity retailer and regulated default prices (with time-of-use rates)

Table 1.2. **Provincial electricity market characteristics** *(cont.)*

	Quebec	New Brunswick	Nova Scotia	PEI	Newfoundland
General description	Regulated	Regulated	Regulated	Regulated	Regulated
Market design	Centrally managed model with bilateral contracts	Physical bilateral market with a dispatch market	Centrally managed model with bilateral contracts	Centrally managed model with bilateral contracts	Centrally managed model with bilateral contracts
Main generation utility	Hydro Québec	NB Power	NS Power	Maritime Electric	NL Hydro (Nalcor)
Provincially owned	Yes	Yes	No	No	Yes
Real time wholesale market	No	No	No	No	No
Transmission	HQ TransÉnergie	NB Power Transmission	NS Power	Maritime Electric	NL Hydro and Newfoundland Power
Distribution	HQ Distribution + 9 municipal distribution companies	NB Power Distribution and Customer Service	NS Power + six municipal utilities	Maritime Electric	NL Hydro and Newfoundland Power
Retail prices	Regulated cost-of-service basis	Regulated cost-of-service basis	Regulated cost-of-service basis	Regulated cost-of-service basis	Regulated cost-of-service basis

Source: London Economics International (2014), *Power Prices in Context: Comparing Alberta Delivered Electricity Prices to Other Canadian Provinces on a Level Playing Field*, June; P-O. Pineau (2013), "Fragmented Markets: Canadian Electricity Sectors' Underperformance", in *Evolution of Global Electricity Markets*, Elsevier, London; Statistics Canada.

Only one province, Alberta, has competitive wholesale and retail electricity markets. Attempts to introduce more competition in other provinces, such as in Ontario and New Brunswick, have been partly or entirely reversed. Some provinces have undergone some pro-competitive restructuring to meet the US Federal Energy Regulatory Commission's (FERC) requirements to trade electricity with the United States, including establishing open-access transmission tariffs (OATTs) and utility unbundling driven by FERC's reciprocity requirements. OATTs allow third parties to transmit power to and from the United States over a province's transmission systems, but not transmission of power from one province to another.

Encouraging competition in generation and strengthening market pricing signals by establishing competitive wholesale markets could enhance efficiency (IEA, 2007), particularly for investment decisions. Investment efficiency could be further reinforced by nodal pricing (locational marginal cost pricing) for transmission, which could help identify the most efficient location and size for generation capacity (OECD, 2005). The impact of restructuring generation on retail prices is unclear; however, as past US reforms have shown that electricity prices become more sensitive to natural gas prices as natural gas-fired plants tend to become the marginal producer (Borenstein and Bushnell, 2015). Therefore, the impact of restructuring on end-user prices would depend on the timing, particularly regarding natural gas price cycles, along with the composition of existing generation and the extent of regulatory provisions facing incumbents.

Such liberalisation could take the form of "energy-only markets", where wholesale prices are based solely on marginal cost, as in Alberta, or the incorporation of additional capacity charges (through a capacity market), similar to PJM Interconnection in the United States (PJM is a regional transmission organisation, which coordinates the movement of wholesale electricity in most North-Eastern states) and as is currently being considered by Ontario's Independent Electricity System Operator. In such a system, generators would be paid for making capacity available to produce electricity on top of payments for actual production at a given price during a given hour. Such capacity markets have been motivated by concerns that energy-only markets may result in low investment levels and small reserve margins, which may hinder system reliability. On the other hand,

capacity charges may also drive up energy costs for consumers relative to energy-only markets. Measures to introduce more competition in generation should be combined with efforts to increase integration between provincial and international markets (discussed below), which could make the system more resilient to power shortages. A public backlash from shortages and high price volatility in Ontario in the early 2000s, for instance, significantly reduced support for electricity reforms. Provinces should review the current structure of the electricity sector and devise a strategy to increase wholesale competition, including measures to make the system more resilient to supply shortages.

Where generation has been deregulated and competitive wholesale markets established, ensuring protection against anti-competitive practices and, more broadly, confidence and trust that regulatory decisions are objective, impartial and consistent through an independent regulatory body remains essential (OECD, 2014c; OECD, 2015a). Even in competitive and non-concentrated generation markets, the existence of inelastic electricity demand and supply during peak periods gives rise to market power, as some electricity producers may choose to restrict capacity to drive up prices, as recently occurred in Alberta (Henton, 2015). Many provinces have well established regulatory bodies, in part to ensure non-discriminatory access to transmission and distribution facilities. Where deregulation has occurred and competitive generation established, such bodies will also need to continue to monitor the provision of generation capacity to guard against anti-competitive practices.

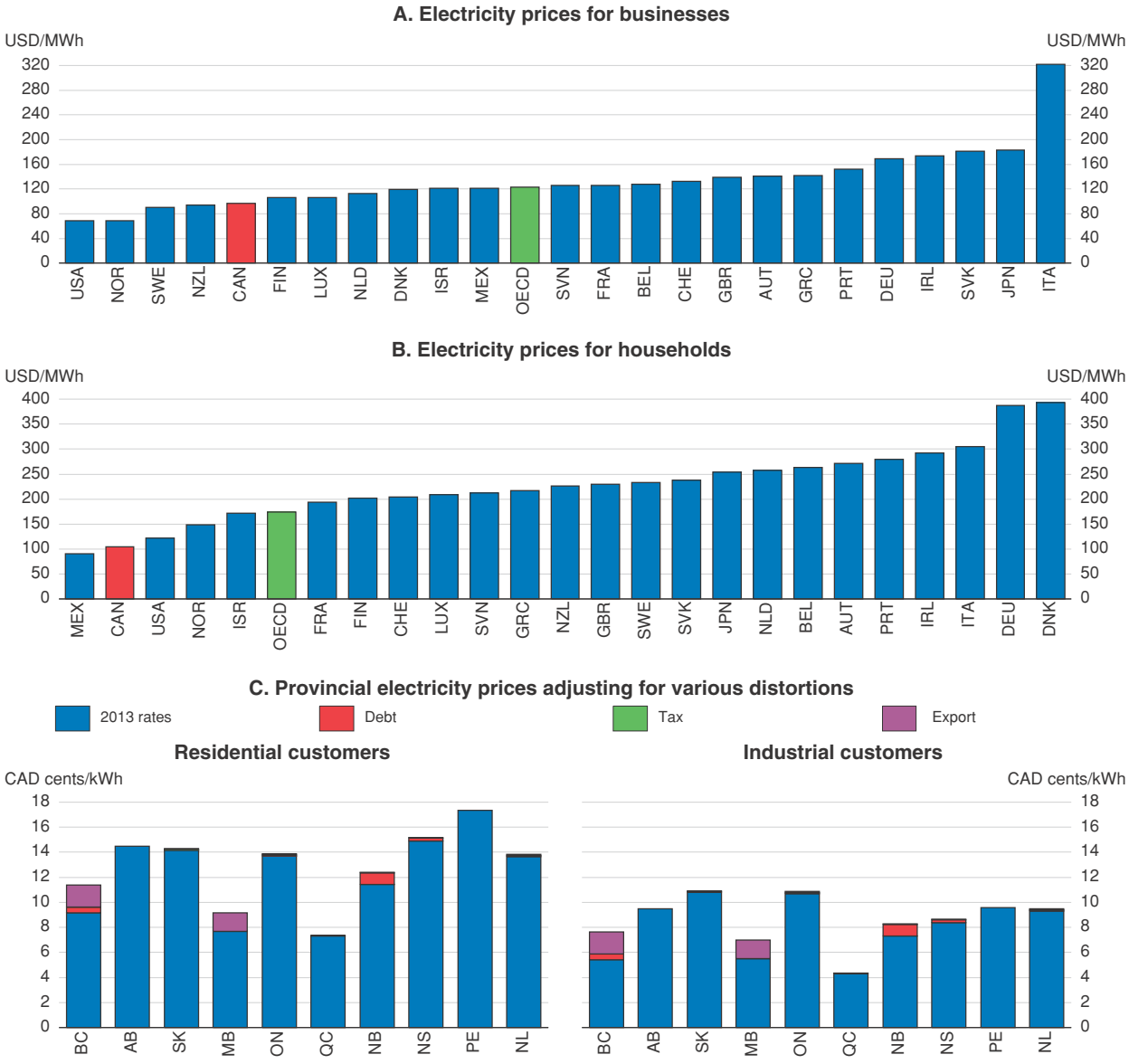
Competition in the distribution segment (i.e. at the retail level) would enable consumers to pick their electricity suppliers, which could incentivise the development of offers tailored to consumers' needs (e.g. lower off-peak electricity prices), though it could also lead to the development of opaque contracts and thus lower consumer welfare, unless offering a common basic contract is required. Retail competition is currently limited in Canada, with retail electricity prices generally regulated on a cost-of-service basis (average cost pricing). However, Alberta, and, to a lesser extent, Ontario have liberalised markets. Nevertheless, even in these markets the availability of regulated retail rates which may deter entry and high search costs may be limiting effective competition. In Alberta, for instance, despite the freedom to choose a retail provider, the majority of households, farms and small commercial consumers use the default regulated rate option (which is available for those using less than 250MWH per year) from their local distributor (Kemp, 2014). More intensive educational efforts, increased transparency of price comparisons, a phasing out of the regulated rate option (which has been extended until 2018) and the establishment of a Provider of Last Resort as in Texas, as recommended by the Retail Market Review Committee in Alberta in 2012, could enhance retail competition.

Increased retail competition would probably benefit large more than small consumers, as the potential for cost savings would rise with increased usage. Past North American deregulation has shown that commercial and industrial users tend to make up a greater share of new entrants' clientele, while a relatively small share is accounted for by residential customers, who tend to choose regulated fixed prices (Brennan, 2008). In Alberta, for instance, 96% of large, and 71% of small, commercial and industrial consumers received competitive electric service (i.e. not on the regulated rate option) from non-incumbent providers in 2014, relative to 43% for residential users (DEFG, 2015). This said, households would benefit indirectly through lower costs for goods and services provided by industrial and commercial firms who, in a competitive marketplace, would pass on their electricity cost savings.

Electricity prices

Electricity prices for households and businesses are low in Canada compared with other OECD countries (Figure 1.4, Panel A). However, they vary considerably throughout the country primarily reflecting resource endowments, with hydro-abundant provinces exhibiting the lowest rates; however, provincial policies also play a role (Panels B and C). In hydro-dominant provinces implicit provincial guarantees reduce borrowing

Figure 1.4. **Electricity prices**



Source: IEA, Energy Prices and Taxes database; A.J. Goulding and M. Atanasov (2014), *Power Prices in Context: Comparing Alberta Delivered Electricity Prices to other Canadian Provinces on a Level Playing Field*, London Economics International.

How to read this figure: Panel C presents an estimate of what provincial prices would have been in 2013 if various differences between provincial energy markets were removed. The blue bars show actual electricity rates, while the additional variables show the marginal contribution of removing these effects or making policies more similar to Alberta for comparison purposes.

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costs, while suppressed equity returns at provincially owned utilities, export revenues and heritage contracts may also hold prices down. For instance, Manitoba Hydro is prohibited from charging a rate of return on its cost of service (only operating and capital costs can be charged), and it rarely pays dividends (Pineau, 2013), cutting user prices. Yet, there is no sign of underinvestment because sub-market returns are not sanctioned by the provincial owner (as it would be in a private company), since it is deliberate.

Reduced risk exposure and less informative price signals that result from lower borrowing costs, taxes and implicit subsidies for publically owned monopolies may result in a misallocation of resources away from other public programmes and infrastructure where returns may be greater. In addition, taxpayers bear the risk of over-investment in generation capacity, which may be reinforced by fixed-price contracts, whereas in a private firm such risks would be borne by shareholders.

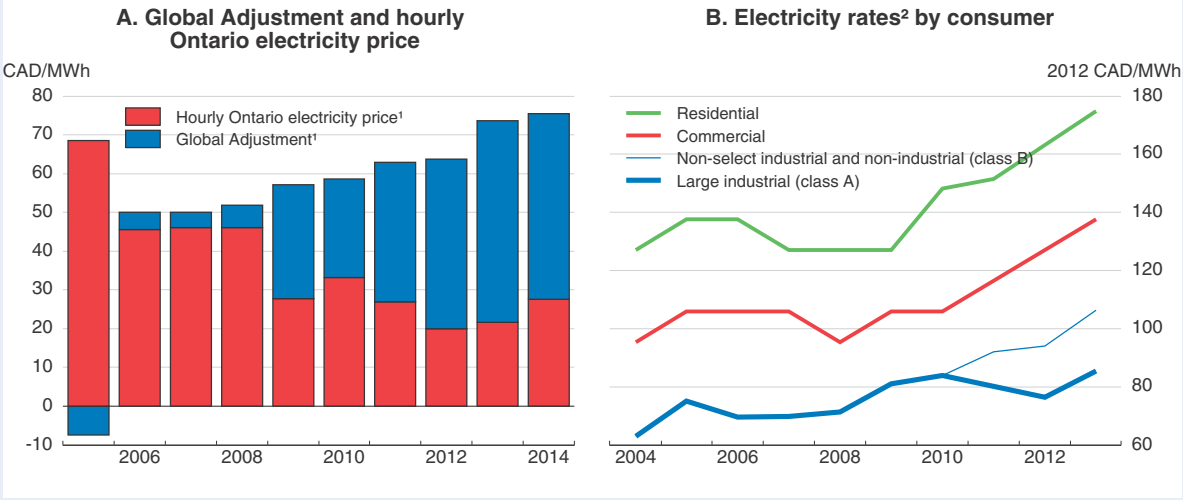
Some efforts have been made to incorporate price incentives to reduce peak-period consumption in some provinces, thereby attempting to limit the amount of investment needed to meet peak demand. These demand-side policies, such as time-varying prices, could also help to increase the price elasticity of electricity demand, by encouraging consumers to shift consumption to periods of lower demand rather than paying a time-averaged price, reducing the size of price spikes and thereby reducing generators' market power (OECD, 2005). Ontario has invested in smart meters to allow time-of-day pricing for households, farms and small businesses that use less than 250MWH per year and has implemented the Industrial Conservation Initiative (High-5 programme) to encourage large industrial consumers to reduce peak-period consumption. However, this programme results in distortions from cross-subsidisation of electricity costs (Box 1.1). To level the playing field, the Ontario government should move to make the regulated portion of electricity prices ("Global Adjustment") a function of energy consumption for all consumers, as is the case for small industrials, commercial firms and households (Class B; see Box 1.1), and continue to expand the use of demand-management tools more broadly. Additionally, weighting energy consumption in peak periods more heavily than in off-peak periods when distributing the regulated portion between customers would be equitable, as those that consume electricity disproportionately in peak periods contribute more to the need to invest in costly peaking capacity.

Box 1.1. **Electricity prices in Ontario and the Global Adjustment**

Electricity prices in Ontario have been moving further away from competitive market signals, reflecting price guarantees to generators through contracts with the Ontario Energy Board (OEB) and regulated rates for government-owned nuclear and hydro facilities. Ninety-one per cent of Ontario's energy production is under contract to the OEB (contracts can be as long as 20 years) or have fixed, regulated prices (Goulding, 2013). The wholesale spot price (Hourly Ontario Electricity Price) has tended to fall since the mid-2000s, and differences between the higher guaranteed prices for generators and the low wholesale market-clearing rates have been charged to consumers through the so-called Global Adjustment (GA). The GA now makes up the majority of average retail electricity prices for consumers (Figure 1.5).

Box 1.1. **Electricity prices in Ontario and the Global Adjustment** *(cont.)*

Figure 1.5. **Electricity prices in Ontario**



1. Deflated by the Ontario consumer price index.
2. Inflation-adjusted at 2012 prices, Ontario Clean Energy Benefit (OCEB) power rates.

Source: Independent Electricity System Operator (IESO); R. McKitrick and T. Adams (2014), *What Goes Up – Ontario's Soaring Electricity Prices and How to Get Them Down*, Fraser Institute.

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McKitrick and Adams (2014) show this increase in the GA may reflect the move towards renewable sources of electricity. In particular, Ontario's Feed-in-Tariff programme provides implicit subsidies to renewable energy producers, probably increasing the GA, and these costs are projected to rise further in the future (Goulding, 2013; OEB, 2015). Transitioning towards market-based prices or potentially establishing a capacity market could allow the system to be more dynamic, particularly in the case of technological innovation, provide a more economical energy mix and incorporate a market-based response to the government's environmental goals, given Ontario's imminent establishment of a cap-and-trade scheme for greenhouse gases.

Potential distortions have also been introduced based on how the GA is distributed among users, particularly for smaller industrials and other businesses. Since the Industrial Conservation Initiative (High-5 programme) began in 2011, customers have been classified into two categories based on peak electricity consumption and industry to calculate their GA charge. GA costs for large industrials (Class A, which since 2014 has been those using more than 3MW) are based on the share of electricity consumption during the five peak load hours by all Class A customers. This portion is then split between individual Class A consumers based on their share of usage during these peak demand periods in the year. The remaining portion of the GA is allocated to other customers, including small industrials, commercial businesses and households (Class B, <3MW) based on their share of usage as a proportion of total electricity consumption during the billing period.

The rationale for these differing rates was to encourage large industrial customers to reduce peak demand, thereby lowering required capacity. Even though there is some evidence that large industrials are able to anticipate peak periods (Sen, 2015), they may do so rather imprecisely, as the top five peak periods during the year are not known in advance. Additionally, this policy has resulted in cross-subsidisation of large industrials' electricity costs by small industrials and other consumers (McKitrick and Adams, 2014; Panel B). It is estimated that the High-5 programme will be responsible for up to one-quarter of the expected increase in electricity costs for households planned for 2016 (Sen, 2015).

Market integration

Further developing interconnections between provinces and with the United States could improve competition, enhance system reliability – thereby facilitating electricity market deregulation – and smooth the integration of intermittent renewable generation. The resulting increase in the geographic scope of markets could also help to reduce the market power of generators (OECD, 2005) and price volatility, which eroded public support for a more competitive market structure in the wake of Ontario's 2002 reforms. Improved integration with other provinces and the United States could help to limit such volatility as the electricity base would be larger, rendering the system more resilient to supply shortages or sudden surges in demand.

Enhanced interconnectivity could also improve system efficiency resulting from the varying electricity mixes across the country. Hydroelectric systems depend heavily on water levels, making them sensitive to variations in rainfall, while fuel-based generation systems (natural gas, coal or uranium) depend on costly fuel inputs. With low interprovincial integration, electricity generation in both these cases may exceed provincial requirements in order to ensure adequate supply. This excess may be reduced if more alternatives were available through interconnections, improving the efficiency of infrastructure use. Further integration could also make greater use of hydroelectric storage capability, which would allow fuel-based (including nuclear) generation to be imported off peak when it is in surplus (and reservoirs are rebuilt) and save hydroelectric energy for peak times.

Strengthening electricity integration could also facilitate a move towards more renewable yet intermittent resources, such as wind and solar electricity. Averaging the variations in generation over larger geographical areas, through increased interconnectivity, could increase the viability of such sources. Efforts to increase integration have been the strongest in Atlantic Canada, where isolation and concentrations of intermittent supply (such as wind power in Prince Edward Island) have reinforced their payoff. The federal government has provided support for the Atlantic Energy Gateway (AEG) initiative, a federal-provincial-utilities collaboration aimed at enhancing regional cooperation. AEG modelling and research studies determined that improved regional collaboration (including interconnections and infrastructure planning) could yield significant opportunities for operating cost efficiencies through joint infrastructure planning and regional balancing of supply and demand, while achieving greater diversity in clean and renewable energy supplies, enhanced rate stability and reduced greenhouse gas emissions. At the same time, the economic rationale for constructing an east-west electricity grid in Canada may not be clear. Traditionally, electricity has flowed north-south because distances, and the costs of transporting electricity, between Canadian supply and U.S. demand can be shorter than the east-west gap between one province and another. Because of the costs of transporting electricity over long unpopulated areas, the economics of a national grid may not necessarily be good. However, improving the trade opportunities between adjacent provinces, where incremental opportunities for mutual gain exist, may be beneficial.

The federal government could continue to support increased integration of provincial electricity markets by expanding initiatives like the Atlantic Energy Gateway to other regions and promote the development of further interconnections, including with the United States. Provinces should work together to reduce barriers to trade in electricity

and implement new interconnections and more competitive market structures in their regions. This could include establishing a chapter on energy (including electricity) in the Agreement on Internal Trade (AIT), the main agreement to reduce interprovincial barriers to trade through the Council of the Federation (see below). Other avenues for collaboration include the annual Energy and Mines Ministers Conference and its Federal-Provincial-Territorial Electricity Working Group. Moreover, promoting collaboration between the provincial regulators, as in the Council of European Energy Regulators, could allow exchanges of best practices and encourage the development of a single domestic energy market. These efforts will create a more conducive environment for investment and cooperation; however, the federal government has in some cases stepped in to subsidise investments, which may weaken market discipline. In particular, the federal government has also supported some major generation and transmission projects through debt guarantees, thereby reducing borrowing costs. For instance, in December 2013 it provided a combined guarantee for CAD 5 billion in debt for the Muskrat Falls generation project, Labrador Transmission Assets and Labrador-Island Transmission Link, and, in March 2014, for CAD 1.36 billion for the Maritime Link. These guarantees are estimated to lower interest costs by CAD 1 billion and CAD 325 million in interest, respectively, over the projects' lifetimes (Government of Newfoundland and Labrador, 2013; Emera, 2014).

In response to electricity costs, supply considerations and changing energy mixes, some provinces are exploring options to increase provincial interconnections or use existing ones more regularly. For example, Quebec and Ontario signed a memorandum of understanding in late 2014 to establish a 500 MW capacity exchange arrangement (using existing interconnections) that supports the reliability of each other's electricity systems by taking advantage of their complementary seasonal peaks in electricity resources and needs. Several additional cross-border interconnections are also planned or under construction between Canada and the United States and in Atlantic Canada.

Integration could aid in reducing electricity prices in fuel-dominant provinces. However, in provinces with substantial hydro-electricity (British Columbia, Quebec, Newfoundland and Manitoba) power is generally sold below opportunity cost (based on potential export revenues) (see Figure 1.4 above; Pineau, 2008). This has provided an implicit subsidy for businesses and households, which tends to be larger for higher-income households as they tend to consume more electricity (Figure 1.6, Panel A; Pineau 2008). Overall, below-market rates have boosted energy consumption (Panel B) and resulted in low rates of return on investments. Part of the increase in per capita consumption reflects a switch to electricity for heating in low-cost provinces. Increased integration would probably raise electricity prices in these provinces and could be met with resistance, particularly from households and energy-intensive industries (e.g. mining). In a more competitive and integrated market, higher electricity revenues could be used to cut the most distortionary taxes, lower corporate taxes more broadly, invest in infrastructure or social programmes where the returns may be greater, or compensate those on low incomes and fight poverty. However, higher prices may lead some energy-intensive industries to become less competitive, given that electricity prices are lower in some US states. As external demand for power from hydro-producing provinces may rise, authorities need to ensure that future projects internalise environmental consequences and that Canadian Indigenous Peoples communities are engaged in the planning process to minimise damage to traditional hunting and fishing grounds.

Figure 1.6. **Residential electricity sales**

1. The size of the bubbles represents the total volume of residential electricity sales in the province.

Source: Statistics Canada, Tables 127-0008 and 051-0001, *www.statcan.gc.ca/pub/11-526-s/2013002/t010-eng.htm*; A.J. Goulding and M. Atanasov (2014), *Power Prices in Context: Comparing Alberta Delivered Electricity Prices to other Canadian Provinces on a Level Playing Field*, London Economics International; and OECD calculations.

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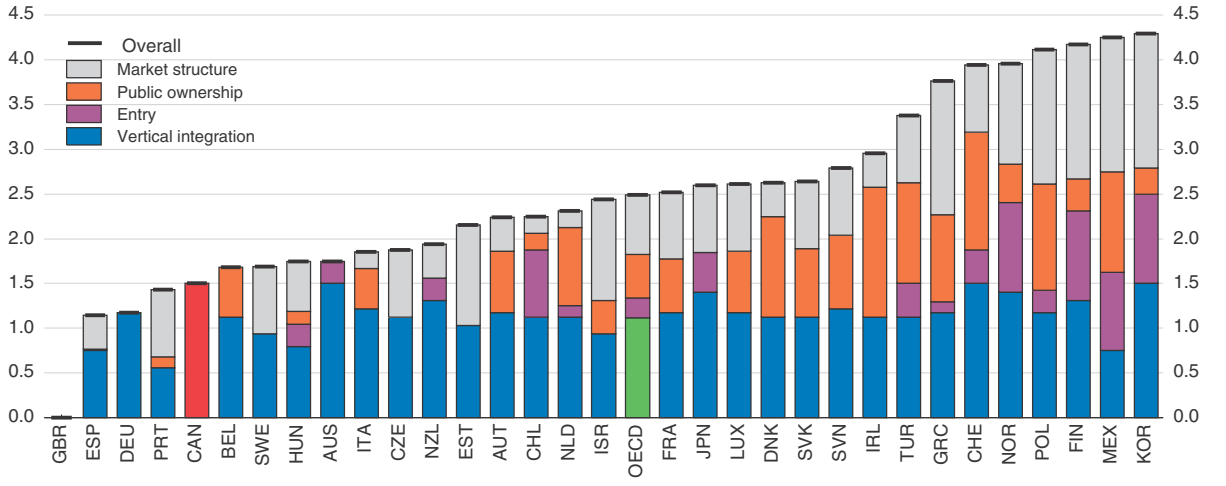
Natural gas

North American natural gas markets are heavily inter-connected. Provinces have legal jurisdiction over most upstream and downstream activities, while the National Energy Board (NEB) is responsible for the approval and regulation of natural gas pipelines in Canada that cross provincial or international borders. The federal government is also involved in environmental assessments and permitting of major developments. Regulation in the natural gas sector is light by OECD standards (Figure 1.7). Natural gas prices are comparatively low in Canada (Figure 1.8), reflecting ample domestic supply and the availability of cheap imports from the United States, particularly in Eastern Canada. But variation across provinces and even within the larger provinces is substantial.

Figure 1.7. **Regulations in the natural gas sector are low**

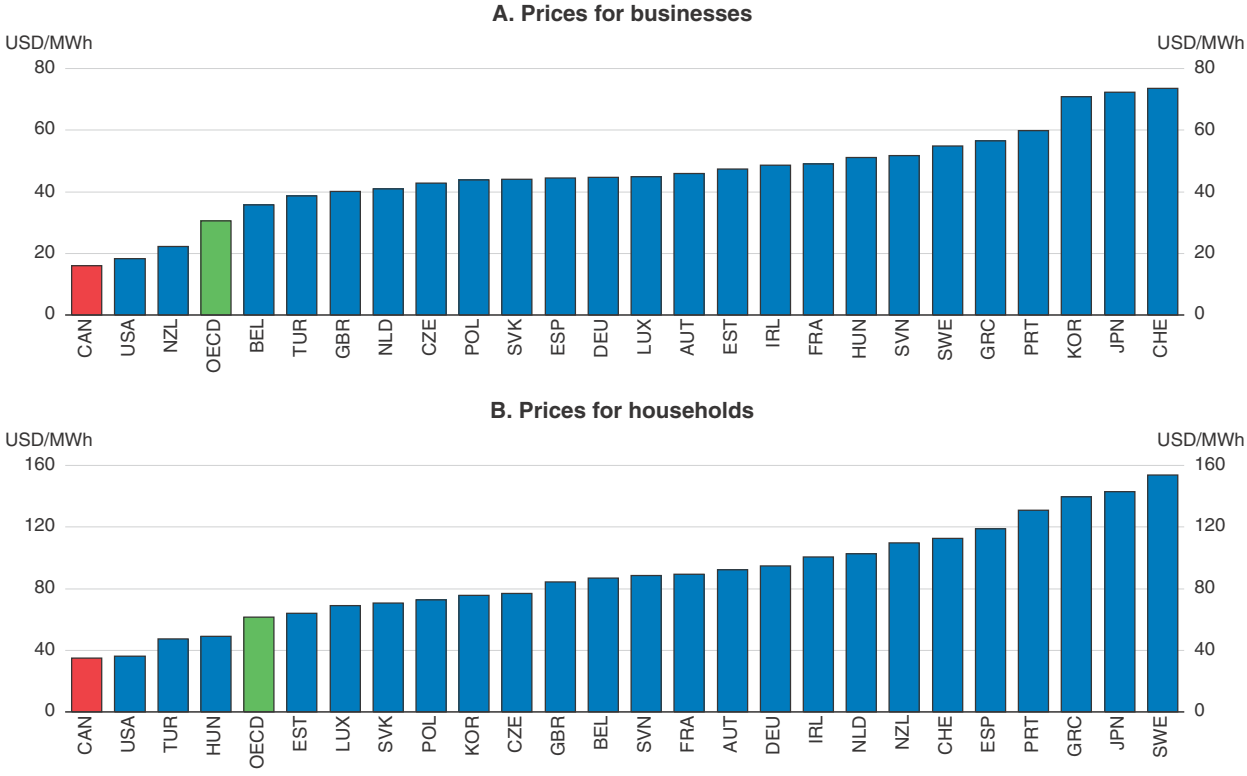
Index scale from 0 (least restrictive) to 6 (most restrictive), 2013



Source: OECD, Product Market Regulation database.

StatLink http://dx.doi.org/10.1787/888933371087

Figure 1.8. **Natural gas prices[1] are low in Canada, 2014**



1. Including taxes.

Source: IEA, Energy Prices and Taxes database.

StatLink http://dx.doi.org/10.1787/888933371092

The Canadian natural gas market was liberalised in the 1980s, led by price deregulation in 1985. The upstream industry is highly competitive, with close to 700 operating producers (IEA, 2016). Wholesale prices are determined on the open market, with purchases primarily on a spot or short-term basis. Transmission and distribution assets are largely privately owned, and tolls are regulated (by the NEB for transmission and provincial utility boards for distribution). In particular, gas transmission pipelines are required to provide non-discriminatory open access to shippers, and tolls are regulated under the NEB Act to cover pipeline fixed costs and variable operating costs. Distribution rates and returns on equity are provincially regulated. Retail prices are regulated by the provinces on a cost-plus basis, which includes the commodity, pipeline transmission and distribution costs, a mark-up and taxes. Provincial regulators also ensure that gas purchases are done on a prudent basis. As highlighted in the 2004 *Survey* (OECD, 2004), lessons from the deregulation of the natural gas sector could be informative for electricity market reforms, particularly in the development of wholesale competition and market access.

All Canadian natural gas exports are currently destined for the United States, and following rising US unconventional gas production, exports, and hence production, have weakened. After peaking in 2007, exports have declined by nearly a third, with volumes in 2014 comparable to those in the mid-1990s. A key challenge for the sector will be to develop infrastructure to diversify export markets, including building liquefied natural gas (LNG) terminals and associated pipelines. Currently, fully 25 LNG liquefaction projects are awaiting approval and final investment decisions, with three projects moving ahead in 2015 (IEA, 2016). The first LNG exports could start in 2019, but opposition on environmental grounds is heavy, not only for the impact of the associated pipelines but because of the GHGs that would be produced by exploiting the gas. In its 2015 budget, the federal government took initiatives to encourage private infrastructure investment, including extending natural gas export licences (issued by the NEB) from 25 to 40 years to increase regulatory certainty, and implementing an accelerated capital cost allowance for liquefaction facilities. On the domestic front, major projects are underway to increase the share of natural gas in electricity production, particularly in provinces with a large share of coal-fired generation, which should support overall demand and reduce carbon emissions.

Recommendations to improve competition in the electricity sector

- Work with the provinces to increase provincial electricity market integration, including developing further east-west interconnections and planning infrastructure regionally, when there is an economic case to do so. Similarly, work with the US government to further increase international trade in electricity.
- Include an energy chapter (including electricity) in the revised Agreement on Internal Trade.
- Extend initiatives to other regions like the Atlantic Energy Gateway that bring together governments and producers.
- Work with the provinces to liberalise the generation and distribution segments. Promote the establishment or strengthening of wholesale and retail competition by, for example, establishing real time wholesale markets as in Alberta and phasing out regulated rate offers in established competitive markets for residential and small electricity users.
- Increase educational efforts in markets with retail competition to encourage consumer switching.

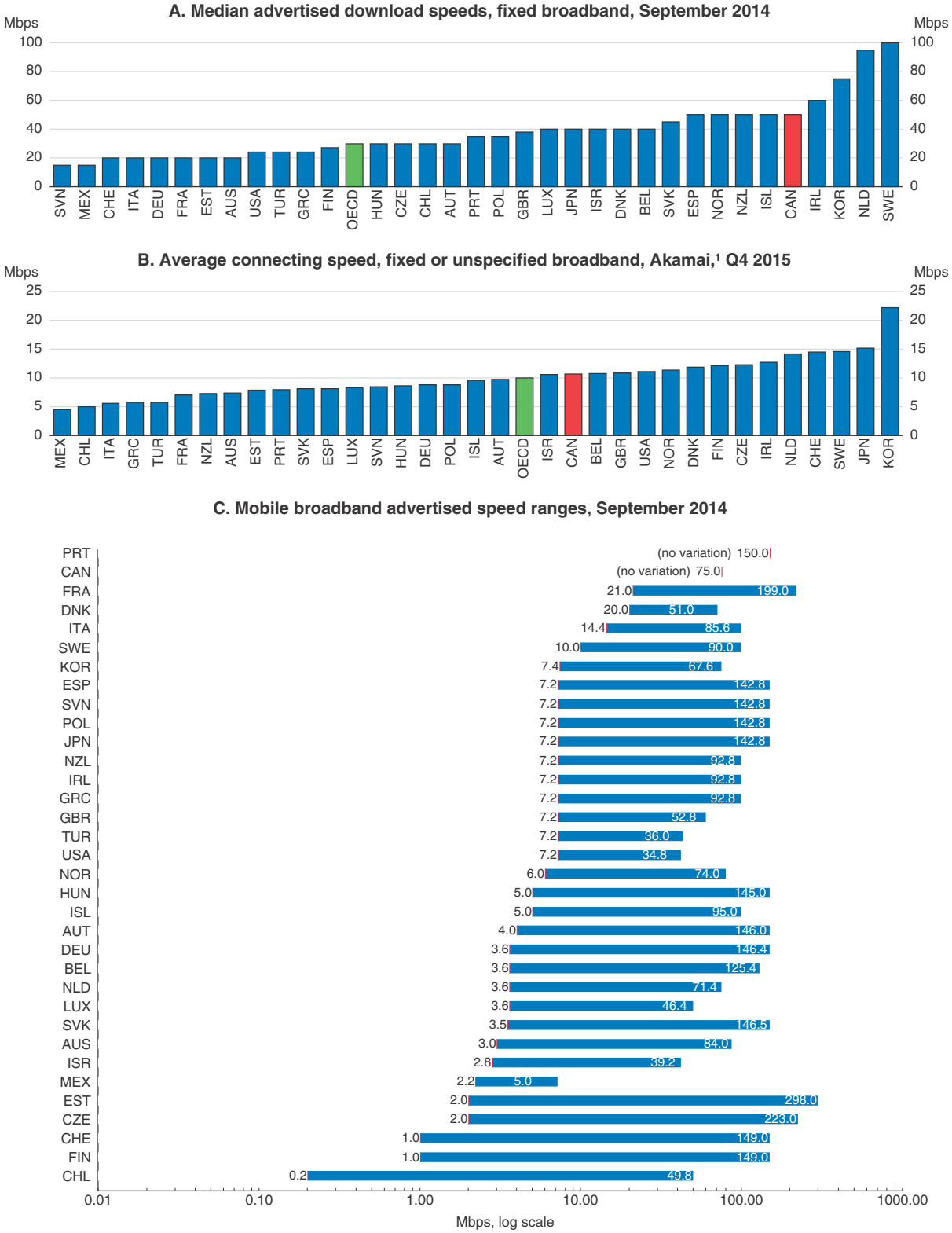
Telecommunications and broadcasting

Telecommunication services and broadcasting fall under federal government responsibility. Regulations in the telecommunication sector are guided by the Telecommunications Act and in broadcasting by the Broadcasting Act. The Canadian Radio-Television and Telecommunications Commission (CRTC) is an independent regulator responsible for interpreting these Acts, though their findings are subject to federal government review and approval. As in other OECD countries, convergence between telecommunication services and broadcasting is increasingly blurring the lines between these two sectors. Although much of the supply of telecommunication services in Canada has been liberalised, the sector remains concentrated, with the five largest incumbent providers accounting for more than 84% of total telecommunication revenues in 2014 (CRTC, 2015). Approximately 94% of these revenues were from forborne services (i.e. from services that the CRTC has determined are sufficiently competitive that tariff filings are no longer required) (CRTC, 2015). The sector is also characterised by a high level of vertical integration, with large telecommunication players also present in broadcasting.

Canadian telecommunication services are of high quality: for broadband this is borne out by indicators such as above-average download speeds (Figure 1.9). However, telecommunication services are also relatively expensive. Mobile subscription numbers are fairly low, while fixed broadband adoption rates are above the OECD average. Prices for mobile baskets (mobile calls and broadband), fixed broadband and bundles that include television, fixed broadband and fixed calls (and more expansive bundles that also include mobile services) are comparatively high in Canada (Figure 1.10), especially for fixed broadband. This is consistent with the latest annual CRTC price-comparison report prepared by Wall Communications Inc. (2015), which conducts price comparisons for Canada relative to the G7 countries plus Australia. This report found that Canadian prices for wireline, mobile wireless, high-speed broadband, mobile Internet and bundled services are at the high end. Based on these findings, it is possible to infer that these higher prices may have reduced demand for mobile and wireless broadband subscriptions, although fixed broadband subscriptions stand above OECD averages (Figure 1.11). The fewer subscriptions for mobile and wireless may also reflect the large geographical distances, given thinner rural coverage.

The government's focus on increasing competition in mobile telephony in recent years has largely concentrated on easing entry barriers to facilitate a fourth national mobile carrier and on lowering consumer switching costs. Measures to increase consumer mobility (thereby boosting demand elasticities and hence cutting prices) through the 2013 Wireless Code included reducing contract periods to two years (previously most had three-year terms), restricting the practice of locking phones to prevent their use with competing service offerings and limiting early exit charges. Efforts to encourage a fourth national carrier have included: implementing spectrum caps; establishing new roaming and tower-sharing policies; easing foreign ownership restrictions for small entrants (discussed below); limiting the transfer of mobile spectrum to incumbents; and regulating wholesale roaming rates charged by the three large providers. In addition, in June 2015, as a condition for the transfer of spectrum from Mobilicity, in receivership, and unused spectrum owned by Shaw Cable Systems to Rogers, the government required Rogers to transfer 25 spectrum licences free of charge to Wind Mobile. Wind was subsequently acquired by Shaw after the Competition Bureau gave regulatory approval (potentially Canada's fourth national carrier).

Figure 1.9. **Telecommunications quality indicators**



1. This measure excludes mobile broadband users from its average connection speed metrics.

Source: OECD (2015), *OECD Digital Economy Outlook 2015*, with updates.

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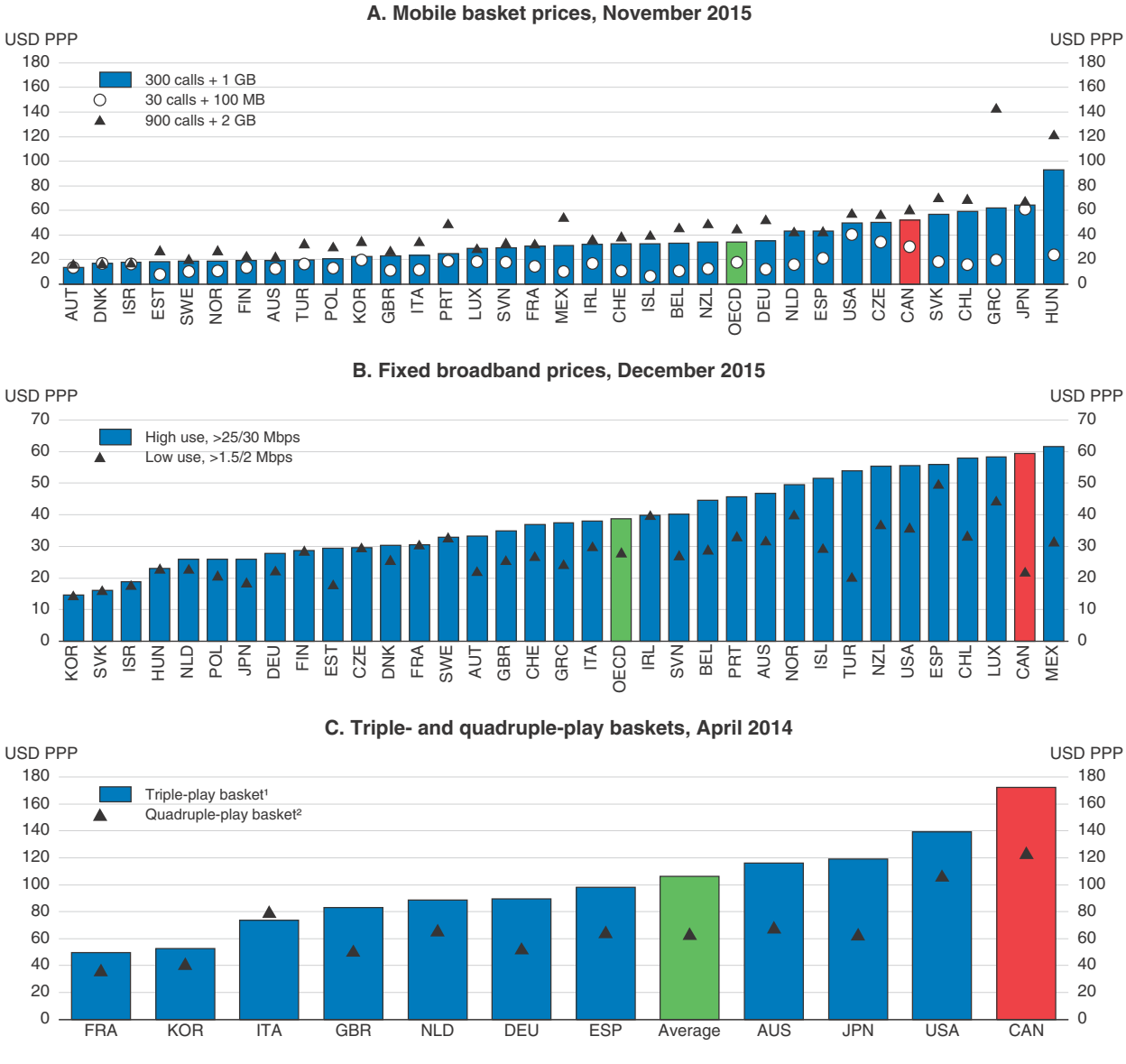
Figure 1.10. **Telecommunications prices**



1. 30 Mbps download speed and 200 GB, unlimited fixed line calls, premium pay-television including sports and movies.
2. At least 10 Mbps broadband download speed and 25 GB capacity, fixed line connection, basic pay-television and 30 call mobile basket.

Source: OECD (2015), *OECD Digital Economy Outlook 2015*, with updates.

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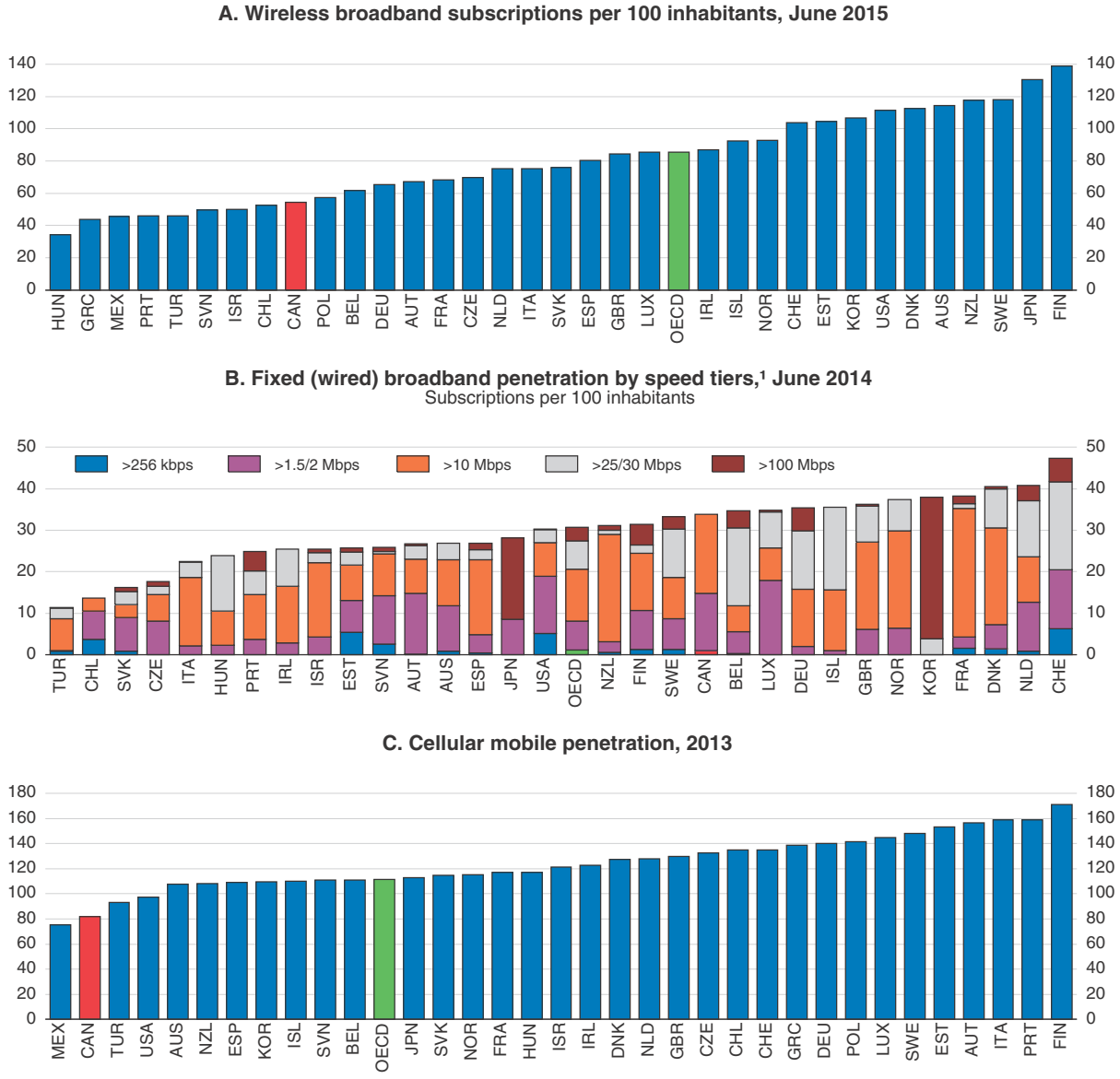
In all OECD countries there are at least three mobile network operators (MNOs) that compete nationally, with some countries having four or five facilities-based networks nationally or in the same region. Countries with a larger number of MNOs tend to have more competitive and innovative service offerings (OECD, 2014d). Moreover, new entrant prices are on average 26 to 50% less than average incumbent prices in Canada, depending on the relevant service category (Wall Communications Inc., 2015). Elixmann et al. (2015) found no linkage between consolidation or higher concentration in mobile markets and investment for eight European countries, Australia, Japan, Korea and the United States.

Figure 1.11. **Telecommunications subscriptions**



1. For Japan, data are OECD estimates with the tiers lower than 100 Mbps unseparated. They may also include an auxiliary portion of the top tier. For Korea, 10% refers to below 50 Mbps and 90% refers to above 50 Mbps.

Source: OECD (2015), *OECD Digital Economy Outlook 2015*, with updates.

StatLink http://dx.doi.org/10.1787/888933371129

Their study suggests that investment tends to follow long-term investment cycles that appear to be largely unrelated to developments in market structure in the countries assessed. Despite this, however, it will be important to monitor the impact of these efforts to encourage a fourth MNO on investment and the quality of mobile networks.

Broadband internet access is considered an important driver of productivity and competitiveness (Nordås and Rouzet, 2015). Despite high prices, Canadian per capita internet subscriptions are comparatively high. Canada has experienced growth in fibre connections in recent years, as regional incumbent telephone companies have shifted

from investing in fibre-to-the-node/VDSL to fibre-to-the-home. The adoption rate of fibre access remains low compared with most OECD countries (OECD, 2015b). This may reflect the policy framework and extent of competition; however, it may also reflect long geographical distances and lower population densities.

While there is no one-size-fits-all regulatory framework that best encourages competition in broadband (OECD, 2011), Canada has focused on facilities-based competition among incumbent telecommunication service providers and cable companies and requires wholesale network access for internet service providers (ISPs) on a regulated long-run average incremental cost basis to encourage retail competition. In addition, the CRTC has implemented measures to ensure that non-price access measures are not used to discriminate against retail competitors, including requiring that secondary ISPs are offered the same high speeds as their own ISPs and ensuring congestion management practices do not throttle secondary ISPs' traffic. In 2015, guaranteed access for secondary ISPs was extended to fibre optic cable to the premises and ultra-high-speed cable networks. However, it no longer applies to incumbents' transport lines between areas, only to local lines. Therefore, secondary ISPs are now required to construct or negotiate access to incumbents' or another company's transmission lines. Overall, with wholesale rates that provide a reasonable rate of return, the incumbent telecommunication carriers are likely to continue to invest in fibre access in order to compete with cable networks.

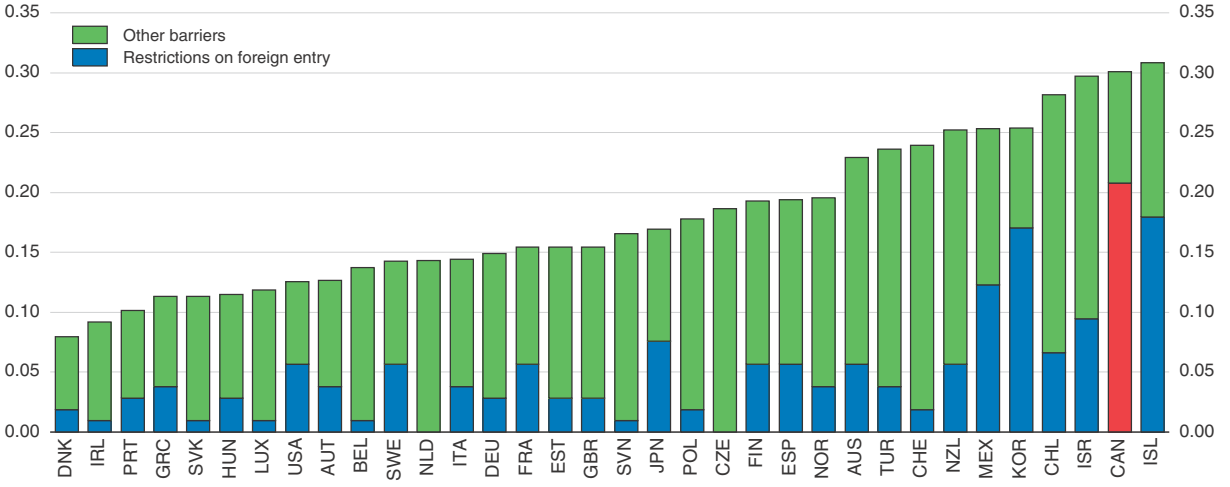
With the digitalisation of media through the Internet and mobile devices, broadcasting regulations are becoming increasingly outdated, and the distinction between telecommunication providers, regulated under the Telecommunications Act, and broadcasting distribution undertakings (BDUs), primarily cable and satellite providers, regulated by the Broadcasting Act, are becoming blurred. Following a 1999 assessment, the CRTC felt that there was a significant amount of Canadian new media content (including video games, e-commerce and other Internet-related services) and chose to exempt them from broadcasting regulation to encourage innovation, a decision that was upheld in 2009. While the CRTC eased content rules for daytime television and for most specialty channels in March 2015 (CBC, 2015), BDUs remain at a competitive disadvantage relative to new media, as they are required to abide by remaining Canadian content rules and make financial contributions towards the creation of Canadian content. Typically these contributions amount to a minimum of 5% of their gross annual revenues derived from broadcasting activities (Dewing, 2011). To level the playing field between BDUs and new media, the government could consider subsidising Canadian content directly through general taxation.

Recent regulatory actions in broadcasting have focused on encouraging consumer switching by banning 30-days-notice cancellation policies (effective January 2015) and on plans to unbundle channel offerings. Since March 2016 the CRTC has required entry-level service to be provided at a cap of CAD 25/month and to have unbundled channels (pick and pay) or a choice to build or choose pre-assembled small packages, with full rollout by December 2016 (with both unbundled channels and small packages required as of this date). The need for the CRTC to step into the broadcasting market to regulate BDU offerings to drive lower priced basic service and unbundling channels/packages may highlight the lack of effective competition, particularly given vertical integration, despite the broadened alternatives provided by media digitalisation.

Overall, while Canada's high telecommunication service prices may reflect greater investment and quality, they may also highlight concerns over the level of competition. Canada's foreign ownership limits in telecommunications (and broadcasting) are some of the OECD's most restrictive (Figure 1.12), which may reduce competition and access to finance and slow the diffusion of new technologies. Nordås and Rouzet (2015) have shown that there is a strong relationship between performance indicators in telecommunication services, including lower subscription rates, and sectoral trade restrictions. Following the lifting of restrictions for small carriers in 2012, the remaining restrictions generally require that foreign interests hold no more than 46.7 percent of voting equity in any facilities-based telecommunications carrier or BDU and that the board of directors be at least 80 percent Canadian, but they do not apply to companies that resell telecommunication services. The ownership restrictions no longer apply to providers whose revenues are less than 10% of the total Canadian telecommunication market. However, as such companies are prevented from bundling telecommunication services with broadcasting, where foreign ownership restrictions still apply, barriers to entry are probably still high.

Figure 1.12. **Foreign entry restrictions in telecommunications are high in Canada**

Index from 0 (open) to 1 (closed), 2015



Source: OECD, Services Trade Restrictiveness Index database.

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Removing foreign ownership restrictions could heighten the level of competition in telecommunication services and broadcasting, leading to lower consumer prices. Rouzet and Spinelli (2015) show that eliminating these restrictions in telecommunications could reduce price-cost margins by 2 percentage points (from 26%), yielding tangible gains for consumers and downstream firms. To transition to a more open investment climate, the government could consider further liberalising entry in telecommunication services and liberalising entry in broadcasting, as recommended by the 2005-06 Telecommunications Policy Review Panel. Given large structural entry barriers, it may be necessary to allow foreign acquisitions of smaller broadcasters (i.e. those with less than 10% market share). Following this transition period, foreign entry should be liberalised completely (including acquisitions), though foreign investments would remain subject to the Investment Canada Act. While foreign ownership restrictions in broadcasting reflect in part efforts to

safeguard, enrich and strengthen the nation's cultural, political, social and economic fabric (Dewing, 2011), these cultural goals would be better protected by other means than ownership restrictions.

Recommendations to improve competition in telecommunications and broadcasting

- Remove foreign ownership restrictions in telecommunications and broadcasting, if necessary in a two-stage process. Protect cultural goals in broadcasting using other means than such restrictions.
- To level the playing field between cable and satellite companies and new media, consider subsidising Canadian content through general taxation.

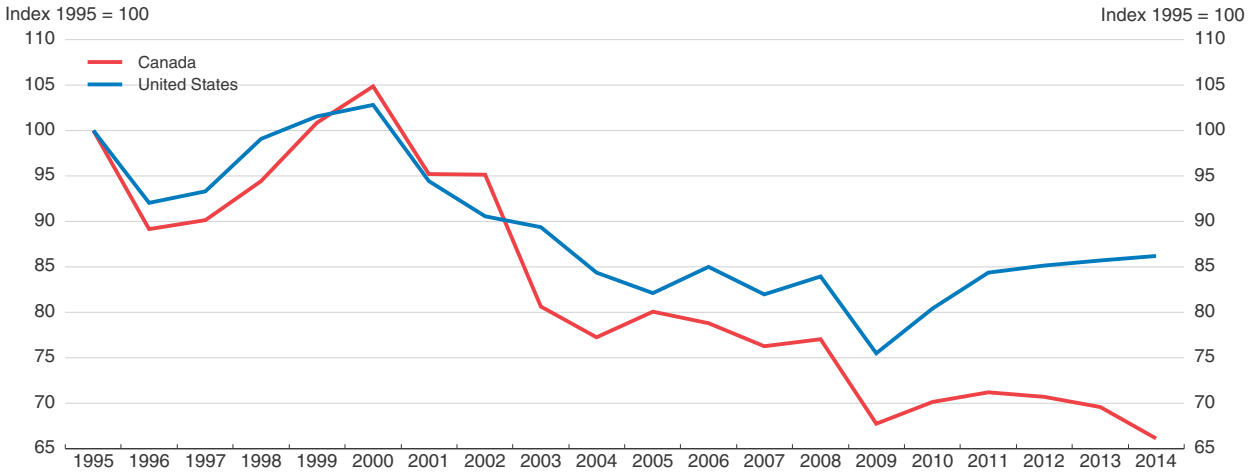
Transportation

Air transportation

Canada's airline industry was deregulated in 1987 with the passage of the National Transportation Act. The Act required airlines providing domestic service to be Canadian owned and controlled. Given Canada's geographical size, airlines play an important part in the movement of people, time-sensitive cargo and goods to northern and remote regions, and few transport alternatives exist in many cases, except over short distances. As a result, passenger air travel is generally considered as a separate market from other forms of transportation modes (OECD, 2014b). Consequently, the failure of one of the two large national carriers (Canadian Airlines International) and its merger with Air Canada in 2001 gave rise to competition concerns. Various measures were recommended by the Competition Bureau to ensure that anti-competitive practices were limited following its acquisition by Air Canada. This included provisions that dealt with predation in the airline industry and the pre-emption of facilities-based and other exclusionary conduct. Legislative amendments also empowered the Commissioner to issue temporary orders to prohibit domestic airlines from engaging in anti-competitive conduct (OECD, 2014b). Since then, a second national carrier, WestJet, which provides domestic service and international flights, has emerged. Other smaller but important airlines have entered as well (including Porter, Transat and Sunwing) that offer international and domestic flights and others offering only domestic flights. There were also several attempts at establishing other carriers, but these have failed.

During the initial period of deregulation prior to 2000, Canadian prices for domestic air travel were relatively flat in real terms (OECD, 2004; FRBSF, 2002). However, since 2000 real domestic air fares have fallen more in Canada than in the United States (Figure 1.13). Despite this, air fares for similar routes from US airports near the border have tended to be lower than from Canadian airports (Gill, 2012). High transportation costs penalise travel and may erode business competitiveness and reduce the attractiveness of Canada as a tourist destination. Relatively high prices may justify concerns over competition, including elevated barriers to entry and the role of taxes and fees, along with lower passenger densities in Canada, in eroding cost competitiveness. Past research has shown that competition from low-cost carriers has resulted in lower prices in Canada (CTARP, 2001), suggesting that reducing barriers to entry would yield lower prices for consumers and underpin the broader competitiveness of Canadian firms.

Figure 1.13. **Real average domestic air fares**[1]



1. Does not take into account possible changes in average flight length. Average domestic air fares have been deflated by the respective total consumer price indices.

Source: Statistics Canada, Tables 401-0004 and 326-0021; US Bureau of Transportation Statistics; OECD calculations.

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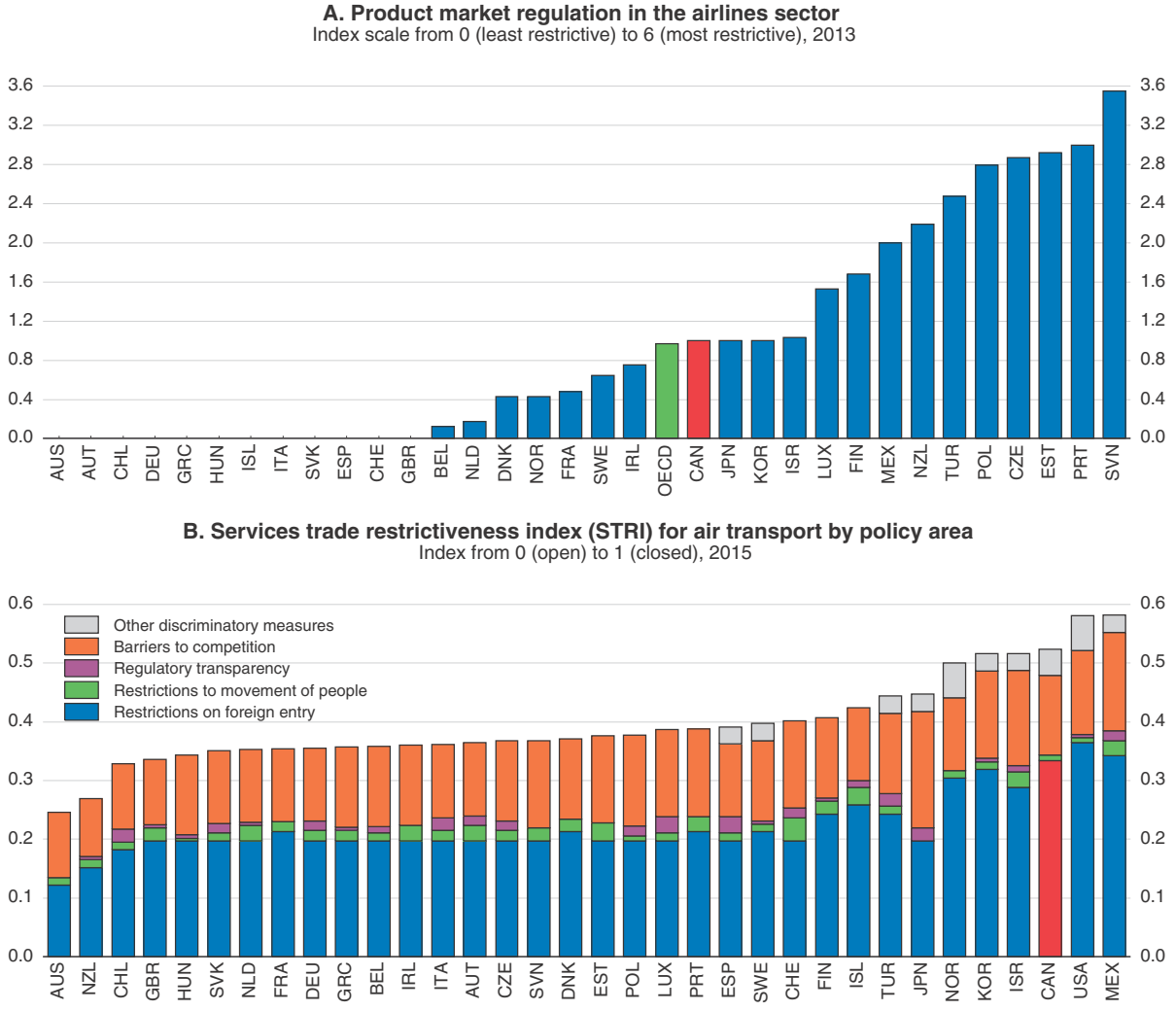
Structural barriers to entry into air transport (airlines and airports) (e.g. the expense of investing in or leasing aircraft, booking systems, slots, access to airport facilities including check-in facilities and gates, etc.) probably limit the amount of competition in a liberalised market (OECD, 2014a). These barriers have probably been amplified by other regulatory and strategic barriers. Sectoral regulation in the transportation sector is only slightly more restrictive than the OECD average (Figure 1.14), as Canada participates less in regional agreements, such as the European Union's Common Aviation Area, that facilitate air travel and competition in the sector; however, it has been very active in negotiating Air Service Agreements (ASAs) and open skies-type agreements to facilitate air travel.

In particular, Canada's Blue Sky Policy, adopted in November 2006, calls for a proactive approach to negotiating ASAs, including establishing reciprocal open skies-type agreements (similar to that negotiated with the United States in 2005) when it is in Canada's overall interest to do so. In setting its negotiating priorities, Canada consults a range of stakeholders, including air carriers, airport authorities, provincial and territorial governments, and others (e.g. business and tourism associations). As part of this process, consideration is given to issues such as the likelihood of liberalisation leading to new Canadian and foreign carrier services; the size and maturity of the air transportation markets under consideration and potential for future growth; Canada's international trade objectives; safety and security issues; foreign government requests and foreign relations; and bilateral irritants and disputes. Canada has negotiated new or expanded ASAs with over 80 countries, covering 71% of Canada's international passenger traffic and 94% of Canada's overall international two-way merchandise trade (Transport Canada, 2015). However, if "modified sixth freedom agreement rights", currently excluded from Canada's open skies agreements, were granted, this would increase competition and choice. For example, a US carrier (for reasons of geography, the United States is the only partner with whom modified sixth freedom rights would be operationally feasible) could fly from one Canadian airport to another through a US destination. Furthermore, competition could be strengthened by pursuing deeper continental integration through a common aviation area,

Figure 1.14. **Regulation in the airlines sector**



Source: OECD, Product Market Regulation database and Services Trade Restrictiveness Index database.

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as in the European Union, and placing a greater priority on consumer and non-airline business interests in negotiating ASAs.

Services trade restrictions in air transportation are relatively high in Canada, owing to restrictive foreign ownership limits (Figure 1.14, Panel B). This results in financing restrictions that may deter entry, raise funding costs for incumbents and lead to a slower adoption of new technology and best practices. To operate domestic air services, carriers are required to have no more than 25% of their voting equity owned by foreigners. Foreigners may, however, own non-voting equity. Lessening these restrictions by raising the limit to 49% (of voting equity) for air carriers engaged in international air services, could act to reduce funding costs for airlines and increase competition. In the domestic market eliminating foreign ownership restrictions completely and granting rights of establishment (where foreign carriers would be permitted to establish a separate carrier in Canada), as in Australia and New Zealand, could heighten domestic competition and

consumer choice. In the longer run, removing foreign ownership limits completely, including on international routes, as in Chile, could further promote competition. This said, easing these regulations can be expected to reduce wage premiums for workers in the sector and may increase job churn (Denk, 2016), which may increase political resistance to reform.

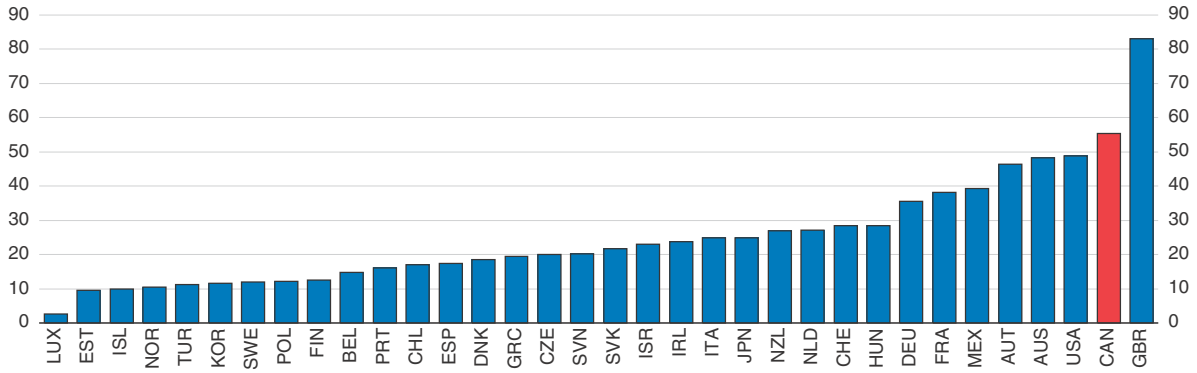
Structural barriers, such as access to take-off and landing slots, may also limit entry. Moreover, these barriers may be magnified if airport capacity is strained, albeit Canadian airports are not particularly congested, except Toronto Pearson and Vancouver International at peak times. These two hubs play a key role in Canada's hub-and-spoke system, and efficiency at these airports affects the overall system. As in many countries, slots at capacity-constrained Canadian airports are generally allocated based on historical rights, with precedence for new entrants to 50% of the pool and use-it-or-lose it provisions in place, based on International Air Transport Association guidelines. To facilitate further entry the government could also consider implementing a secondary market for slot allocation, where slots could be freely traded (leased or sold) between airlines, with government oversight of the trading mechanism to ensure fair access. Alternatively, broadening congestion-pricing strategies to allocate slots could also lead to increased efficiency in airport use (Madas and Zografos, 2010).

Strategic barriers to entry have also been enacted by airlines, including frequent flyer programmes (FFPs), corporate discount schemes and travel agent arrangements. FFPs may deter competition because they reduce the willingness of customers to switch carriers when faced with higher prices or lower quality, allowing carriers to increase margins as a result. The impact on competition of such programmes may also be magnified by participation in alliances. Norway, for instance, banned SAS's FFP on domestic travel in 2002, given the anti-competitive effects of such schemes, which facilitated entry of a new low-cost carrier. In the early 2000s, Air Canada was also required for a five-year period to sell access to its FFP to other Canadian carriers with less than CAD 250 million in domestic passenger revenues. Ultimately, it spun off Groupe Aeroplan, which later became Aimia, which is neither owned nor controlled by Air Canada. The federal government should assess the extent to which such programmes and discount schemes may be deterring entry. If anti-competitive effects are significant, the government should consider limiting points on certain routes or allowing passengers on new carriers to collect points on incumbents' programmes with compensation from the carrier.

The current structure of the Canadian airport system and associated fees may be harming cost competitiveness (Figure 1.15). Following the 1994 National Airport Policy, the government transferred smaller local airports to regional entities but retained ownership of the 26 busiest airports, which cover 94% of all passengers and cargo (SSCTC, 2012), leasing most of them to not-for-profit local Canadian Airport Authorities to manage and operate. While exempt from federal taxes, they must pay ground rent to the federal government, which can represent up to 30% of their operating budgets (CTARS, 2015). Rent was meant to ensure that the government was made no worse off financially from these transfers. Since 2005, the rent formula has been increasingly linked to airport revenues. This has probably deterred airport expansion, and its application to revenues rather than profits (allowed under a for-profit airport structure) may have reduced low-margin activities. Dachis (2014) argues that as a result, non-aeronautical revenues are lower at Canadian airports than in many other countries. A 2012 Senate report urged the Canadian government to stop charging rent and transfer Canada's main airports to the authorities that already operate them (SSCTC, 2012). The federal government should assess the impact of the current ownership structure of large Canadian airports on efficiency and cost

Figure 1.15. **Ticket taxes and airport charges**

Index of relative cost of access to international air transport services from 0 (lowest) to 100 (highest)[1]



1. Series reversed as 100 minus original series.

Source: World Economic Forum (2015), *Travel and Tourism Competitiveness Report 2015*.

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competitiveness. It should consider dissolving the existing authorities and selling its remaining ownership interests in airports to a private company or companies or to a set of investors. Alternatively, as recommended by the 2014-15 Canada Transportation Act Review, it could convert the existing airport authorities into share capital, for-profit corporations and sell them the airport lands. At a minimum, it should tie airport rents to profits under a for-profit structure for authorities or land values, rather than revenues (including eliminating the progressivity of the tax) to encourage airports to take on alternative revenue streams that would help to lower landing fees.

Overall, Canada's comparatively high airport fees and ticket taxes may be eroding Canadian carriers' cost competitiveness to the extent that they compete with foreign rivals using airports abroad, such as in the United States. While the charges may be minor by themselves, the series of small fees add up to drive a wedge between Canadian and US air fares. One study (Gill, 2012) suggested that roughly 50% of the difference between carrier costs in Canada and the United States that feed into base fares can be accounted for by fees, fuel prices and taxes. However, this reflects the user-pay principle in Canada, while US infrastructure is not fully funded by user fees and airports are heavily subsidised. Nevertheless, lower US fares have contributed to a leakage of Canadian travellers to nearby US airports. While the recent depreciation of the Canadian dollar has probably reduced this gross outflow of passengers in the last couple of years (no corresponding figures are available in net terms), it is estimated that over 2.5 million Canadians crossed the border to fly from U.S. airports in 2011 (Gill, 2012), reducing output and employment in the sector. A summary of the various charges and fees is provided in Table 1.3 below, including a comparison with the United States.

Rail

In the rail sector countries have adopted varying combinations of private and public ownership, industry structure (unbundling, licencing or vertical integration) and regulatory measures and rely on varying competitive sources to limit market power (intra- vs. inter-modal) (OECD, 2013). The resulting market structure depends largely on the pre-existing track and geography, along with regulatory and policy interventions. Rail in North American countries is dominated by freight, operates over vast distances and has vertically

Table 1.3. **Airport taxes and fees**

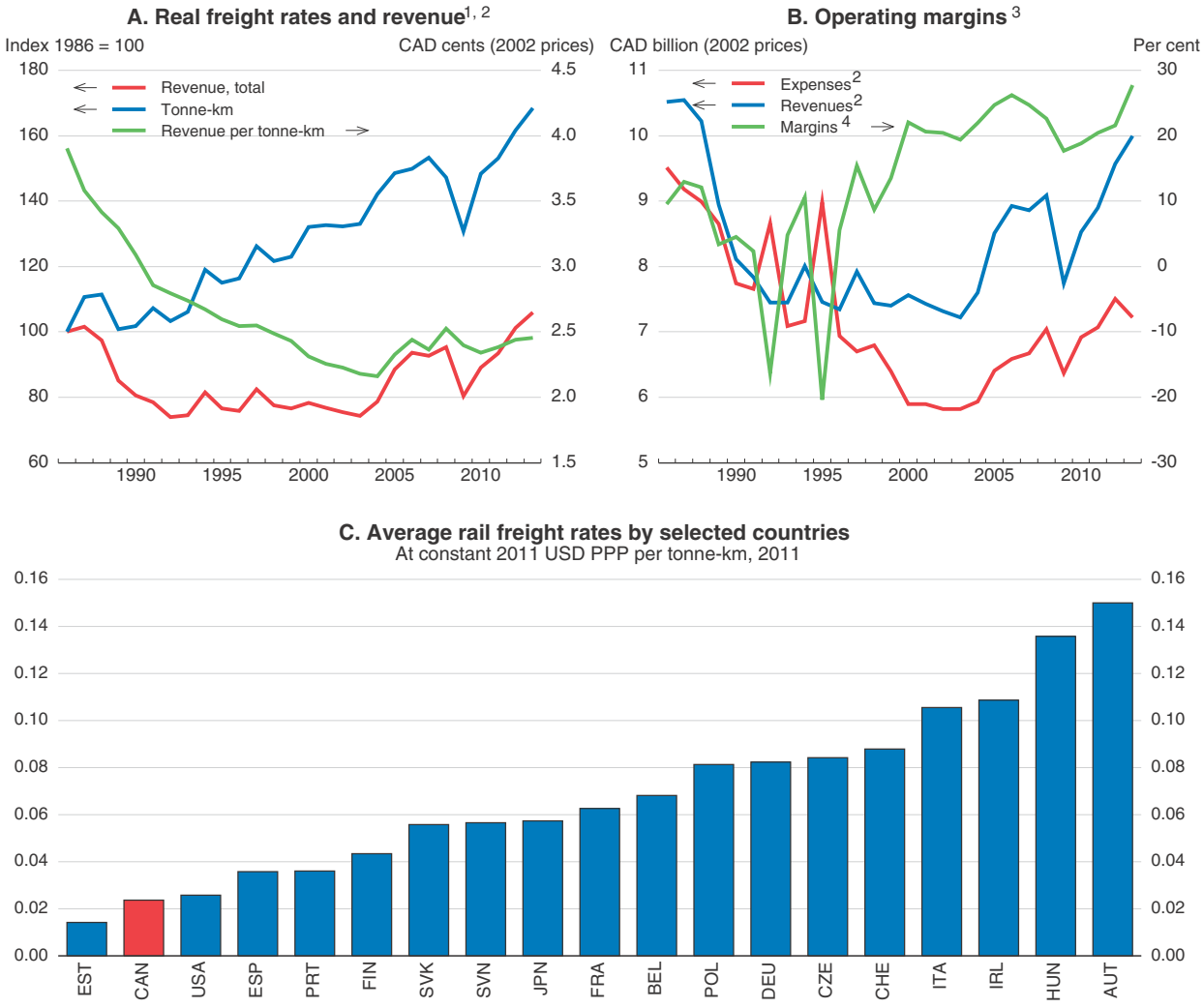
Taxes and fees	Description and comparison to United States[1]
Included in base fares	
Airport rent	Ground rent is paid by leased airports to the federal government, which are based on a progressive formula tied to revenues. Such rents are not levied in the United States as they are owned and operated by the city or county, though some revenues are used to subsidise public transport in the United States.
Navigation fees	Nav Canada charges carriers for the cost of navigation and related services. These charges are limited to cover costs and to maintain reasonable financial reserves. Such charges are partly subsidised in the United States.
Payments in lieu of municipal taxes (PILTs)	Canadian airports are subject to PILTs, while they are not charged in the United States, as airports are typically owned by the municipalities.
Fuel taxes	Federal fuel taxes are not levied on international flights, as is international practice, but are levied by some provincial governments (Manitoba, Nova Scotia, Ontario and Prince Edward Island), which may affect international competitiveness. Most states do not impose aviation fuel tax on international commercial flights. A federal excise tax of 4 cents/litre is also levied on fuel for domestic flights. Taxes levied on domestic flights go to general revenues in Canada, while they are reinvested in aviation infrastructure in the United States.
Applied to base fares	
Air travellers security charge	Covers the full cost of pre-boarding screening of passengers, their belongings and checked baggage as well as security services provided by the Canadian Transportation Security Authority (CATSA). CATSA has been the crown corporation responsible for delivering air travel security in response to the 11 September 2001 attacks. The charge also covers Transport Canada regulations and oversight and Royal Canadian Mounted Police officers on selected domestic and international flights. In the United States, however, security costs are partly government funded.
Airport improvement fee	Airport improvement fees are charged by the airports to pre-finance infrastructure investments. Charges vary by airport based on their capital programmes, and there is little oversight of the amount of the charges. Similar charges in the United States (Passenger Facility Charges) tend to be lower (Gill, 2012) and are capped by Congress.
Sales taxes	The Goods and Services Tax/Harmonised Sales Tax (GST/HST) is levied on top of base fares and all other charges and fees for domestic air travel, and only GST is levied for air travel to the United States (except Hawaii). Neither the GST nor HST is levied on other international flights.

1. Some offset is provided by fees charged in the United States and not in Canada including the transportation tax, the agriculture fee, the customs fee and the immigration user fee.

integrated companies The European Union, on the other hand, tends to be dominated by passenger traffic (particularly in Western Europe) and has moved to introduce vertical separation with varying degrees of success. While greater separation may limit anti-competitive behaviour, reduced investment incentives in rail infrastructure, losses of economies of scope and other inefficiencies may increase operating costs (OECD, 2013).

Canada's railway sector is dominated by two main vertically integrated private railways: Canadian National (CN), privatised in 1995, and the always private Canadian Pacific (CP), though some small regional players exist. In 2013, these two companies accounted for 90% of the total rail industry based on revenues (Transport Canada, 2014). Passenger rail plays a small role in Canada, given its geographical size (though passenger rail is more important in the Quebec-Windsor corridor than in other regions). CN and CP operate cross-country rail lines (with the exception of Quebec for CP, where it has no rail line) on a commercial basis. Legislative and regulatory provisions to promote increased railway competition, such as those pertaining to regulated running rights (when other operators are granted access to another railway's track network) and interswitching (when a shipper has cars picked up by the railway to which it is closest and has them transferred to another railway at regulated rates), have been put in place. The Canadian rail system has performed well, with falling freight rail rates (in real terms), as increases in tonne kilometres (a measure of freight shipped) have outpaced total revenue gains since deregulation in the 1980s and 1990s (Figure 1.16, Panel A). Real operating margins have improved since the late 1990s owing to cost containment (Panel B), and labour productivity has also shown steady gains since deregulation (CPCS, 2014; ITF, 2014). Overall, Canada's freight rates are low by OECD standards (Panel C).

Figure 1.16. **Railway performance and rates**



1. Including Canadian National and Canadian Pacific.
2. Deflated by the CPI.
3. Data include freight and non-freight activities for Canadian National, Canadian Pacific and VIA Rail.
4. The operating margin is calculated as the share of net rail operating income in operating revenues.

Source: Statistics Canada; OECD calculations; L. S. Thompson (2014), "What is Rail Efficiency and How Can It Be Changed?", *ITF Discussion Paper 2014-23*, prepared for the Roundtable *Efficiency in Railway Operations and Infrastructure Management*, 18-19 November 2014.

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A high degree of overlap exists between CN's and CP's networks. Rail companies compete with each other for more than 40% of point of origin to point of delivery rail traffic, while roughly 61% of shippers (excluding grain) surveyed for the 2001 Canadian Transportation Act Review mentioned having access to alternative railways (InterVISTAS Consulting, 2003). These assessments exclude the impact of the increase in interswitching to 160 kilometres from 30 kilometres for commodity shipments (including grain) in the three Prairie provinces, which was put in place in 2014 (see below). Inter-modal competition may exist over short distances, including competition from trucking, but over long distances few cost-effective alternatives exist. The absence of road pricing combined with the commercial structure of freight shipping

(such that shippers are implicitly charged the full cost of rail infrastructure) may bias the freight transport system against rail in favour of trucking over these shorter distances.

As the rail sector is highly concentrated, several legislative and regulatory measures have been put in place to encourage competition and ensure service quality (Table 1.4). While many of the provisions have been used sparingly, their availability is viewed as encouraging competition and efficient negotiations. Expansion of open access or vertical separation should be assessed with caution, given likely negative effects on efficiency, cost and investment incentives. For instance, Ivaldi and McCullough (2004) estimated that an integrated freight railroad in the United States could have a 20-40% cost advantage over a vertically separated alternative.

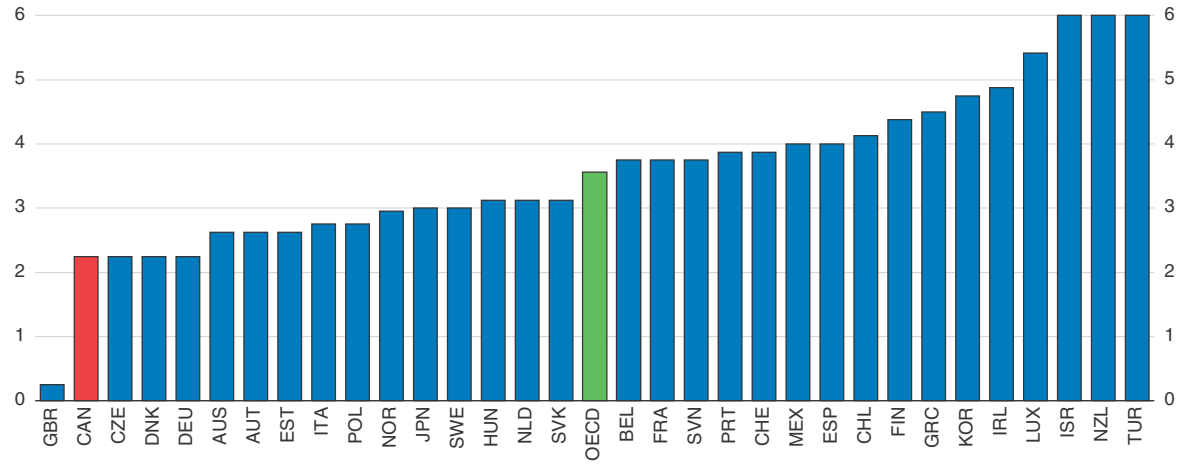
Table 1.4. **Regulations to facilitate competition in the Canadian rail sector**

Measure	Description
Interswitching provisions	A shipper is entitled to have cars picked up by one railway and have them transferred to another railway, provided the shipper's location is within a 30 kilometre radius from an interchange point. Fees for interswitching are regulated by the CTA and are based on estimated variable costs plus a contribution to fixed costs. Following the 2014 Fair Rail for Grain Farmers Act, the interswitching radius for commodities supplied by the western provinces of Alberta, Saskatchewan and Manitoba, was increased to 160 kilometres (discussed further below). Such provisions are set to expire in August 2016.
Competitive line rates (CLRs)	Facilitates the ability of a shipper to have more than half of the hauling of freight to a final destination performed by one or more other railways. Shippers can request the railway to provide initial hauling according to a CLR where applicable. The CLR is based on relevant regulated interswitching rates and revenue the railway generates for moving similar commodities over similar distances. CLRs established by the CTA are valid for 1 year, unless the shipper and railway agree to a different term.
Running rights	Enables one railway to run over the tracks of another. Where running rights cannot be negotiated by the railways, the CTA can grant rights under certain conditions. These include the consideration of public interest, pre-establishment of service agreements with shipper(s) and evidence of market abuse or failure, along with corresponding evidence of how such rights would improve competition. Compensation is required based on mutually agreed rates or rates established by the CTA.
Final offer arbitration	Enables a shipper who is dissatisfied with the rate or rates charged by a carrier or conditions associated with the movement of goods and cannot reach an agreement with the carrier to submit the matter in writing to the CTA for final offer arbitration. To provide incentives for parties not to put forward extreme positions, the arbitrator is not permitted to adjust either offer but must rather select one or the other.
Level of service provisions	Places an obligation on railways to provide adequate and suitable service on the payment of a lawfully payable rate. Shippers can complain to the CTA, which must investigate and make a determination within 120 days. As of 2013 new provisions were added to the Transportation Act to allow shippers to seek binding arbitration if they cannot reach an agreement with railways through negotiations.

Regulation in the railway sector in Canada is fairly liberal relative to other OECD countries (Figure 1.17). However, several measures have been put in place to facilitate access and protect captive shippers, particularly for western grain shipments. The Canadian government has capped revenues that CN and CP can earn from shipping western grain in any crop year to non-US or non-Canadian-Prairie locations based on the volume and length of the haul (adjusted for input price inflation) since 2000 (Maximum Revenue Entitlement). This is distortionary and could induce rail companies to push their cost onto other goods or commodities and may reduce the incentives for rail companies to move grain. Moreover, some crops, such as chickpeas and soybeans, which have seen increased production in Western Canada do not fall under the Maximum Revenue Entitlement, which may distort production patterns. These revenue caps also induce efficiency losses, including discouraging rail companies from making use of container traffic capacity for specialty grains, as it is more costly and revenue caps would be reached more quickly (Prentice and Parsons, 2015). In addition, they reduce incentives for investing in the network, including acquiring more efficient hopper cars to replace the ageing stock (see below).

Figure 1.17. **Sectoral regulation in the rail sector**

Index scale from 0 (least restrictive) to 6 (most restrictive), 2013



Source: OECD, Product Market Regulation database.

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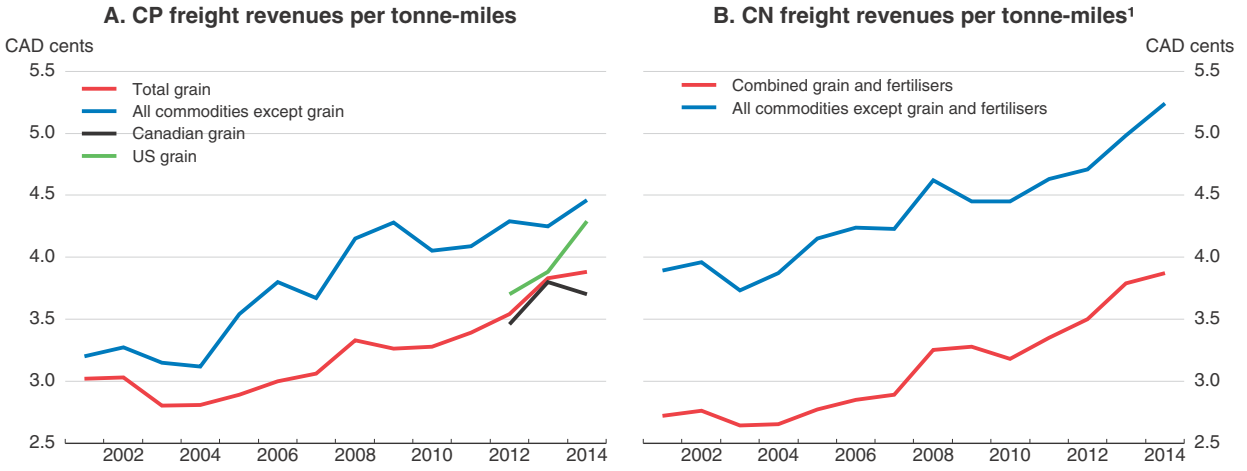
In 2014, as part of the Fair Rail for Grain Farmers Act, the radius for interswitching provisions was expanded to 160 kilometres (from 30) specifically for commodities supplied in the three Prairie provinces, in part to increase rail options for grain farmers. The CTA estimates that the expanded interswitching radius raises the number of grain elevators having access to more than one railway from 48 to 261 (CTA, 2014; Schulman, 2014). These provisions will expire unless renewed by August 2016. The expansion of regulated rates through greater interswitching areas increases (non-reciprocal) access to US rail companies and may reduce investment incentives. In order to make a well informed decision in August it will be important to assess the net benefits of this policy, including its impact on efficiency and investment outcomes, including whether the provisions are necessary for all commodities and should be applied only to the Prairie provinces. Furthermore, to ensure that all interswitching rates reflect actual costs, the CTA should set rates annually and not only when the Railway Interswitching Regulations are reviewed, as recommended in the 2014-15 Transportation Act Review.

Additionally, as part of the Fair Rail for Grain Farmers Act, the federal government maintains the option to impose mandatory volume requirements if the grain supply chain compromises farmers' livelihoods, the economy or Canada's international reputation as a reliable shipper. Such volume requirements were in effect in the year to March 2015. The government also retains ownership of some grain hopper cars, which were purchased in the 1970s and 1980s to ship regulated grains. While rail companies have been paying to upgrade these cars to extend their useful life, the majority of them will need to be replaced over the next 10-15 years. Moving to a more competitive structure for the movement of grain would allow rail companies to invest commercially in an upgraded fleet and avoid similar issues of low investment rates and need for government support.

There is a considerable gap between the average freight rate applied to grain and non-grain shipments by both CP and CN (Figure 1.18). Furthermore, in 2012-14 CP's average grain shipment rates in Canada were 8% below those in the United States. Indeed, comparing CP's average grain freight rates in Saskatchewan to those just across the border in North Dakota,

which may represent conditions similar to those in Canada but without a regulatory revenue cap, suggests that Canadian grain rates may be 14% below commercial levels (Cairns, 2015). Overall, to reduce distortions and encourage more investment, renewal and efficiency of the rail network, revenue caps on grain shipments should be eliminated.

Figure 1.18. **Grain and non-grain freight rates**



1. Data for CN also includes fertiliser shipments, but these shipments were small in comparison to grain (18% of combined grain and fertiliser revenues in 2014).

Source: Canadian Pacific and Canadian National Railways, *Annual Reports*, various years; OECD calculations.

StatLink http://dx.doi.org/10.1787/888933371181

Recommendations to improve competition in transportation

Air transport

- Eliminate foreign ownership restrictions in air transportation on domestic routes, and raise them on international routes to 49% (the threshold required for international air service agreements under IATA rules).
- Consider seeking deeper integration within North America to establish a common aviation market.
- 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 them 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.
- 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.

Rail transport

- Eliminate revenue caps on western grain shipments by rail.
- Determine whether the expanded interswitching zone for Prairie provinces' commodity shipments has led to net benefits for the economy; otherwise allow the provisions to lapse in August 2016.

Easing interprovincial barriers to trade and labour mobility

While interprovincial tariff barriers are forbidden by the Canadian constitution and Canadians have the right to live and work anywhere in the country, the existence of non-tariff interprovincial barriers reduces trade and labour mobility and weakens efficiency and productivity. If these barriers contribute to a smaller scale of production and retailing, the result may be a loss of competitiveness abroad and higher prices domestically. Overlapping federal, provincial and territorial regulatory responsibility in many economic policy areas has enabled the emergence of numerous direct and indirect non-tariff interprovincial barriers. Following a push in the mid-1980s to reduce them, the Agreement on Internal Trade (AIT) took effect in July 1995.

The Agreement on Internal Trade (AIT)

The principles of the AIT are to: restrict the establishment of new barriers to internal trade and to facilitate the movement of persons, goods, services and investments in Canada; treat persons, goods, services and investments equally, regardless of where they originate; reconcile standards and regulations; and ensure that administrative policies operate to provide for the free movement of persons goods, services and investments within Canada. Exemptions to these principles are permitted where it can be demonstrated that they are to achieve a legitimate objective, do not unduly impair access and are not deemed to be a disguised restriction on trade. The AIT includes provisions covering procurement, investment, labour mobility, consumer-related measures and standards, agriculture and food products, alcoholic beverages, natural resources processing, communications, transportation and environmental protection. Since its establishment, 14 amendments have been made to strengthen some of its aspects, including measures to further liberalise labour mobility (2009) and agricultural trade (2010), and to strengthen the dispute resolution process (2012 and 2015).

Negotiations to modernise and update the AIT began in late 2014. The 2015 federal budget announced the creation of an internal trade promotion office within Innovation, Science and Economic Development Canada to support the AIT negotiations and act as a federal hub for research and analysis. In addition, the development of an internal trade barriers index as announced in the 2014 budget should help to better understand trade barriers and prioritise reforms.

The AIT is widely believed to have contributed to the removal of a range of interprovincial barriers in Canada and, along with subsequent amendments, to have improved the flow of people and goods across borders (Public Policy Forum, 2013). However, its overall framework, dispute resolution mechanisms and the absence of agreements in particular sectors (i.e. energy) are reducing its effectiveness. Furthermore, the slow pace of AIT reform has led to several fragmented trade enhancement arrangements on a regional basis outside of the AIT (Box 1.2). Annual cost estimates of the impact of these internal barriers range widely. The Public Policy Forum (2013) placed these barriers at CAD 3 billion to 49 billion (0.2 to 2.5% of GDP). However, most estimates are in the middle to lower end of this range, though Albrecht and Tombe (2016) is a notable exception.

The AIT uses a positive list approach in which only rules that are described in the Agreement apply, contrary to many modern free trade agreements, which employ a negative list approach and focus on removing all barriers subject to negotiated exemptions. This latter approach may lead to shorter negotiations and a transparent list of barriers that

Box 1.2. **Summary of internal trade agreements outside of the AIT**

To build on the AIT, several regional internal trade agreements have been signed to facilitate trade between the provinces. Many have focused on facilitating trade through the harmonisation of regulations and streamlining processes. A summary of some of these agreements and key differences relative to AIT are provided below.

- **New West Partnership Trade Agreement (NWPTA):** signed in 2010 between Alberta, British Columbia and Saskatchewan, this agreement builds on the 2006 Trade, Investment and Labour Mobility Agreement between Alberta and British Columbia. The NWPTA follows a negative list approach, establishing a framework to remove barriers in all sectors of the economy that relate to trade, investment or labour mobility. It also commits these three provinces to full mutual recognition or reconciliation of their rules in these areas and includes additional clauses to facilitate international trade, investment and talent development, and joint procurement initiatives to increase competitiveness. It includes lower procurement thresholds for the NWPTA to apply than the AIT and facilitates labour mobility for a longer list of regulated professions. An integrated corporate registration and reporting system streamlines extra-provincial business registration. In addition, dispute resolution mechanisms are timelier.
- **Ontario-Quebec Trade and Cooperation Agreement (TCA):** signed in 2009, this agreement aims to improve the interprovincial trade framework and enhance economic cooperation, particularly to increase harmonisation and labour mobility and improve dispute resolution. The TCA takes a positive list approach and includes chapters on economic, regulatory and energy cooperation that extend beyond traditional commitments and six sector-specific chapters that address major trade barriers. It also provides a dispute settlement mechanism that can award up to CAD 10 million in penalties for government-to-government disputes (double that in AIT) if one province is found to be inhibiting trade through the use of nontariff barriers; it does not, however, have a person-to-government dispute resolution mechanism.
- **Joint Office for Regulatory and Service Effectiveness:** a memorandum of understanding was signed between Nova Scotia and New Brunswick in March 2015 to build a modern, consistent and fair regulatory environment between the two provinces. The office aims at reforming regulations to reduce red tape, overlap and unnecessary regulations and reduce business costs. It also aims at making effective and efficient use of online technology and boosting provincial cooperation and harmonisation.

may be targeted in the future. Moreover, such an agreement would be more dynamically efficient, as new sectors or areas would be automatically covered. This framework is used by the New West Partnership Trade Agreement (NWPTA), which was signed between the provinces of Alberta, British Columbia and Saskatchewan, and recent international trade agreements (e.g. the Comprehensive Economic and Trade Agreement between Canada and the EU).

Another issue with the AIT in its current form is that in some cases international trade agreements allow foreign entities greater access to a province's market than is available to other provinces and territories (note that Nunavut is excluded from the current version of the AIT). To address this, the provinces and territories have agreed to the principle that the renewed AIT will adjust, where appropriate, their internal commitments with those made in international trade agreements (Council of the Federation, 2014).

Trade agreements' success depends on timely and effective enforcement, with appropriate penalties to encourage compliance. Since the AIT was signed, some amendments have led to streamlining of the dispute resolution process, the creation of appellate and compliance panels, the introduction of monetary penalties of up to CAD 5 million (amounts are proportional to each party's population) for non-compliance with dispute panel rulings, and changes to increase access to dispute resolution for private parties. Despite these changes, some challenges remain. Dispute resolution remains lengthy, averaging 41 months for those disputes that proceeded to a panel (roughly a quarter of all disputes) (Pavlovic et al., 2015). Limited penalties may reduce adherence to the rules and dispute panel findings. Furthermore, private plaintiffs must first request that the relevant government take their matter forward and can proceed alone only if the request is rejected and they pass a screening process. Rulings in their favour do not permit the private party (or government) to claim damages or allow provincial retaliation in its support (as is available for government-to-government disputes). Furthermore, there is no judicial review of decisions. While an appeals process to dispute panel decisions is available through the establishment of an appellate panel, compliance panel decisions cannot be appealed. Overall, to strengthen incentives for compliance with panel decisions, parties should consider raising monetary penalties and private parties should be able to claim damages. To ensure more timely resolution, private parties should have the option to carry forward a dispute against a government without first having to go through their own provincial government. Decisions should also be subject to judicial review to prevent errors of law.

Unnecessary regulatory differences may impede competition and increase costs for businesses. Regulatory reconciliation could help facilitate the movement of goods, services and labour. Mutual recognition ensures that any product or service produced or delivered in one province could be admitted into another and therefore could not be banned for sale unless there is a good reason for an exemption. Similarly, people registered to practice an occupation in one province should be entitled to practice an equivalent occupation in others, as in the 2009 amendments to Chapter 7 of the AIT relating to labour mobility for regulated professions. For instance, the NWPTA commits signatory provinces to full mutual recognition or reconciliation of their rules affecting trade, investment or labour mobility.

Internal trade agreements of other countries provide examples of the effectiveness of mutual recognition in facilitating trade and the harmonisation of regulations. The European Union has included mutual recognition measures in the Maastricht Treaty and the adoption of the Mutual Recognition Accord (MRA) in Australia obliges its constituent states to admit goods and services of other states in spite of differences in technical or quality specifications. In the Australian experience, the implementation of the MRA was successful in promoting labour mobility, contributing to wage convergence of workers across states and increasing interstate trade as a share of gross state product (Australian Government Productivity Commission, 2009). Mutual recognition is a practical and cost-effective way of overcoming incompatible regulatory regimes, which requires less bureaucracy to oversee (Macmillan, 2013). Therefore, the federal, provincial and territorial governments should consider adopting mutual recognition or other strategies for regulatory reconciliation in the updated AIT, requiring that exemptions be evidence-based.

A sharper focus (or even inserting a special chapter) on technical barriers to trade could promote more in-depth harmonisation of legislation, standards and regulations

among the provinces. Furthermore, currently there are limited avenues to align internal trade agreements and regulations with corresponding international agreements. Establishing a regulatory council tasked with harmonising internal regulations between the provinces and aligning regulations in interprovincial and international agreements could help to reduce domestic trade frictions and lower business costs. For example, in Australia the Council of Australian Governments has worked to identify sectors and industries with duplication and excessive regulatory burdens (OECD, 2010, pp. 97-98). Moreover, in 2011, Canada and the United States established the Regulatory Cooperation Council to reduce red tape and make regulations more compatible, and a similar council could be beneficial for the federal, provincial and territorial governments.

To continue momentum on internal trade reform, the term of the chairperson of the Committee on Internal Trade charged with overseeing the AIT's operation and negotiating new provisions should also be extended (from the current one year) and could be supported by a federal co-chair (Canadian Chamber of Commerce et al., 2014). This would provide greater leadership and continuity within the Committee to drive reforms. In addition, a formal commitment for the Internal Trade ministers to meet more frequently than annually could also help improve collaboration and strengthen the internal market. The current practice of consensus decision-making may also be slowing progress, as provinces with protectionist interests may veto decisions. The governments could consider moving towards majority, or as in the European Union, qualified-majority voting.

Procurement by governments should be open, fair and transparent. While AIT amendments in 1999 and 2005 aimed at achieving these goals, some international trade agreements set a new benchmark (e.g. the Canada-European Union Comprehensive Economic and Trade Agreement and the World Trade Organisation Agreement on Government Procurement), including more favourable limits for procurement rules to apply. In addition, some Canadian sub-national internal trade agreements have gone farther in liberalising procurement than is available through the AIT (e.g. the NWPTA).

Interprovincial labour mobility

Labour mobility plays an important role in labour market adjustments in Canada, and facilitating labour reallocation could increase productivity growth (Carey, 2014). Canada's labour markets are generally dynamic and characterised by flexible employment protection legislation. Although income and employment differentials between provinces are a major factor behind interprovincial labour movements, barriers continue to exist that constrain adjustments. Efforts have been made through the AIT process to reduce barriers to labour mobility. The AIT was strengthened in 2009 with amendments that established mutual recognition of the qualifications of workers in regulated occupations. This was reinforced by the 2012 decisions covering crane operators and public accountants that held that jurisdictions cannot refuse to certify workers from another jurisdiction, unless there is demonstrable evidence of public risks, and that differences in educational standards and length of training do not by themselves constitute a reason to restrict labour mobility. However, provinces and territories continue to have the right, under certain conditions, to recommend additional requirements. Justification must be made, clearly documented and approved by the government proposing the restriction and posted publically to comply with Chapter 7. Currently, exceptions are few relative to the number of regulated occupations.

Despite these efforts, there is evidence that provincial borders limit labour mobility (Amirault et al., 2013). For example, individuals may be concerned over having their credentials accepted in another province in an efficient and timely manner. The recent crane operators' and public accountants' settlements, which took three and ten years, respectively, have shown that such processes may be lengthy, reducing incentives for private parties to file complaints (Carey, 2014). Slow action through the AIT has also encouraged sub-national accords, as described above. Overall, governments should work together to expedite the AIT dispute resolution panel's proceedings to encourage labour mobility and compliance with the agreement. At the same time, efforts are underway through the Canadian Council of Directors of Apprenticeship to align apprenticeship systems across Canada for recognised trades to improve mobility. Moreover, Canadians' mobility is as high as in the United States, and Canada has one of the most geographically mobile labour markets in the world, suggesting that these barriers are relatively small.

Sectoral interprovincial trade barriers

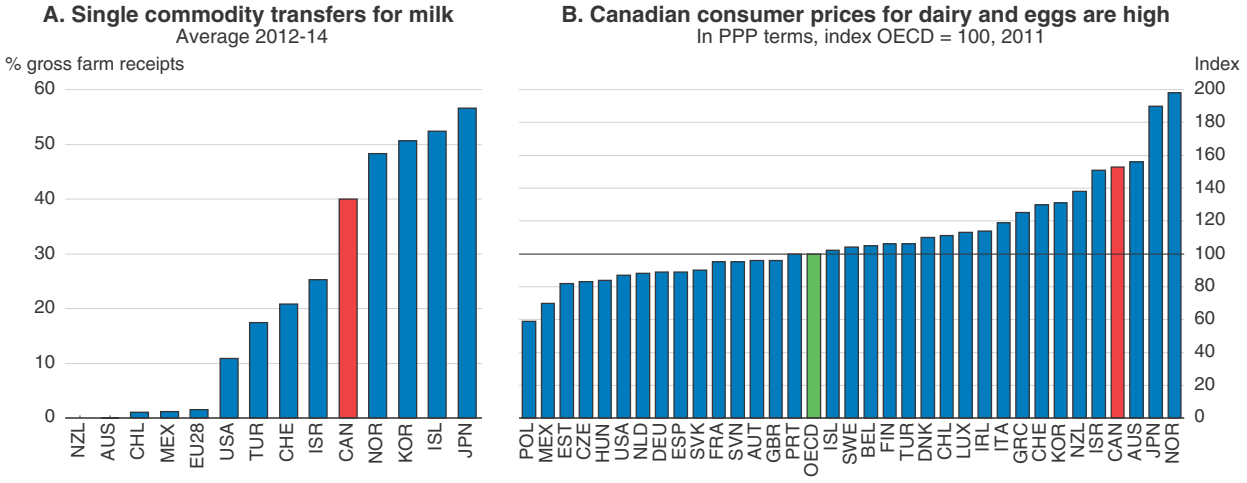
Key areas where provincial sectoral barriers exist are in agriculture, securities regulation and business licencing, alcoholic beverages, ethanol blends (different ethanol blend requirements require a unique blend for each province and territory, which increases costs) and truck size and safety regulations (different weight and dimension requirements may impede businesses from working across borders). Some of these sectors are covered briefly below.

Agriculture

Despite efforts to achieve greater interprovincial trade, multiple technical and non-technical barriers remain, including the use of supply management for agricultural products. Agriculture is covered in Chapter 9 of the AIT, but its scope is limited. In November 2005, the parties agreed to expand the coverage of Chapter 9 to capture all technical measures. Additionally, some provinces and territories have enacted trade enhancement arrangements provided under Article 1800 of the AIT as an alternative way forward. In 2006, British Columbia, Alberta, Saskatchewan, Manitoba, Prince Edward Island and the Yukon signed the "Interim Agreement on Internal Trade in Agriculture and Food Goods" to expand the AIT's scope and coverage to all technical measures affecting interprovincial agriculture and food trade among the signatories, including health, safety, quality and labelling regulations. In applying AIT rules to Chapter 9, Article 902 of the AIT limits the unwarranted use of technical measures (e.g. technical regulations, standards) as barriers to internal trade of all agricultural and food goods – including supply-managed products – and not to prevent signatories from adopting or maintaining measures related to the functioning of the supply management system such as allocation of production or pricing mechanisms. For details on the costs of these supply management systems see Jarrett and Kobayakawa (2008).

Production- and trade-distorting agricultural support in Canada has been higher than the OECD average in recent years, mainly reflecting measures to stabilise farm incomes in the short term (OECD, 2016). For example, the dairy quota system provides greater producer support than average in OECD countries (Figure 1.19, Panel A). These quotas are set to restrict the quantity of milk produced to the expected level of domestic consumption and have probably served to raise domestic dairy prices, particularly relative to the United States (Li, 2014). Quota elimination could help reduce Canadian prices, which

Figure 1.19. **Dairy producer support and prices**



Source: OECD, Agricultural Policy Indicators – Producer and Consumer Support Estimates and Purchasing Power Parities Statistics databases.

StatLink http://dx.doi.org/10.1787/888933371193

are elevated compared with other OECD countries (Panel B) and could also promote more inclusive growth and innovation.

Supply management is regressive: it costs the poorest 20% of Canadians 2.3% of their incomes, relative to 0.5% for the richest 20% (Cardwell et al., 2015). It has also fragmented the production system, reducing economies of scale and the allocation of production to the most efficient producers. Annual total factor productivity growth in Canada's agricultural sector declined to 1.5% on average in 2002-11 from 2.6% the previous decade, while the OECD average remained relatively stable around 2% over this period (OECD, 2016), likely reflecting in part weakened incentives resulting from these supply management policies. While a small increase in dairy imports can be expected through the implementation of the Trans-Pacific Partnership, a broader phasing out of supply management policies would lead to more significant improvements in inclusive growth.

Alcoholic beverages

Although alcoholic beverages are covered under Chapter 10 of the AIT, it deals only with fees and discriminatory listing of products. Moreover, while amendments to the Importation of Intoxicating Liquors Act removed federal restrictions on the shipment of wine across provincial borders in 2012 and beer and spirits in 2014, significant provincial and territorial barriers continue to exist. As a result, wineries and breweries looking to expand across provincial or territorial borders experience some obstacles, as alcohol generally cannot be sold directly to consumers in other provinces. This reduces consumer choice and lowers revenues for Canadian wineries and breweries. To date, only British Columbia, Manitoba and Nova Scotia have lifted some of their restrictions on the interprovincial movement of alcohol.

Alcohol retailing in some provinces is subject to a low level of competition due to strict regulation. While Alberta privatised liquor retailing beginning in 1993, liquor authorities in many other provinces continue to play a large role in retailing. In Ontario, for instance, the Liquor Control Board of Ontario, which is government owned, has near exclusive rights to

sell wine and spirits, and The Beer Store, owned by three major breweries, does most of the retailing of beer in the province. Two large provincial wineries also have the right to sell their wines in major off-winery stores, but no such access is provided for most other wineries. Recent reforms have eased restrictions on beer sales, however, as selected supermarkets are now permitted to sell beer at regulated prices, with a requirement that at least 20% of shelf space be allocated to smaller brewers to promote market access for small players. Recent reforms aside, the lack of competition in Ontario's system is estimated to increase costs for consumers and secondary distributors like restaurants (given price discrimination for resale to commercial establishments) and may reduce government revenues, particularly when compared to more liberalised provinces (Masson and Sen, 2014). Progress to encourage competition in other provinces is generally further advanced. For instance, since 2002 British Columbia has allowed privately owned retail outlets to co-exist with government-owned stores, and Quebec has allowed the sale of wine and beer in grocery and convenience stores, while the crown corporation Societé des alcools du Québec remains present in spirits and wine retailing.

Securities regulation

Canada is the only OECD country without a national securities regulator. While support for its creation from the federal government is longstanding, the Supreme Court unanimously rejected a federal proposal in 2011 on the grounds that it overstepped trade and commerce provisions in the constitution, where securities regulation falls within the property and civil rights power assigned to the provinces. The current fragmented structure of provincial regulators leads to duplication and overlap, resulting in a likely misallocation of resources, and may make it difficult for securities regulators to react quickly and decisively to capital market events (EPSR, 2009). Furthermore, market participants may be plagued with undue compliance costs by having to pay fees in up to 13 separate jurisdictions.

Some progress has been made in harmonising capital markets regulation across provinces, despite the lack of a national regulator. British Columbia, New Brunswick, Ontario, Prince Edward Island, Saskatchewan, Yukon and the federal government have agreed to establish a cooperative regulator (Cooperative Capital Markets Regulatory System) to harmonise and modernise capital markets regulation in their jurisdictions. Administration of the resulting provincial and federal acts will be delegated to a common regulator, the Capital Markets Regulatory Authority. The federal government should continue to work with the remaining provinces and territories to encourage broader participation in this system to foster more efficient securities regulation, while maintaining a strong regional regulatory presence throughout Canada.

Corporate registration

Canada also has a decentralised corporate registration and reporting regime, and the different approaches taken by the provinces increase business costs, particularly for SMEs. Despite commitments made in the AIT (Annex 606) to adopt a Standard Statement of Registration, the sharing of information among provinces (by the home province) and the simplification of annual filings, further nationwide progress in this direction would be beneficial. Harmonising and streamlining reporting requirements and creating a one-stop shop for registration could facilitate business expansion and increase competitiveness by reducing costs. While the direct costs of the current fragmented system are probably

moderate, in the low-to-mid tens of millions of Canadian dollars annually (Schwanen and Chatur, 2014), these requirements may add additional barriers for small businesses looking to expand across borders, for which these costs may be more significant as a share of revenues, thereby lowering productivity through reduced business scale. The scaling up of small businesses is a key challenge in Canada and is covered in more detail in Chapter 2.

Despite the currently fragmented system, progress has been made to streamline requirements across some regions. Nova Scotia and New Brunswick moved the furthest in this direction in 1994 by agreeing to mutual recognition, thereby requiring corporations to register only in one province to conduct business in the other. Through the 2013 amendments to the NWPTA these frictions have also been reduced between British Columbia, Alberta and Saskatchewan by providing companies registering in one of these provinces assistance in registering in partner provinces, and annual reports and registration fees need to be filed and paid in only one province. In 2004 Canada also implemented a Joint Online Registration System, which is recognised in Newfoundland, Nova Scotia, Ontario and Saskatchewan, which provides federally incorporated companies registering in one of these provinces technical assistance to register in the others. While these initiatives have moved part way to achieving the original AIT goals, they remain fragmented regionally, and some suffer from a lack of information sharing (Nova Scotia and New Brunswick agreement) and of harmonisation of information requirements (NWPTA and the Joint Online Registration System).

Canada is also lagging best international practice in this area. Australia and Switzerland, for instance, have moved to harmonise or integrate their business registries to improve the functioning of their internal markets. In Australia, for instance, a national registrar (the Australian Business Register) has existed since 2012, while in Switzerland registration is required in only one canton to do business in others. To improve competitiveness and reduce administrative costs, provincial governments should harmonise information requirements and sharing, implement the mutual recognition of annual reporting requirements, as envisioned in the AIT, and investigate the costs and benefits of implementing a national registry.

Recommendations to reduce interprovincial barriers to trade and labour mobility

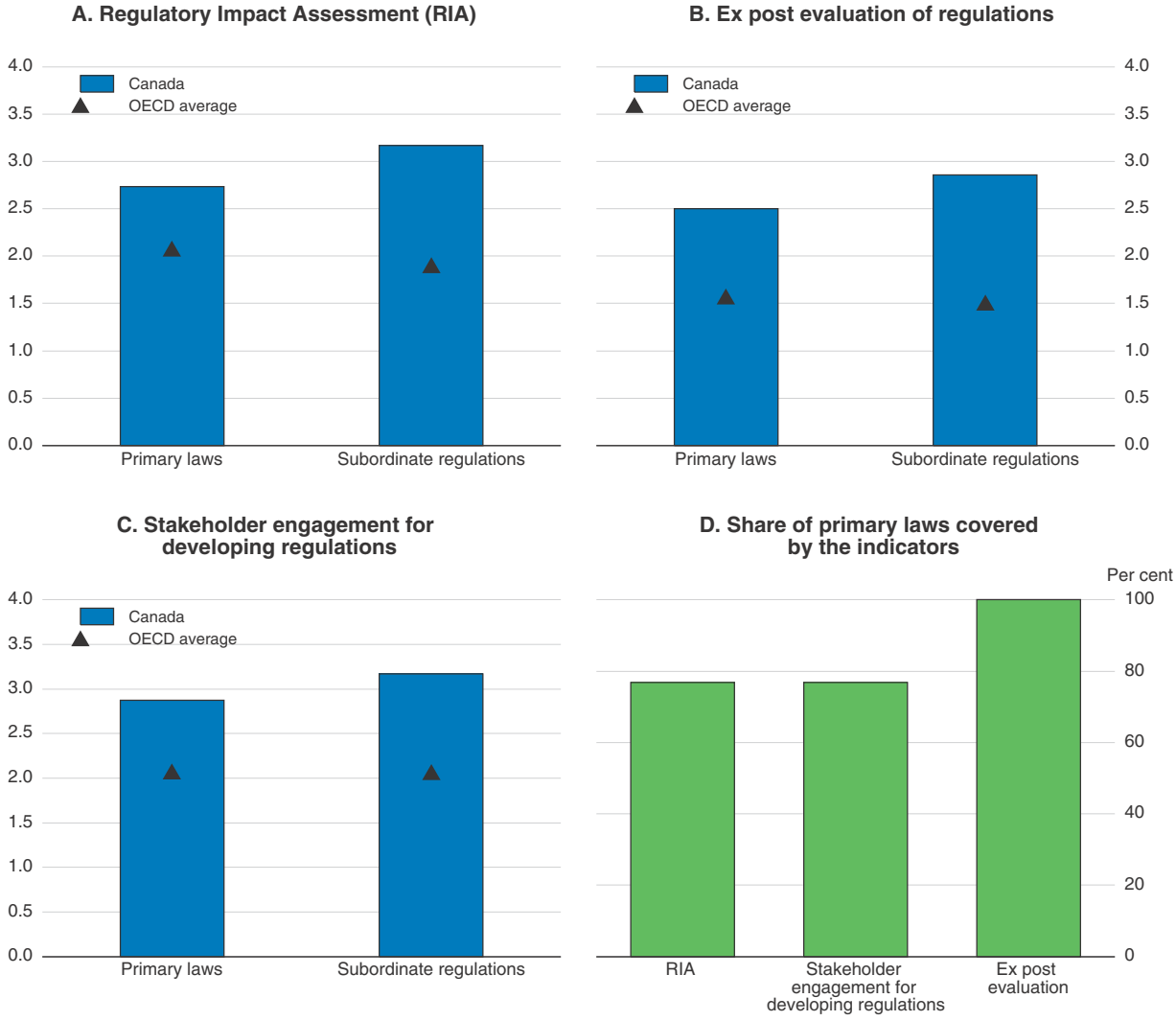
- Broaden the AIT's coverage as much as possible, including by adopting a negative-list approach to trade negotiation (from the current positive-list approach).
- Adopt mutual recognition in the updated AIT, requiring that exceptions be evidence-based, and move towards regulatory harmonisation by establishing a national regulatory cooperation council.
- Automatically extend more favourable provisions granted to foreign countries to other provinces in the updated AIT.
- Take measures to ensure compliance with the AIT and its panel reports, including by raising monetary penalties and enabling private parties to claim damages. To ensure more timely resolution, allow private parties to launch proceedings, without first having to go through their provincial governments, and expedite dispute resolution. All decisions should be subject to judicial review.
- Abolish supply management in dairy, eggs and poultry, and liberalise alcohol trade and retailing.
- Encourage remaining provinces to join the Cooperative Capital Markets Regulatory System, while maintaining a strong regional presence throughout Canada.
- Move towards a national corporate registration system.

Regulatory and institutional measures to encourage competition

Effective regulation is essential to achieve policy objectives with respect to efficiency and economic growth. Canada remains amongst the best performers with regards to regulatory practices. It has adopted formal requirements for stakeholder engagement, *ex ante* regulatory impact assessment and *ex post* evaluation of primary laws and subordinate regulations in its policy processes and implemented them. As a result, it ranks highly in each of these domains relative to other OECD countries (OECD, 2015c; Figure 1.20).

One area where Canada could benefit is in the extension of public advocacy powers and market studies for the federal competition authorities whereby they are granted the power to require provision of relevant information in the context of conducting such studies (OECD, 2016). This would strengthen their ability to examine and publicly report on

Figure 1.20. **Indicators of regulatory policy and governance**[1]



1. The figures display the aggregated scores from all four categories giving the total composite score for each indicator. The maximum score for each aggregated indicator is four.

Source: OECD (2015), *Regulatory Policy Outlook*, *www.oecd.org/regreform/regulatory-policy/*.

StatLink http://dx.doi.org/10.1787/888933371200

government policy, regulations or market participant behaviour that may inhibit competition. Many OECD countries have benefited from having such prerogatives, which can enhance transparency and openness in the policymaking process, enabling a more informed public discussion of a particular issue or industry's performance. They also provide governments at all levels with an understanding of how their current or proposed regulations may impact industry structure, consumers and, in the long term, economic growth. These powers are more effective when supplemented by a requirement for government entities subject to recommendations to provide a written response within a fixed time period, as is done in the United Kingdom.

Recommendations for institutional measures to enhance 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.

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Chapter 2

Boosting productivity through greater Small Business Dynamism

Small business dynamism is a feature of an SME sector that contributes to overall productivity growth, not an end in itself. Such dynamism increases productivity growth by reallocating resources towards more productive firms and strengthening the diffusion of new technologies. Small business dynamism in Canada has declined in recent decades, as in other OECD countries, but overall it remains in the middle of the range, with some indicators above average and others below. Framework economic policies are generally supportive of small business dynamism, especially labour regulation, but there is scope to reduce regulatory barriers to product market competition. Canada has many programmes to support small businesses. Some of the largest programmes are not well focused on reducing market failures. Focusing support more on reducing clear market failures would increase the contribution of these programmes to productivity growth and living standards. This would likely entail redirecting support from small businesses in general to start-ups and young firms with innovative projects, which would boost small business dynamism.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Small business dynamism is not an end in itself but rather a feature of an SME sector that contributes significantly to overall productivity growth. Dynamism can be reflected in high rates of firm creation, which also tends to be associated with high exit rates, easy scaling up and a lower share of firms that remain small as they grow old than in a less dynamic sector. This process contributes to productivity growth by introducing new ideas, practices and technologies to the market place and attracting more resources if successful and releasing resources for other uses otherwise.

Indicators of small business dynamism have fallen in Canada, as in many other countries, but mostly remain in the middle of the OECD range. Start-up rates, in particular, have declined to relatively low levels by international comparison. On the other hand, start-ups scale up rapidly over the first few years, although they tend to stagnate subsequently. Job reallocation rates (the sum of job creation and destruction by start-ups, exiting firms and continuing firms as a share of employment), which are an indicator of resource reallocation, have declined. At the extensive margin (i.e. from firm creation and exit) they are lower than in the United States but higher at the intensive margin (i.e.,from continuing firms), pointing to Canada having more pervasive rigidities than the United States in product markets but not in labour markets.

This chapter discusses policies for increasing the contribution of the small business sector to productivity growth. It begins by describing what small business dynamism is, why it is important, how it has developed in Canada, and how it compares with that in other countries. A discussion of the general policy framework follows, identifying a few areas where reforms could enhance small business dynamism. The remainder of the chapter reviews existing small business programmes and develops recommendations for increasing their contribution to productivity, including by focusing more on overcoming market failures and supporting young, dynamic firms.

Small business dynamism has declined, weakening its contribution to productivity growth

Small business dynamism – what it is and why it is important

The dynamism of the small business sector is indicated by rates of firm creation and exit and the extent to which small firms grow into large ones. A dynamic small business sector has many start-ups and young firms that grow rapidly if successful. High start-up rates can reflect intense entrepreneurial activity, which entails experimentation with innovative products, processes and organisational arrangements to test their market value. As many projects prove not to be viable, high start-up rates tend to be associated with high exit rates (see below). Such exits release resources for further experimentation and for rapid growth of successful firms (Baldwin and Gu, 2006).

A recent OECD study finds that an increase in the share of young firms (i.e. firms younger than six years) relative to older firms (i.e. firms 12 years and older) is associated with higher multifactor productivity (MFP) growth and that this effect is mainly attributable to start-ups (i.e. firms up to two years old) (OECD, 2015a). Moreover, the study finds that an increase in the share of employment in small firms that are no longer young (i.e. firms older than five years with less than 50 employees) relative to larger firms in the same age category (i.e. firms older than five years with 50 or more), which indicates an absence of up-or-out dynamics, is associated with lower MFP growth.

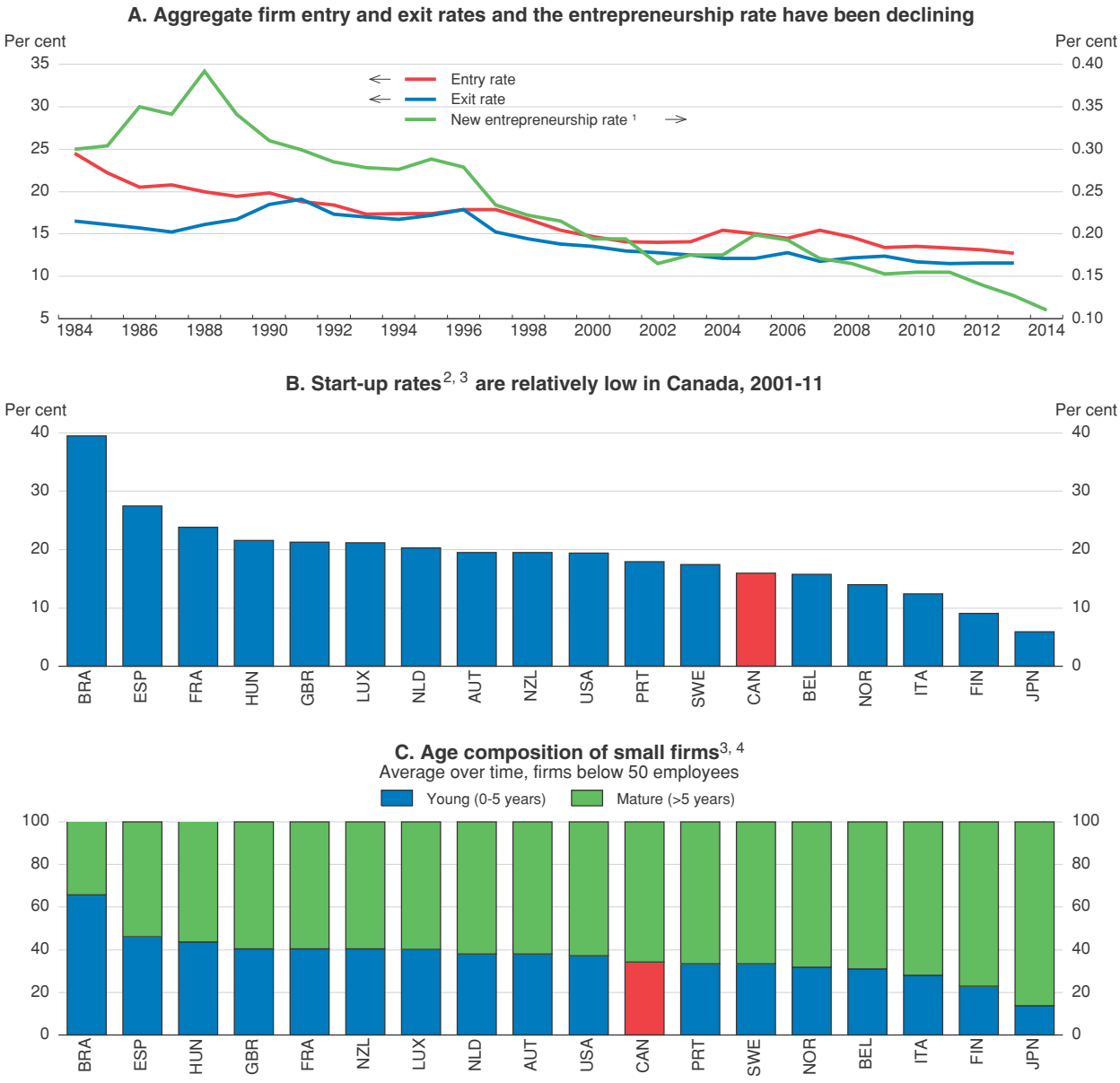
Start-ups, which are more likely to file radical patents than older firms, are often the first link in a chain leading to higher productivity of firms at the global frontier (Andrews et al., 2014; Henderson, 1993; Baumol, 2002). To reach the global productivity frontier, start-ups need to be able to scale up quickly.

Small business dynamism has declined but remains in the middle of the OECD range

The firm entry rate (the number of entrants as a share of the total number of firms) in the Canadian business sector has been trending down since the early 1980s (Figure 2.1, Panel A), as has occurred in other countries (Criscuolo et al., 2014). The exit rate has also fallen since the mid-1990s. The trend decline in entry rates has been reflected in falling new entrepreneurship rates (the number of new self-employed workers who hire employees as a fraction of the working-age population). Cao et al. (2015) find that the decline in entry and exit rates does not reflect sectoral shifts in the economy and that population ageing accounts for only a small share (20%) of the fall in entrepreneurship rates since 2000 (older working-age groups have lower entrepreneurship rates). It is not clear why creating a new firm has become less attractive relative to the alternatives, notably working as an employee. The start-up rate in Canada since the turn of the century appears to be relatively low by international comparison (Panel B). However, these comparisons of small business dynamism indicators and those that follow are subject to considerable uncertainty owing to differences in data collection methodologies. In particular, in contrast to other countries in the sample, data for Canada exclude spurious start-ups and exits resulting from reorganisations or mergers and acquisitions, resulting in Canada having lower rates relative to other countries than it would if measured on the same basis.

The contribution of start-ups to net employment growth appears to be smaller in Canada than in most other countries with data (Figure 2.2); while these data are for all start-ups, Calvino et al. (2015) demonstrate that similar results are obtained when considering only small-firm start-ups (most start-ups are in fact small). Decomposing this contribution reveals that the low value for Canada mainly reflects a low start-up ratio and small average size at entry (Figure 2.3). Post-entry growth over the first three years, on the other hand, is the highest among countries with data, pointing to strong dynamics. However, there appears to be little growth in employment on average over the next four years (Calvino et al., 2016). Again, these comparisons are uncertain because Canadian data have been cleaned of reorganisations and mergers and acquisitions. This adjustment tends to reduce Canada's start-up ratio, as noted above, and average firm size at entry but to increase the measured post-entry growth rate.

Figure 2.1. **Small business dynamism has declined but remains in the middle of the range**



1. The number of new self-employed workers who hire employees as a fraction of the working-age population.
2. Start-ups are defined as those firms which are 0 to 2 years old. Start-up rates are defined as the fraction of start-ups among all firms, averaged across the indicated period. For more details, see Figure 7 in Criscuolo et al. (2014).
3. Data are preliminary. Owing to methodological differences, figures may deviate from officially published national statistics. Data for Canada refer only to organic employment changes and abstract from merger and acquisition activities.
4. Share of firms by different age groups in the total number of micro and small firms (below 50 employees) in each economy on average over 2001-11 (or available years). For more details, see Figure 6 in Criscuolo et al. (2014).

Source: S. Cao et al. (2015), "Trends in Firm Entry and New Entrepreneurship in Canada", *Bank of Canada Discussion Paper*, No. 2015-11, October, Charts 1 and 3; C. Criscuolo, P.N. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", *OECD Science, Technology and Industry Policy Papers*, No. 14, OECD Publishing, *http://dx.doi.org/10.1787/5jz417hj6hg6-en*.

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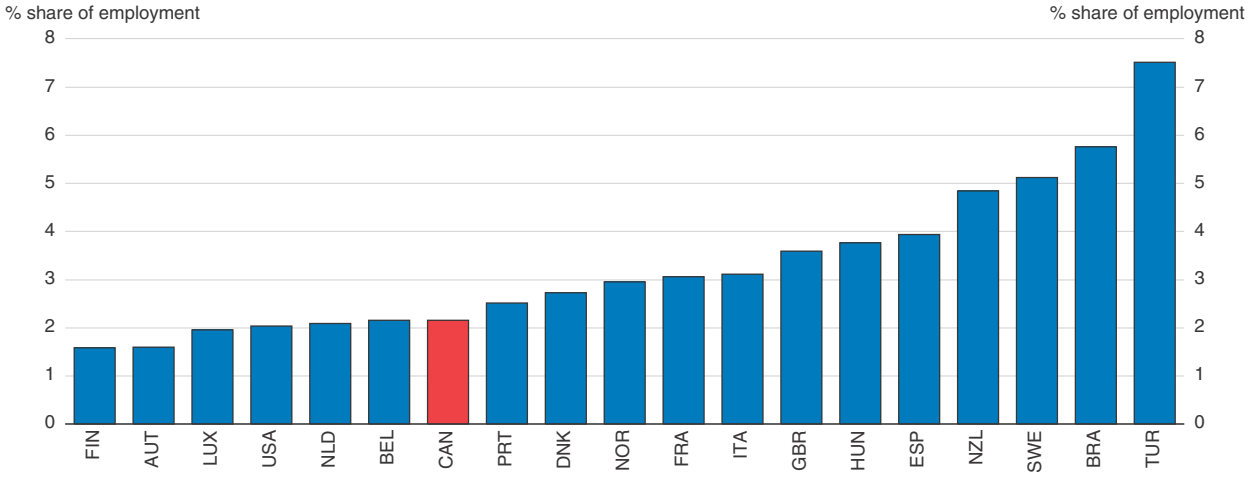
Figure 2.2. **Net job variation by surviving entrants over total employment**[1, 2]



1. The graph illustrates the ratio between employment at time t + 3 of surviving entrants and overall country employment at time t. Figures report the average for different time periods t = 2001, 2004 and 2007, conditional on their availability. Sectors covered are: manufacturing, construction, and non-financial business services.
2. See note 3 in Figure 2.1.

Source: Calvino, F., C. Criscuolo and C. Menon (2015), "Cross-country Evidence on Start-Up Dynamics", *OECD Science, Technology and Industry Working Papers*, 2015/06, Paris, Figure 2, *http://dx.doi.org/10.1787/5jrxtkb9mxtb-en*.

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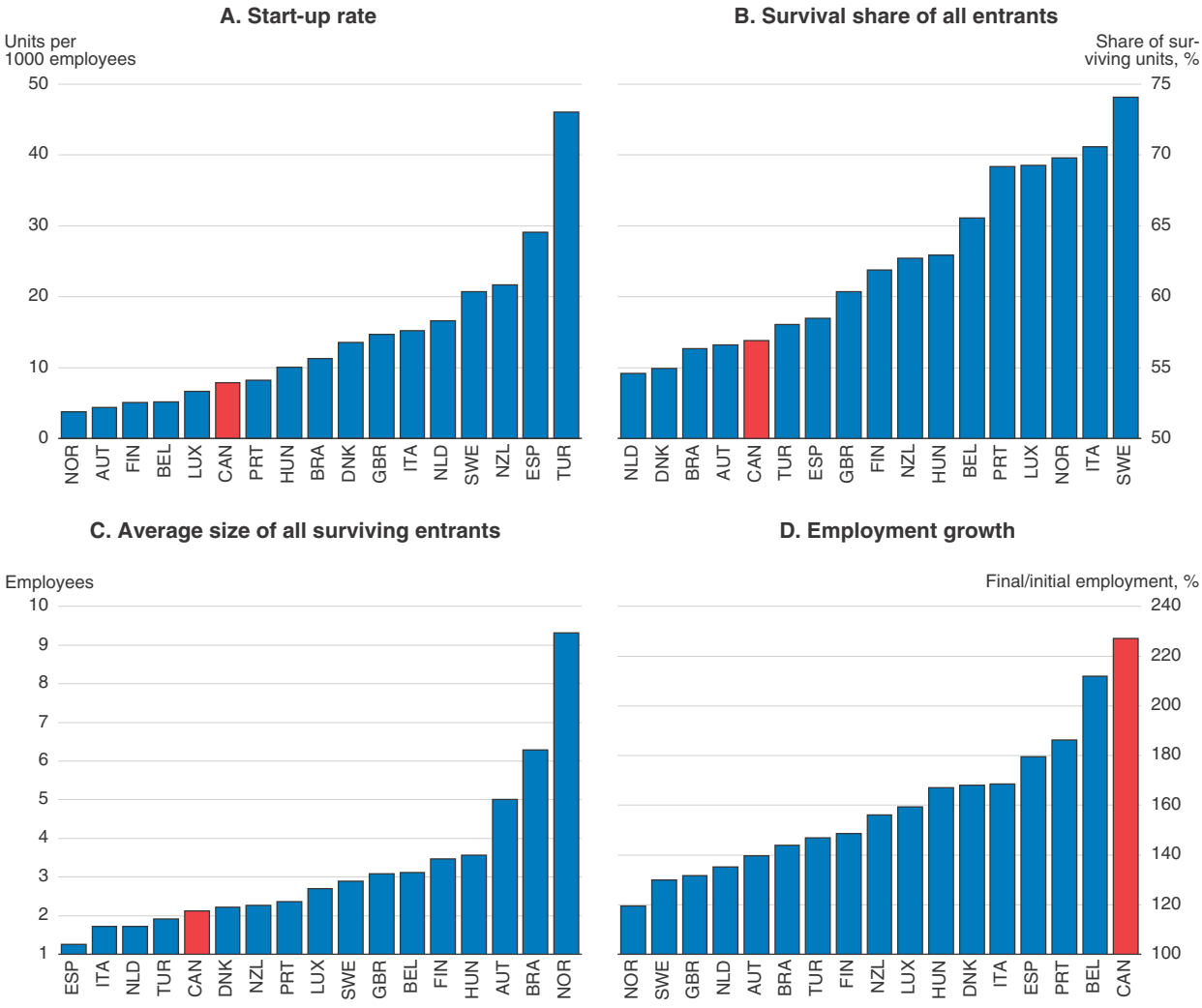
The relatively low share of smaller (below 50 employees) firms that are younger (less than five years old) (Figure 2.1, Panel C) points to weaker small business dynamism in Canada than in many other countries, as younger firms tend to be more dynamic than older firms, although again the difference in data methodologies reduces the share of younger firms and increases the share of older firms in Canada compared with other countries. Younger firms in general account for larger shares of job creation and destruction than their share of employment, and their shares of job creation are considerably greater than their share of job destruction; indeed, contrary to popular belief, it is younger firms, especially start-ups, that contribute disproportionately to net job creation, not small firms once firm age is controlled for (Haltiwange et al., 2013). In Canada, younger SMEs (up to 249 employees) account for 38% of job creation, 21% of job destruction and only 14% of employment (Figure 2.4). These contributions to job creation and destruction are relatively small by international standards, mainly reflecting the relatively low shares of SME employment and of SMEs that are young. From the viewpoint of productivity, the first aspect is an advantage, as large firms are more productive than SMEs (Baldwin et al. (2014) find that in Canada the labour productivity of firms with fewer than 500 employees was only 46% that of larger firms in 2008), but the second is a drawback, as younger SMEs contribute more to resource reallocation from less to more productive firms than older SMEs.

Figure 2.3. **Decomposition of net job creation by surviving entrants relative to total employment**[1, 2]



1. For details on these four elements of the growth decomposition and the periods covered, see notes in Figure 1 of *Source*.
2. See note 3 in Figure 2.1.

Source: Calvino, F., C. Criscuolo and C. Menon (2016), "No Country for Young Firms?: Start-up Dynamics and National Policies", *OECD Science, Technology and Industry Policy Papers*, No. 29, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm22p40c8mw-en*.

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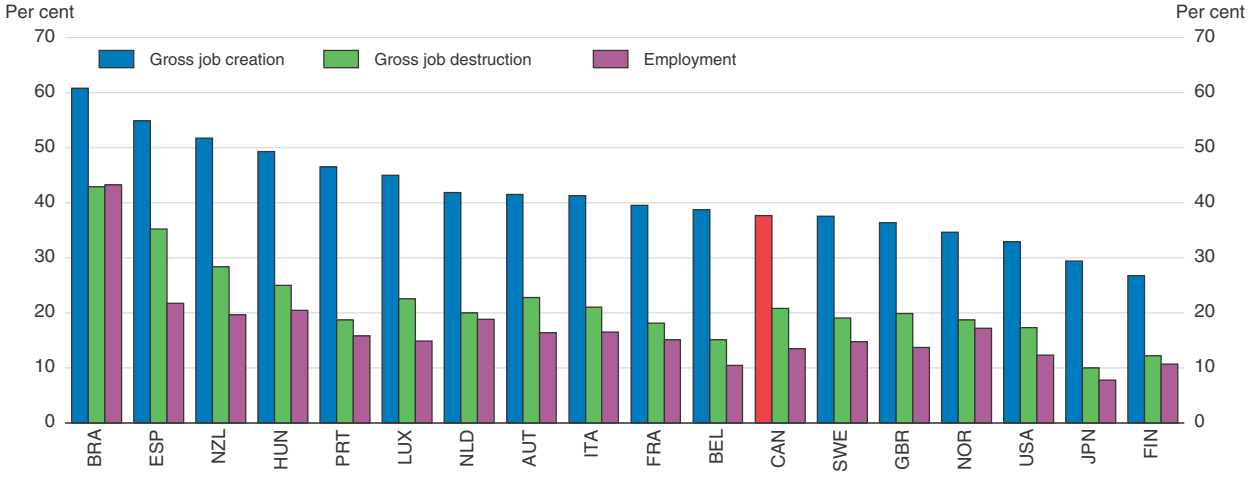
As in other countries, few microenterprise start-ups in Canada grow beyond microenterprise status (defined in Criscuolo et al. (2014) as 1-9 employees), but those that do account for a disproportionate share of employment growth (Figure 2.5). Based on longitudinal data following three cohorts (2001, 2004 and 2007) of microenterprise start-ups, Criscuolo et al. (2014) find that the share that grew beyond that status after three years in Canada was 5% on average, the median value for the countries included in the database. This group accounted for 42% of microenterprise start-up net job creation, a higher-than-median share (38%).

Figure 2.4. **Young SMEs' share of total employment, gross job destruction and gross job creation**[1, 2]

Age 0-5 years, up to 249 employees, average 2001-11



1. For details, see notes in Figure 17of *Source*.
2. See note 3 in Figure 2.1.

Source: C. Criscuolo, P.N. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", *OECD Science, Technology and Industry Policy Papers*, No. 14, OECD Publishing, *http://dx.doi.org/10.1787/5jz417hj6hg6-en*.

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Sectoral excess job reallocation rates (total job reallocation as share of employment in excess of employment growth in the sector concerned), which mainly reflect developments in small firms, are an indicator of the intensity of resource allocation and hence of small business dynamism. Canada's job reallocation rate (the sum of new employment created in all firms that had increasing employment plus the sum of employment destroyed in all firms that had decreasing employment) fell from 24% in 1992 to 20% in 2006 (i.e. one in five jobs in the economy was either created or destroyed in the year) (Figure 2.6, Panel A). As total employment growth rose from -3 ½ per cent in 1992 to 2 ½ per cent in 2006, the excess job allocation rate fell from around 27 ½ per cent in 1992 to around 17 ½ per cent in 2006. Based on the estimated coefficients for excess job reallocation in Cao and Leung (2010), this decline is estimated to have reduced annual rates of multifactor and labour productivity growth by 0.7% and 1.6%, respectively. It cannot be explained by a rise in the share of workers in large firms but rather mainly reflects a fall in job destruction rates (Panel B).

Controlling for firm size and temporary external factors, job reallocation rates associated with firm births and deaths are significantly lower in Canada than the United States but are higher for continuing firms (Box 2.1). These results suggest that Canada is less good at facilitating creative destruction through firm entry and exit than the United States, but that it reallocates labour amongst continuing firms efficiently. These results point to Canada having more pervasive rigidities than the United States in product markets but not in labour markets, as suggested by Balakrishnan (2008).

Figure 2.5. **Three-year survival and growth outcomes of micro start-ups**[1, 2]

1. Refers to the group of firms that have between zero and nine employees in the beginning of each period and which are 0-2 years old. Inactive firms do not report information on employment at the end of the three-year period, either because they are temporarily inactive or because they have permanently exited. Sectors covered are: manufacturing, construction non-financial business services. Average of the three-year periods (2001-04; 2004-07; and 2007-10). For more details, see *Source*.
2. See note 3 in Figure 2.1.

Source: C. Criscuolo, P.N. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", *OECD Science, Technology and Industry Policy Papers*, No. 14, OECD Publishing, *http://dx.doi.org/10.1787/5jz417hj6hg6-en*.

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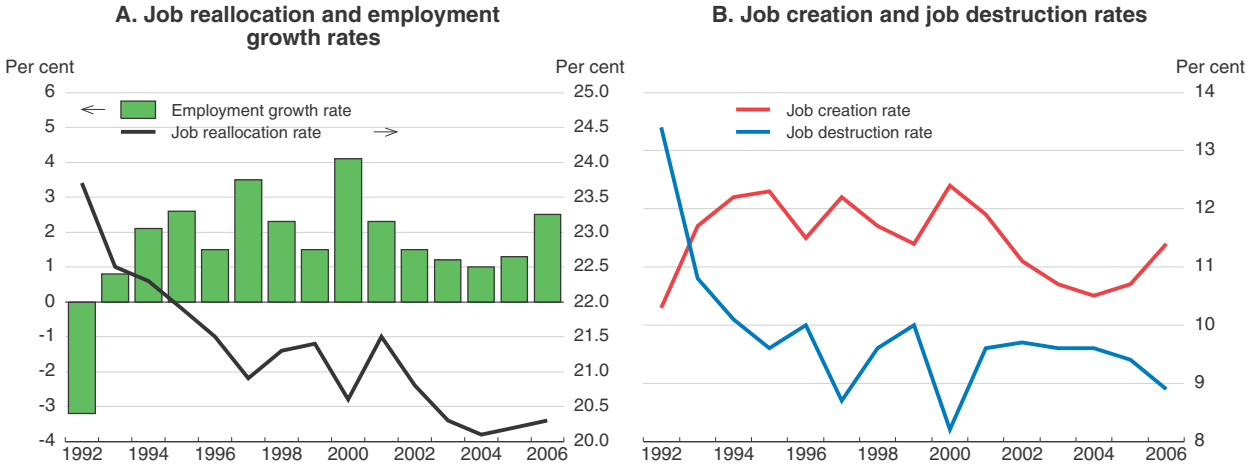
Figure 2.6. **Excess job reallocation rates have fallen owing to a fall in job destruction rates**[1]



1. Data computed using the Longitudinal Employment Analysis Program (LEAP) database constructed by Statistics Canada.
Source: S. Cao and D. Leung (2010), "Labour Reallocation, Relative Prices and Productivity", *Bank of Canada Working Paper*, No. 2010-2, January, Figures 6 & 7.

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Box 2.1. **Job reallocation rates in Canada and the United States**

To isolate country- from firm-size composition effects, we re-run the (OLS) panel regressions performed by Balakrishnan (2008) that take the following form using 2001-13 data instead of 1993-2004 data:

$$sum_{i,s,t} = \beta_0 + \beta_{can} * DCAN + \sum_{s=1}^{3} \beta_s \ Size_s + \sum_{t=01}^{13} \beta_i Time_t + \ \varepsilon_{i,s,t}$$

Where $sum_{i,s,t}$ is job reallocation in country i, firm size category s and time t. DCAN is a country dummy variable (DCAN = 1 for Canada, i.e. the benchmark country is the United States), $Size_s$ represents a set of three size dummies (where the categories are firms with 1-19, 20-99 and 100-499 employees and the benchmark is firms with more than 500 employees), and $Time_t$ is a set of 12 time dummies (the excluded year is 2001) and $\varepsilon_{i,s,t}$ is the residual.

The results confirm that firm size is a very important determinant of job reallocation rates. Job reallocation rates decline as firm size increases in both countries, except for the job reallocation rate associated with firm births and deaths for firms with 100-499 employees, for which the rate is not significantly different from that for large firms (500 or more employees) (Table 2.1). These findings concord with the results of other studies that have also found firm size to be a very important determinant of job reallocation rates (e.g. Cao and Leung, 2010; and Haltiwanger et al., 2006). The total job reallocation rate is lower in Canada than in the United States (the Canada dummy is negative and highly significant); this result differs slightly from Balakrishnan's, who also found a lower rate in Canada, but one that was only weakly significant. This reflects a lower job reallocation rate associated with firm births and deaths, confirming Balakrishnan's findings. Again, in line with his results, the job reallocation rate associated with continuing firms is higher in Canada than in the United States.

Box 2.1. **Job reallocation rates in Canada and the United States** *(cont.)*

Table 2.1. **Job reallocation**

Panel regressions across Canada and the United States,[1] 2001-13

Dependent variable		Total job reallocation rate		Job reallocation rate associated with births and deaths		Job reallocation rate associated with continuers	
		Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Country	Canada	-3.14	0.00	-3.35	0.00	0.90	0.00
Size	0-19	28.82	0.00	17.85	0.00	14.36	0.00
Size	20-99	11.39	0.00	2.53	0.01	8.47	0.00
Size	100-499	6.77	0.00	0.73	0.46	5.73	0.00
Time	2002	-1.98	0.12	-0.36	0.84	-1.59	0.02
Time	2003	-1.76	0.16	-0.64	0.72	-1.09	0.10
Time	2004	-3.51	0.01	-1.11	0.54	-2.30	0.00
Time	2005	-3.22	0.01	-1.21	0.50	-1.93	0.00
Time	2006	-2.95	0.02	-1.01	0.57	-1.93	0.00
Time	2007	-3.07	0.02	-1.35	0.45	-1.72	0.01
Time	2008	-4.11	0.00	-1.47	0.42	-2.64	0.00
Time	2009	-6.59	0.00	-2.06	0.25	-4.47	0.00
Time	2010	-6.95	0.00	-2.11	0.24	-4.73	0.00
Time	2011	-6.07	0.00	-2.06	0.25	-3.90	0.00
Time	2012	-6.74	0.00	-2.20	0.22	-4.47	0.00
Time	2013	-6.87	0.00	-2.27	0.21	-4.57	0.00
Constant		18.73	0.00	3.65	0.01	13.66	0.00
No. of Obs.		104		104		104	
R-squared		0.96		0.84		0.95	

1. Database comprises 13 years, 4 size categories and 2 countries. Benchmark for size class is above 500 employees. Benchmark country is the United States. Benchmark for time is 2001.

Source: Statistics Canada, Longitudinal Employment Analysis Program, Table 527-004; US Bureau of Labor Statistics, Business Employment Dynamics database.

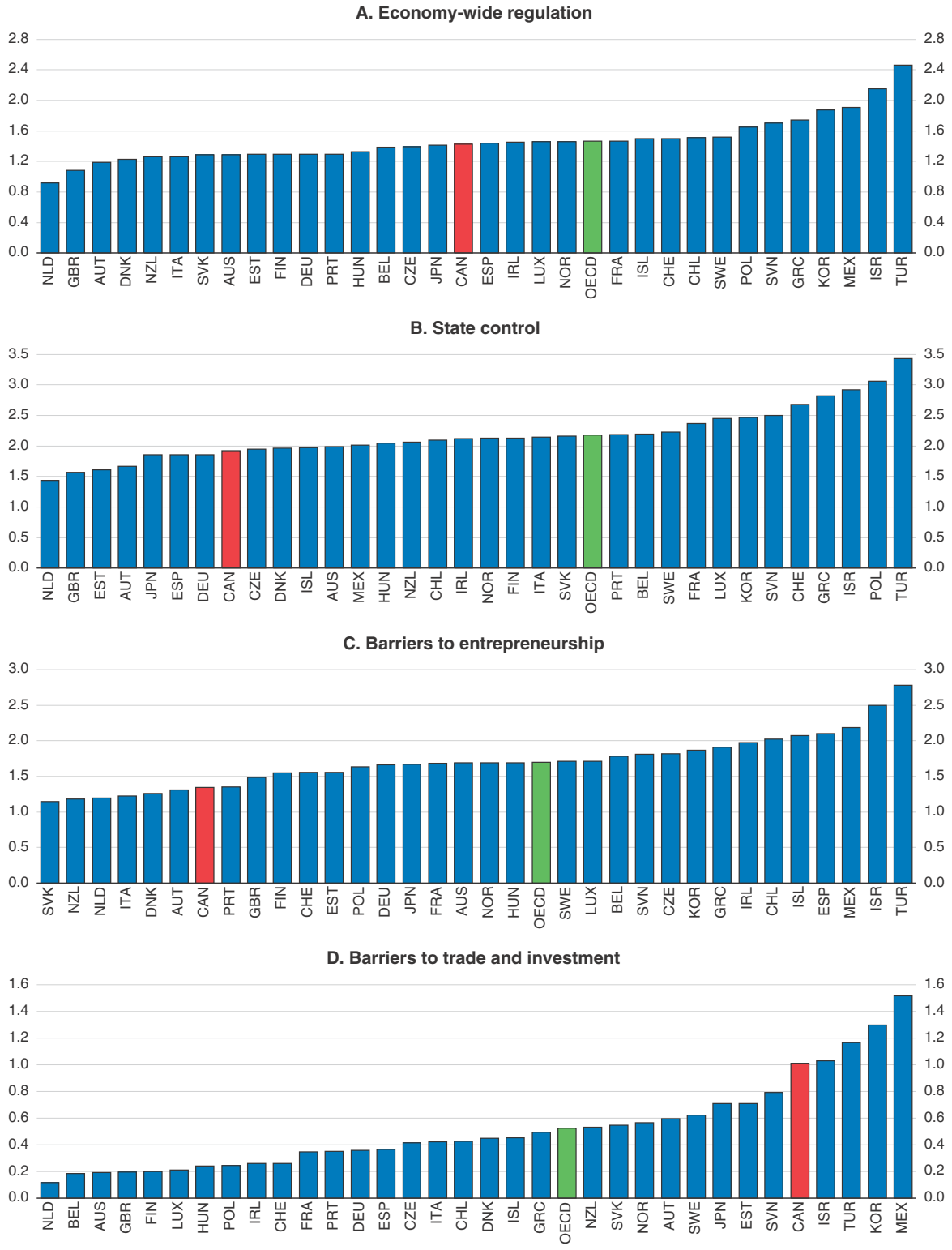
The general business environment is favourable for the development of small businesses

A variety of framework policies impinge on the extent to which resources are allocated efficiently, many of which affect small business dynamism. Using a sample of private non-farm sectors, Andrews and Cingano (2014) find evidence that more stringent product market regulations (including barriers to entry and bankruptcy legislation) and labour market regulations adversely affect static allocative efficiency (i.e. the extent to which, all else equal, it is the more productive firms in a sector that command a larger share of aggregate employment). In particular, higher barriers to firm entry and creditor-friendly bankruptcy legislation tend to disproportionately lower allocative efficiency in industries characterised by high firm turnover relative to low-turnover industries. Similarly, tighter labour market regulations disproportionately lower the efficiency of employment allocation in high-layoff and high-turnover industries. Moreover, stringent product market and labour market regulations are more harmful to allocative efficiency in more innovative sectors, which are likely to be subject to greater technological change and thus to place a higher option value on flexibility.

Product market regulation indicators (PMRs) are somewhat less restrictive in Canada than the OECD average (Figure 2.7). This reflects relatively strong performance in the "State

Figure 2.7. **Product market regulation overall is less restrictive than in most other countries**

Index scale from 0 (least restrictive) to 6 (most restrictive), 2013



Source: OECD, Product Market Regulation database.

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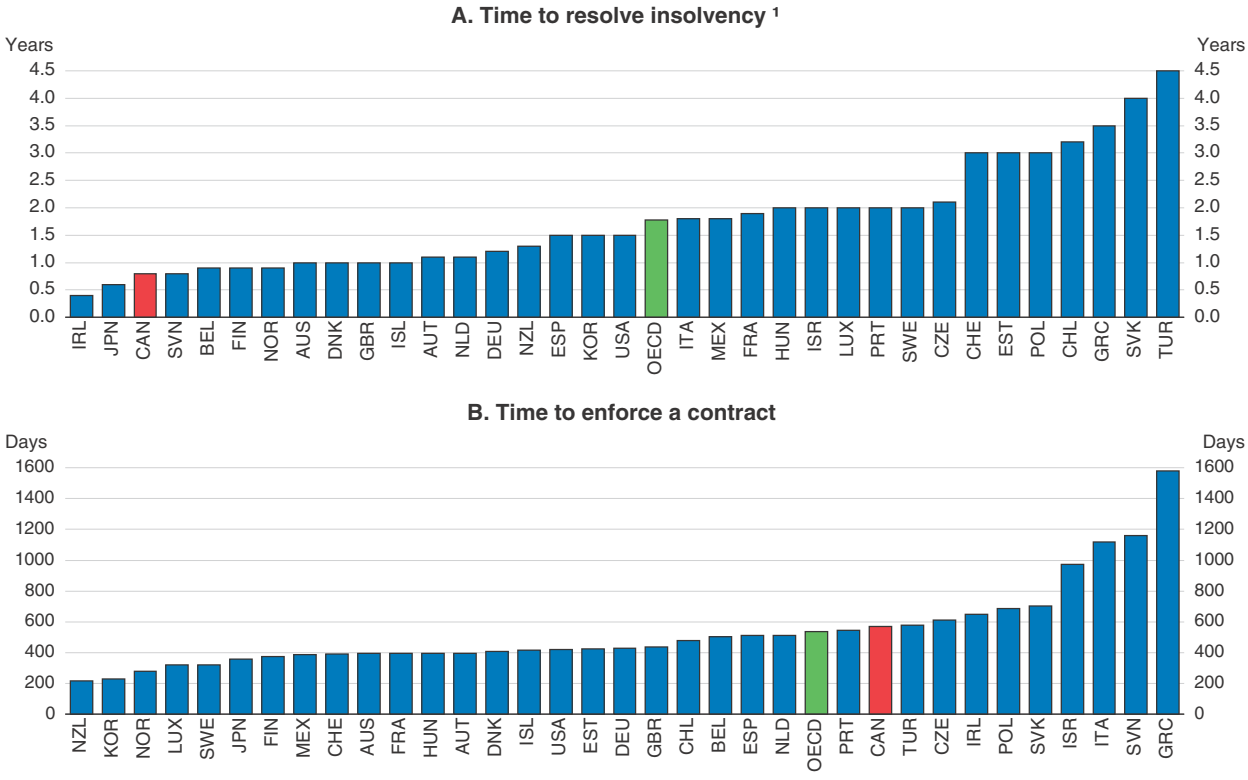
Control" and "Barriers to Entrepreneurship" categories of the OECD's PMR indicator, partially offset by relatively poor performance in "Barriers to Trade and Investment". The relatively poor performance in barriers to trade and investment reflects high barriers to foreign direct investment (FDI), which Andrews and Cingano (2014) separately found to inhibit allocative efficiency, and differential treatment of foreign suppliers in public procurement. While Canada's relatively low barriers to entrepreneurship overall augur well for business start-ups, there is room for improvement by reducing regulatory protection of incumbents, which is high by international standards. Such protection arises primarily from Canada's above-average use of anti-trust exemptions.

Timely bankruptcy procedures and strong contract enforcement are key to establishing a dynamic start-up environment (Calvino et al., 2016). In Canada, resolving insolvency only takes 0.8 years, one of the shortest times among OECD countries (Figure 2.8). By contrast, enforcing a contract takes 570 days on average, which is relatively long by international comparison.

Figure 2.8. **Timeliness of bankruptcy procedures and contract enforcement, 2015**



1. Time to resolve insolvency is the number of years from the filing for insolvency in court until the resolution of distressed assets.
Source: World Bank, Doing Business database.

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Tighter labour market regulations reduce allocative efficiency within sectors by increasing dismissal costs and thus the costs of workforce adjustments. When such costs are high, firms are less likely to hire workers, even if their marginal product exceeds the market wage, and are more likely to retain workers whose wage exceeds their productivity.

Canada has unrestrictive employment protection legislation (EPL), facilitating labour reallocation to more productive uses, especially in high-layoff and high-turnover sectors (Figure 2.9).

Figure 2.9. **Employment protection legislation in Canada is not restrictive**

Index scale from 0 (least restrictive) to 6 (most restrictive), 2013

Source: OECD, Employment Protection Legislation database.

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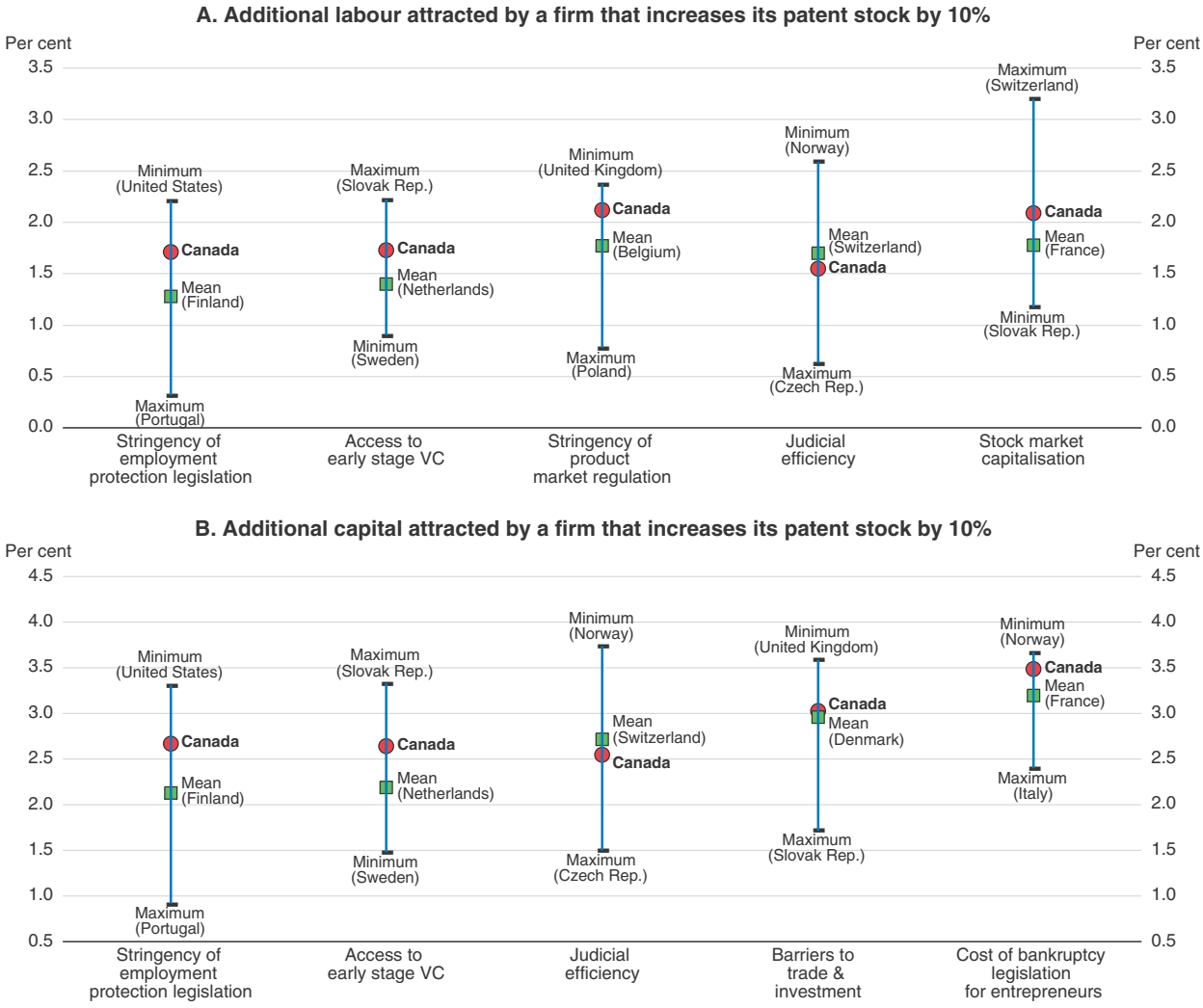
Framework policy settings in Canada, many of which are especially important for dynamic small firms, support dynamic allocative efficiency, which entails resources flowing from less productive to more productive firms over time (Haltiwanger, 2012). A recent OECD study (Andrews et al., 2014) assesses dynamic efficiency in a number of OECD countries by measuring the extent to which resources flow to more innovative firms, where patenting is used as a proxy for innovation. They find that firms that patent more do attract more capital and labour than others and that there are quite large differences in the elasticities of resource flows by country. A number of structural (mostly policy) variables influence the degree to which more innovative firms attract resources (Figure 2.10). Based on the estimated coefficients for these policies, the authors estimate the extent to which such flows could be increased by moving from the least favourable to the most favourable setting found in the country sample. For example, reducing the stringency of EPL from the highest value (in Portugal) to the lowest value (in the United States) would increase by almost seven times the amount of additional labour attracted to a firm that increases its patent stock by 10%. Canada has policy settings at least as good as the average of the

Figure 2.10. **Framework policies and resource flows to patenting firms, 2003-10**

Estimated impact of various policies on the responsiveness of the firm employment/investment to patenting[1]



1. The chart shows that the sensitivity of firm employment and capital to changes in the patent stock varies according to the policy and institutional environment. To calculate the policy effects, coefficient estimates from Table 8 in the *Source* are combined with the average values of the policy indicators for each country over the sample period. The label "Minimum" ("Maximum") denotes the country with the lowest (highest) average value for the given policy indicator over the sample period.

Source: D. Andrews, C. Criscuolo and C. Menon (2014), "Do Resources Flow to Patenting Firms?: Cross-Country Evidence from Firm Level Data", *OECD Economics Department Working Papers*, No. 1127, OECD Publishing, Figure 4 updated with data for Canada.

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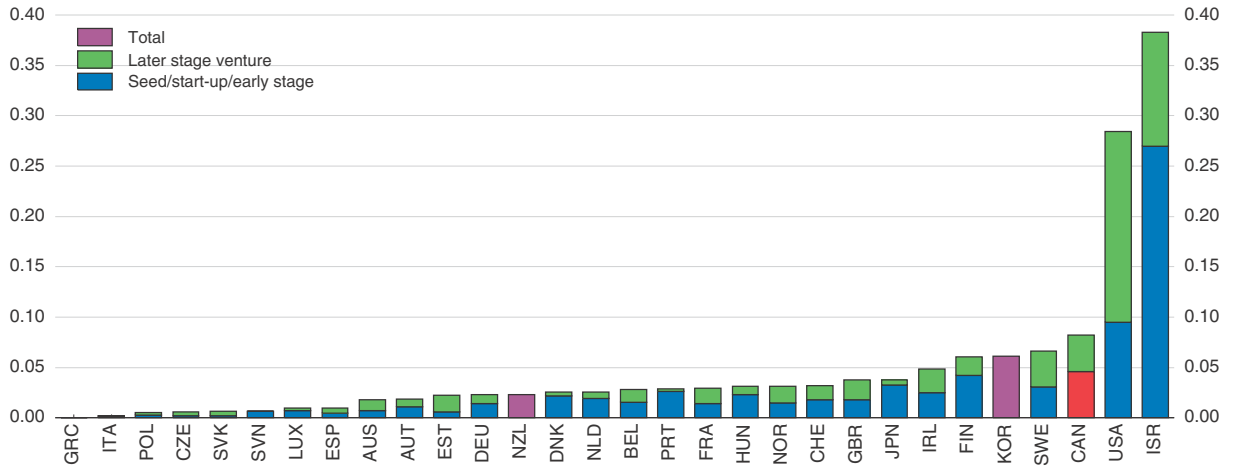
countries included in the study in all areas – access to early-stage venture capital was below average in 2005, the year included in the study, but was third highest in the OECD in 2014, albeit far below the leading countries (Figure 2.11).

Figure 2.11. **Venture capital investments are relatively high**

As a percentage of GDP, 2014 or latest available year



Source: OECD (2015), *Entrepreneurship at a Glance 2015*, Figure 7.1.

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Focusing SME programmes more on clear market failures

Canadian governments operate a number of programmes to support small businesses. At the federal level, the main programmes are aimed at facilitating small business financing, supporting research and development (R&D) and innovation, and encouraging entrepreneurship (Table 2.2). Most of the estimated fiscal cost of these programmes at the federal level is attributable to preferential tax arrangements, the most important of which are the reduced income tax rate (relative to the standard corporate tax rate) for small, Canadian-controlled private corporations (CCPCs) (known as the Small Business Deduction (SBD) and the enhanced credits for SMEs under the Scientific Research and Experimental Development (SR&ED) tax credit programme. Provincial governments enrich both of these programmes.

As noted above, small business dynamism is not an end in itself but rather an indication that the SME sector is functioning in a way that contributes to overall productivity growth. Insofar as the objective of public policy is to increase living standards by facilitating higher productivity, small business programmes should address clear market failures efficiently (so that the marginal costs of correcting the market failure do not exceed the marginal benefits). In many cases, programmes that succeed in doing so will also increase small business dynamism. A review of the market failures that might warrant small business programmes from an economic point of view points to programmes that differ from some Canadian programmes, suggesting that there is scope to re-orient these programmes to address market failures more efficiently.

Financing programmes

The economics literature indicates that capital-market failures may result in SME financing being too high, too low or for the wrong projects (Box 2.2; Table 2.3). Results from economic models depend on the assumptions made. For example, Boadway and Keen (2006) show that with risk-neutral agents and only debt financing, asymmetric information (entrepreneurs and lenders each know less about the other party's true characteristics than

Table 2.2. **Federal tax and spending programmes that support small business and entrepreneurship[1], 2013[2]**

Policy	Description	Type of Support	Cost (CAD Million)
Financing Programmes			**2 836.6**
Preferential tax rate for small companies (Small Business Deduction)	Low rate of income tax on up to CAD 500 000 of active business income; income limit reduced to zero as taxable capital rises from CAD 10 to CAD 15 m.	SB	3 065.0
Small Business Financing (Loan guarantee programme)	Government pays 85% of loan losses, capped at about 12% of value of portfolio. Fees cover about 70% of programme costs.	SB	59.2
Business Development Bank of Canada (BDC)			-432.6
	Financing-direct provision of non-investment grade loans	*SB*	*-433.8*
	Subordinate financing-direct supply of higher risk instruments	*E*	*-23.3*
	Venture capital programme	*E*	*13.4*
	Consulting – below-cost provision of business advice	*E*	*16.9*
	Securitisation-promote asset-based financing by small financial companies	*SB*	*-5.8*
Labour-sponsored venture capital corporations (LSVCCs) tax credit	15% tax credit on up to CAD 5 000 investment in LSVCCs.	E	145.0
Other programmes targeted at small business			**409.6**
Hiring Credit for small business	Reduction in employment insurance premiums	SB	225.0
Spending programmes supporting small business	Regional development	SB	177.4
	Youth employment strategy	SB	5.1
	Community futures programme	SB	2.1
Support for R&D and innovation			**1 522.3**
Enhanced SR&ED Tax Credit	Higher refundable tax credit for R&D by small firms (35% vs.20%)	SB	1 330.0
Industrial Research Assistance Program	Subsidies and free advice for undertaking R&D	E	168.1
Digital Technology Adoption Program (since expired)	Subsidies and free advice for firms adopting digital technologies	E	24.2
Spending programmes supporting entrepreneurship	Canadian Youth Business Foundation, Women's Enterprise Initiative (now called Futurpreneur Canada)	E	**14.9**
Non-targeted programmes supporting entrepreneurship			**620.0**
Lifetime Capital Gains Exemption	Up to CAD 750 000 capital gains tax exemption on disposition of shares in Canadian-controlled private corporations.	E	580.0
Deduction of Allowable Business Investment Losses	Capital losses deductible from ordinary income when they exceed realised capital gains.	E	35.0
Rollover of investments	Sales of small business shares do not trigger a capital gain if the proceeds are re-invested in another small business.	E	5.0
Total Support			**5 403.4**
Entrepreneurship (% of total support)			18.1%
Small business (% of total support)			81.9%

1. Excluding agriculture and fishing.
2. Fiscal year 2013-14 for spending programmes. Legend: SB Small Business; E Entrepreneurship

Source: J. Lester (2016), "Policy Interventions Favouring Small Business: Rationales, Results and Recommendations", forthcoming; Department of Finance (2016), *Report on Federal Tax Expenditures – Concepts, Estimates and Evaluations*.

the other party) results in too little financing of projects with low returns if successful and a high probability of success but too much financing of projects with the opposite characteristics (because entrepreneurs do not take into account the social costs from the relatively high chance that the loan will not be repaid). While no clear case for subsidising SME financing in general emerges, asymmetric information is more likely to result in underinvestment in young firms with innovative projects. First-time entrepreneurs, by definition, do not have a track record that will help secure financing and if the proposed

Table 2.3. **Rationales for government intervention to support innovative entrepreneurs**

Issue	Description	Impact	Impact on Entrepreneurs[1]
Financial market failures			
Adverse selection	Quality of projects/entrepreneurs difficult to determine *ex ante*.	Risk-neutral agents: overinvestment in innovative projects most likely outcome.	Favourable
		Risk-averse entrepreneurs: underinvestment in start-ups.	Unfavourable
Moral hazard	Acting in self-interest undermines efficiency.	Entrepreneurs undersupply effort and capitalists undersupply advice.	Unfavourable
Externalities			
R&D / Process innovation	Knowledge spillovers.	All firms underinvest.	Neutral
	Higher consumer surplus from lower costs.	All firms underinvest.	Neutral
	Destruction of incumbents' rents.	All firms overinvest; larger impact for start-ups.	Favourable
	"Innovation contests".	Dissipation of potential rents. Entry of new firms will occur too soon.	Favourable
New products	Destruction of rents and higher consumer surplus are ignored.	High correlation of entry and new products means entrants affected most; but the impact of the offsetting influences is ambiguous.	Ambiguous
Learning by doing	Experience raises productivity; some of this knowledge may spill over to other firms.	New firms bear the cost but cannot appropriate all the benefits, so entry is too slow.	Unfavourable
Information	Entry provides a signal of profitability that benefits other firms.	New firms bear the cost but cannot appropriate all the benefits, so entry is too slow.	Unfavourable
Agglomeration or network effects	Firms benefit from lower costs by co-locating.	Entrepreneurial start-ups may have less flexibility in location choice, so may get smaller benefit from agglomeration economies.	Unfavourable
Labour market imperfections			
Adverse selection	Cannot determine quality of workers *ex ante*, so all in the pool are offered the same rate.	Marginal product of marginal employee exceeds wage rate; impact may be worse for firms hiring workers for the first time.	Unfavourable
Search externalities	Employees and employers do not capture all of the benefits of their search efforts.	Start-ups may expend more effort searching and pay higher wages.	Unfavourable
Non-financial barriers			
Incentive to innovate	Either entrants or incumbents may innovate too soon.	Entrants ignore existing rents; incumbents attempt to prevent entry. Direction of bias depends on timing and disruptiveness of innovation.	Ambiguous
Entry deterrence by incumbents	Incumbents have an incentive to overinvest in capital, advertising and patenting.	Entry will be too low. Best policy response is to tax established firms.	Unfavourable
Tax policy	Asymmetric treatment of profits and losses.	Loss-making start-ups will pay a higher effective tax rate.	Unfavourable
	Asymmetric taxation of capital gains and losses.	Discourages risk-taking.	Unfavourable
	Calendar-year taxation with progressive rates.	Higher effective tax rate on "lumpy" returns .	Unfavourable
	Profit-insensitive taxes – payroll, property taxes.	Loss-making start-ups will be at a disadvantage.	Unfavourable
	Compliance costs.	Fixed costs put start-ups at a disadvantage.	Unfavourable

1. The contents of this column are meant to indicate whether policy should encourage, discourage or be neutral relative to entrepreneurship. In many cases, the first-best policy is to correct the market failure or act on other market participants rather than directly subsidising or taxing entrepreneurial effort.

Source: J. Lester (2016), "Policy Interventions Favouring Small Business: Rationales, Results and Recommendations", forthcoming.

Box 2.2. **Capital market efficiency in the presence of asymmetric information**[1]

Adverse selection

Adverse selection arises when parties to a contract are less informed about the other party's true characteristics than he/she is and assume that they are worse than revealed. While adverse selection may cause SME financing to diverge from the socially optimal level, it is not clear whether the result is too much or too little financing. Results from economic models depend on the assumptions made. Boadway and Keen (2006) exemplifies this point. The authors develop a model that generalises the previous literature to characterise the nature of credit-market inefficiency when the distribution of projects with respect to their return if successful (R) and chance of success (p) can take any form. With risk-neutral agents, they find that there will be underinvestment in projects with low R and high p, and overinvestment in projects with high R and low p when only debt finance is available; in the former case, the relatively low R leaves the investor with too little in the good state, after payment of interest, but is enough from the social perspective given the high probability that the loan will be repaid and no monitoring costs incurred; in the latter case, projects have a return that is high enough in the good state to make the investment privately profitable but not high enough to compensate society for the relatively high chance that the loan will not be repaid and monitoring costs incurred. When only equity finance is available, they find that there is overinvestment. If entrepreneurs are offered the choice between equity and debt contracts, there is overinvestment if equity contracts are pooled and an ambiguous outcome if equity contracts are return-specific.

Braido et al. (2011) adapt the Boadway and Keen model to allow for risk-averse, wealth constrained entrepreneurs. When such entrepreneurs have access to both debt and equity financing with project pooling by outside investors, the Boadway-Keen overinvestment result (assuming risk-neutral agents) no longer holds. There is a distorted mix of projects financed and the total volume of projects financed may be higher or lower than what would occur in an efficient capital market, similar to the Boadway-Keen result for debt financing. This outcome reflects two market failures. As a result of adverse selection, some low-risk projects with negative social benefits are financed while as a result of risk-averse entrepreneurs some high-risk projects with positive social benefits are not undertaken. Using numerical analysis with plausible assumptions about the degree of risk aversion, the authors demonstrate that the net impact of the two market failures is likely to be too little investment in entrepreneurial projects. Hence, there may be a case for subsidising high-risk projects with potentially high returns, although it is not clear how such projects could be distinguished from others *ex ante*.

Boadway and Sato (1999) examine inefficiencies in financing when lenders incur costs to assess the probability of success of projects and use the results to set interest rates. To discourage entrepreneurs with lower quality projects from switching lenders, they offer a pooled interest rate on loans rather than a rate that reflects individual risk. As a result, *ex ante* evaluation costs will be recovered through higher interest rates on good quality loans, pushing them above their efficient levels. Furthermore, lenders experience a net gain by incurring monitoring costs to reduce errors in classifying projects. Assuming that it is easier to identify high quality than low quality projects, error correction will consist of shifting projects from higher to lower categories, resulting in higher interest rates on loans for lower quality projects. As the private gain to lenders will exceed the social gains, which is the sum of lenders' gains and borrowers losses, lenders have an incentive to allocate too many resources to *ex ante* assessment of project quality.

Box 2.2. **Capital market efficiency in the presence of asymmetric information** *(cont.)*

Dietz (2002) analyses adverse selection in models of equity financing that include advice provided by venture capitalists. Entrepreneurs with knowledge of the quality of their projects actively seek higher-cost venture capital financing for high-risk (low p), high return (high R) projects because they expect the advice provided will raise the net return by increasing the probability of success. Assuming that advice has a larger impact on higher risk projects than on lower risk projects, venture capitalists will also want to finance high-risk, high-return projects. High risk and the cost of providing advice drive the cost of venture capital finance well above that of "pure" (no advice) equity financing, so entrepreneurs with projects that have a probability of success above a certain threshold do not have an incentive to seek venture financing. If competition among venture capitalists reduces the cost of venture financing, the standard adverse selection problem arises. Some entrepreneurs with low-risk projects will have an incentive to switch from pure to venture equity financing because they will perceive a net benefit from higher cost financing accompanied by some advice. These lower-risk projects will not be profitable for venture capitalists. In the absence of screening, risky projects will pay too much for venture financing and less risky projects will pay too little.

Dietz highlights the fact that venture capitalists have an incentive to incur screening costs to eliminate the low-risk projects that cannot be profitably financed. Venture capitalists invest in screening until the marginal cost of screening equals the marginal benefit from raising the quality of projects financed. Venture capitalists bear all of the costs of screening but do not capture the benefit of avoiding wasteful spending by entrepreneurs on poor-quality projects. The investment in screening is therefore inefficiently low.

Moral hazard

Moral hazard entails a party to a contract behaving in an unobserved but prejudicial way to the other party after the contract has been signed. Investors wanting to protect their investment against hidden actions by entrepreneurs will structure contracts to align incentives of both parties and take an active role in managing the business. As pointed out by Elitzura and Gavious (2003), there is a "double" moral hazard problem in equity finance because both the entrepreneur and the venture capitalist contribute to the success of the project, but neither receives the full value of their contribution. As a result, the amount of business management services (advice) provided by venture capitalists is likely to be inefficiently low.

1. For a more in-depth discussion of these issues, see Lester (2016).

project is difficult to understand, the impact of asymmetric information becomes much larger. Underinvestment in such firms is all the more likely considering the innovation spill-overs that they generate.

The nature of market failures affecting young, high-growth-potential firms and hypothetical government interventions to offset them are summarised in Box 2.2 (see Technical Background Paper 1 for a more comprehensive discussion). The following tentative conclusions about the nature of such efficient government intervention can be drawn:

- While adverse selection may affect all markets, the problems are likely to be severe enough to justify intervention only for those in which innovation is crucial.

- Loan-guarantee programmes should support the less risky innovative projects that can be financed by debt. Such projects require an above-average level of screening by lenders but are not suitable for venture capital financing, because outside advice would not appreciably affect their probability of success.
- Governments should subsidise basic advice to entrepreneurs. This could enhance welfare by preventing them from wasting resources on low-quality projects or by raising the probability of success of projects that are too risky for debt or pure equity financing but not risky enough to warrant venture financing.
- Risk aversion probably results in too little investment by start-up entrepreneurs. Policies to reduce risk aversion facilitate risk-pooling and increase the supply of seed capital could be welfare enhancing.
- Knowledge spill-overs result in underinvestment in the venture capital segment, while adverse selection probably results in overinvestment. Moral hazard yields under-provision of advice by venture capitalists, so policies that raise the incentive to provide advice without increasing the supply of government venture capital are probably welfare-improving.

Some of Canada's small business financing programmes already reflect these conclusions. However, the economic rationale for others, including some of the most costly, is weak. There is scope to reform them, so that they have a more favourable effect on productivity and well-being.

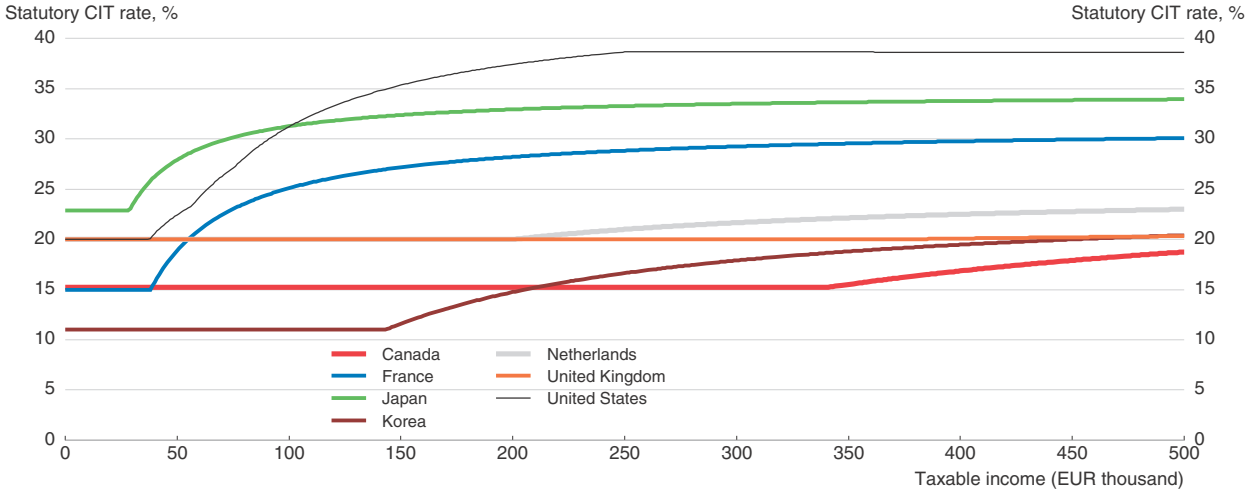
Small Business Deduction

The preferential tax rate for small companies (CCPCs) is intended to "provide small corporations with more after-tax income for reinvestment and expansion" (Finance Canada, 2010, p. 75). The federal small business deduction (SBD) entitles them to a 4.5 percentage point reduction in the general corporate income tax rate to 10.5% on the first CAD 500 000 of active business income if their "taxable capital" does not exceed CAD 10 million; business income in excess of CAD 500 000 is taxed at the standard corporate rate. Beyond the taxable capital threshold, the federal SBD is clawed back on a straight-line basis, with the eligible income limit reaching zero once capital exceeds CAD 15 million. Thus, marginal corporate tax rates on business income over the eligible income limit can exceed the standard rate over the claw-back range, if it assumed that increased income necessitates investment of taxable income. The provinces have similar arrangements, although their corporate income tax rates and thresholds vary. Taking into account both federal and provincial arrangements, the weighted average small company tax rate in 2016 is 14.7%, 12 percentage points lower than the general rate of 26.8%(includes rate changes at the provincial level announced before January 1, 2016). The new government announced in the 2016 federal budget that the further scheduled reductions in the small company rate are deferred.

Preferential tax rates for small companies are found in only 11 out of the 34 OECD member countries (12 countries had such arrangements in 2014 according to OECD (2015c), but the United Kingdom abolished its preferential rate from 1 April, 2015). Thresholds for withdrawing small company tax preferences are much lower in most other countries with such arrangements than in Canada. Small company tax rates in Canada were low by international comparison in 2014, especially over the EUR 100 000 – 500 000 income range (Figure 2.12), and in absolute terms, at least, are now lower than in 2014.

Figure 2.12. **Progression of average statutory corporate income tax rates**

Selected OECD countries, 2014



Source: OECD (2015), "Taxation of SMEs in OECD and G20 Countries", *OECD Tax Policy Studies*, No. 23, Figure 2.3.

StatLink http://dx.doi.org/10.1787/888933371280

SME owners who would be subject to the top personal income tax rate as sole proprietors or partners in their business have some opportunities to reduce their tax liabilities by incorporating. Income that is reinvested in the company increases the company's share value. When those shares are sold, only half of the capital gains on them are included in the personal income tax base. In 2014, the combined small corporate and top personal income tax rate on capital gains was 31%, 9 percentage points lower than the combined rate under the basic corporate income tax rate and 19 percentage points lower than the top marginal rate on labour income (Table 2.4); if the capital gains had fallen within the lifetime personal capital gains tax exemption limit (see below), the combined rate would have been just the small company rate of 15.2%, 35 percentage points less than the top personal rate on labour income. Incorporation also provides opportunities for reductions in tax liabilities for business owners subject to the top marginal tax rate by distributing dividends to family members (other than minor children) with lower personal income tax rates.

The proportion of taxpayers benefiting from preferential taxation of small companies rises in a non-linear fashion with personal income, reaching very high levels at the top end of the income distribution. Wolfson et al. (2014) report a rapidly rising share of taxpayers owning over 10% of the shares in at least one CCPC as taxable income rises beyond the top 5%. They calculate that taking into account CCPC income raises the income share of the top 1% of taxpayers by about one-quarter and implies that it has been increasing at a noticeably faster rate in recent years than when only incomes based on individual tax returns are considered. Bazel and Mintz (2016) estimate that almost 60% of the benefit of the SBD goes to individuals in the pre-2016 top personal income tax bracket (over CAD 150 000).

Preferential small business tax schemes result in steeper increases in marginal effective tax rates on investment as firms grow beyond the thresholds for the preferences, potentially inhibiting growth. Using 2010 values for the standard corporate tax rate, the preferential small company rate, dividend taxes, capital gains taxes and personal income

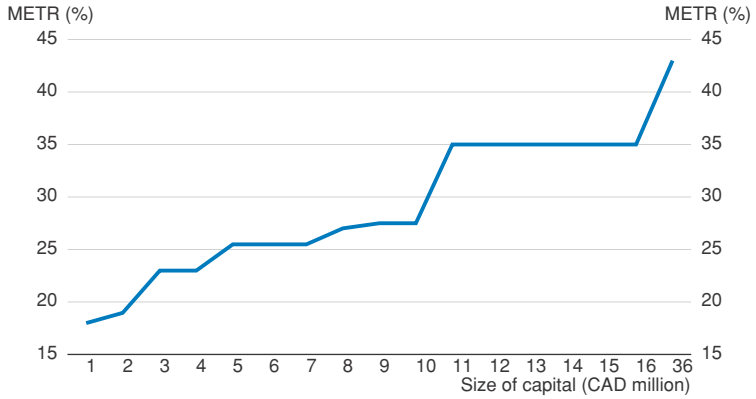
Table 2.4. **Labour tax rate, employee SSCs[1] and combined statutory rates on dividends under basic and small business taxation, 2014**

	Top marginal rate on labour		Combined corporate and personal rates on dividends		Combined corporate and personal rates on capital gains	
	Excl. SSCs (%)	Employee SSC differential (% points)	Combined rates under basic CIT rates (%)	Reduction in combined rates due to small business CIT rates (% points)	Combined rates under basic CIT rates (%)	Reduction in combined rates due to small business CIT rates (% points)
Australia	47		47		42	
Austria	50		44		39	
Belgium	45	14	51	-7	34	-9
Canada	50		51	-2	40	-9
Chile	40		40		21	
Czech Republic	15	11	31		19	
Denmark	56		56		48	
Estonia	21	2	21		33	
Finland	49	8	42		39	
France	54	1	64	-10	54	-14
Germany	47		49		44	
Greece	46		33		26	
Hungary	16	46	32	-8	19	-9
Iceland	44		36		32	
Ireland	51	4	55		44	
Israel	50		49		38	
Italy	48		46		42	
Japan	51	0	50	-11	42	-13
Korea	39	4	51	-9	24	-13
Luxembourg	44	1	43	-1	29	-1
Mexico	35	0.3	42		30	
Netherlands	50	3	44	-4	39	-4
New Zealand	33		33		28	
Norway	39	8	47		37	
Poland	21	18	34		31	
Portugal	50	11	51		44	
Slovak Republic	22	13	33		33	
Slovenia	39	22	38		20	
Spain	52		49	-4	44	-4
Sweden	57		45		40	
Switzerland	36	6	37		21	
Turkey	36		34		20	
United Kingdom	45	2	45	-1	38	-1
United States	46	2	60	0	49	-1
Unweighted mean	42	8	44	-2	35	-2
Median	46	5	44	-2	37	-4

1. See notes to Table 2.6 in *Source*.
Source: OECD (2015), "Taxation of SMEs in OECD and G20 Countries", *OECD Tax Policy Studies*, No. 23, OECD publishing, Paris, Table 2.6.

tax rates, Chen and Mintz (2011) find that marginal effective tax rates rose from 18% for the smallest companies to 27.5 % when capital reached CAD 10 million, beyond which they jumped to 35% as the preferential small company rate begins to be phased out (Figure 2.13); their methodology is summarised in Box 2.3. They then stabilised until capital reaches CAD 36 million, at which point the entrepreneur is assumed to have exhausted his/her lifetime exemption of capital gains tax (which was CAD 750 000 in 2010) and therefore must pay capital gains tax.

Figure 2.13. **Marginal effective tax rates on small business,[1] 2010**



1. Base case: 5% pre-tax profit-to-asset ratio; 29% debt-to-asset ratio; and 40% dividend pay-out ratio.
Source: D. Chen and J. Mintz (2011), "Small Business Taxation: Revamping Incentives to Encourage Growth", *University of Calgary School of Public Policy Research Papers*, Vol. 4, Issue 7, May.

StatLink http://dx.doi.org/10.1787/888933371290

Box 2.3. **Calculating marginal effective tax rates on small-firm investment**

The marginal effective tax rate (METR) is the wedge between the pre-tax (R) and after-tax (r) rate of return on capital that an investor has to receive to justify making an investment, expressed as a percentage of the pre-tax rate of return:

METR = (R-r)/R

To calculate the METR for small-firm investments, it is necessary to take into account personal income taxes on dividends and capital gains because entrepreneurs provide most equity finance in small companies and typically obtain debt finance from lending institutions; by contrast, it is not necessary to take Canadian personal tax rates into account to calculate METRs for large firms, because these taxes only have a small effect on the cost of debt and equity financing, as Canada accounts for only a small share of such capital raised in international markets. Two special features of personal income taxes are important to note: first, as pointed out above, dividend tax credits are lower for "ineligible" dividends paid out of profits taxed at the reduced small business tax rate than for "eligible" dividends paid from profits taxed at the general corporate tax rate; and second, there is an indexed lifetime capital gains tax exemption that is capped (the first CAD 813 600 of gains were exempt in 2015) for realised capital gains on qualifying shares held in CCPCs, most of which are small companies.

For the METRs that Chen and Mintz (2011) calculate in the base case, it is assumed that an entrepreneur invests his/her savings in the equity of the business and that debt is provided by banks and other lending institutions. An entrepreneur invests in equity until the marginal after-tax rate of return on investment equals the risk-adjusted after-tax return that could be earned on alternative investments. As taxation of the entrepreneur's equity investment returns rises, the required pre-tax rate of return also rises, reducing the amount of investment in the business that is profitable to undertake. The cost of debt finance is the market interest rate charged by banks and other lenders. In their base case, the pre-tax profit ratio is 5%, the debt-to-asset ratio is 29% and the dividend pay-out ratio is 40%; these ratios are based on Statistics Canada data for firms with revenue under CAD 5 million in 2004-06 (representing the vast majority of small businesses).

However, Finance Canada (2013) finds that the effect of rising tax rates is more on tax planning strategies than on real economic activity. This study finds that there is an increased concentration of small companies at or just below the profit limits for the SBD (CAD 200 000 in 2000, CAD 400 000 in 2007 and CAD 500 000 in 2011) (Figure 2.14, Panel A). This concentration and its movement over time suggest that small company owners have some flexibility over the timing and form of distributions from their company. For example, Finance Canada (2013) points out that in 2000 it would have been more profitable for a small firm owner facing a personal marginal income tax rate of less than 45% to increase his/her wages instead of accruing profits just beyond the CAD 200 000 threshold, which would have been taxed at 45%. By contrast, there is no concentration of firms at the taxable capital thresholds for clawing back the SBD (Panel B). "This suggests that the concentrations observed … at the levels of taxable income at or just below the business limit are likely the result of tax planning, rather than changes in real economic decisions" (Finance Canada, 2013, p. 63).

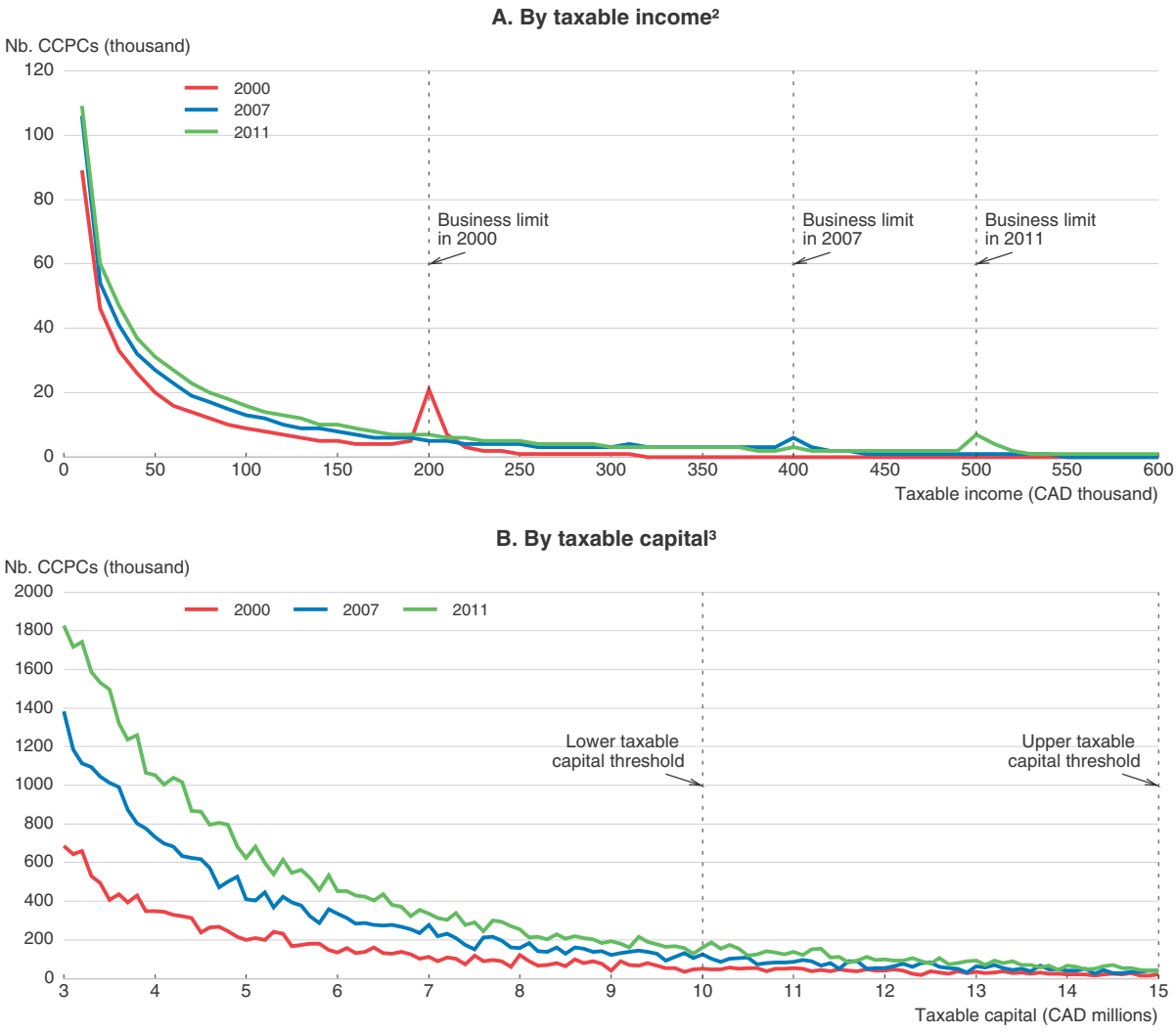
As discussed above, the economic literature on capital market failures does not establish a case for subsidising SMEs based on their size alone. Adverse selection can result in over- or underinvestment (see Box 2.2); however, there is a case for helping young firms with innovative projects, as adverse selection is much more likely to result in underinvestment in such cases. In the Mirrlees Review of taxation in the United Kingdom (Mirrlees et al., 2010), it was concluded that there was no evidence of any general capital market failure affecting small firms (Crawford and Freedman, 2010). Accordingly, there was no case for a reduced small business corporate tax rate – this tax preference was abolished on 1 April 2015. The principal finance gap in the United Kingdom was for new and start-up businesses (Graham, 2004), and this could be more effectively addressed through targeted measures. Freedman (2009, p. 172) reports to the Henry Tax Review in Australia that "as a result of these findings, there has been an attempt to target tax assistance in raising external finance to those firms that do experience a problem, through the Enterprise Investment Scheme, Venture Capital Trusts and the Corporate Venturing Scheme…non-tax-based assistance is given through the Small Firms Loan Guarantee, which has been remodelled following the Graham review to focus on firms within their first five years of business rather than on small firms generally." She adds that "this is consistent with the position taken here that the focus should not be on size but on other characteristics."

The Canadian government already operates a number of schemes that are more specifically targeted at capital market failures than the preferential tax rate for small companies, notably through the Business Development Bank of Canada (BDC) and venture capital programmes (see below). In view of the findings of the Mirrlees and Henry tax reviews in the United Kingdom and Australia, respectively, the Canadian government should in turn conduct its own review of small business support to identify capital market failures and the policy instruments best suited to addressing them.

Another rationale for the preferential tax rate for small companies could be that it compensates them for higher tax and regulatory compliance costs. This might be valid in some cases, but less so for larger firms that qualify as they are big enough to have significant economies of scale in these costs. On average, Industry Canada (2013) estimates the "regulatory bill" to have been CAD 3 500 per SME business (establishments with fewer than 500 employees and annual gross revenues between CAD 30 000 and CAD 50 million) in 2011, corresponding to 0.29% of business-sector revenues.

Figure 2.14. **The SBD does not alter incentives to grow but encourages tax planning**

Number of small CCPCs[1] claiming the federal small business deduction (SBD)



1. Small Canadian-controlled private corporations (CCPCs) that are part of an associated group of corporations are shown on the chart based on the group's total taxable income/capital.
2. Labels on the horizontal axis indicate the upper end-point of each taxable income class.
3. Labels on the horizontal axis indicate the mid-point of each taxable capital class. Only CCPCs with taxable capital between CAD 3-15 million are shown to facilitate the presentation. The vertical lines indicate the beginning and end of the range of taxable capital over which the business limit is phased out.

Source: Department of Finance Canada (2013), "Tax Expenditures and Evaluations 2012: Part 2 – Taxation of Small Businesses in Canada", Charts 5 & 6.

StatLink http://dx.doi.org/10.1787/888933371309

Programmes to increase lending to small businesses

The federal government also operates a number of programmes to increase lending to small businesses either directly or through the government-owned Business Development Bank of Canada (BDC). The largest such programmes are the BDC's Financing Program, which makes non-investment grade loans, and Innovation, Science and Economic Development Canada's Small Business Financing Program (SBFP), which guarantees loans originating in the private sector.

BDC Financing Program. The BDC's mandate is to provide services complementary to those offered by commercial banks (Government of Canada, 1995). Its largest business line is the Financing Program, with a loan portfolio of CAD 18.4 billion in 2014. The BDC reports that the Financing Program provides loans to SMEs with a higher average risk profile than those offered by commercial banks, although no explicit comparison is provided. The allowance for credit losses was 2.8% of the loan portfolio in 2015. The BDC reports that it made a profit of CAD 434 million on the Financing Program in 2013-14 (see Table 2.2). However, this result does not allow for the opportunity cost of the BDC's capital. Jenkins and Kuo (2007) recommend using an 8% real rate of return for the economic opportunity cost of capital in Canada based on what could have been earned had the funds been invested elsewhere in the economy. Using this estimate, Lester (2016) estimates that the Financing Program had a net cost of CAD 919 million in 2013-14.

It is not clear what, if any, market failures this programme is intended to address. High-risk borrowers are not necessarily denied external finance by the private sector because of a capital market failure – it may be simply that the risk-adjusted expected returns on their projects are too low to be worth financing. This programme should be refocused to target clear capital market failures. As discussed above, this would be likely to entail focusing lending on start-ups and young firms, especially with innovative projects, as such firms' access to external finance is likely to be sub-optimal owing to asymmetric information. It may also be worth considering whether this assistance could be delivered more efficiently as a loan guarantee programme instead of by direct lending by a public bank. With weaker incentives to maximise profits, there is a risk that a public bank is not as good at assessing risk as private-sector banks.

Small Business Financing Program. SBFP is another generally available programme, under which the federal government guarantees loans originating in the private sector. Lester (2016) estimates that the value of outstanding loans in fiscal 2014 was CAD 4 billion. In order to participate in the programme, lenders must offer variable-rate loans at no more than 3% above the prime rate for business loans and fixed-rate loans at their single-family residential mortgage rate plus 3%. These rates include a 1.25% annual administration fee paid to the federal government. Lenders also collect a 2% registration fee on its behalf. The government pays 85% of losses on defaulted loans, but for large lenders total default claims cannot exceed 12% (10% until 2009) of the value of the loan portfolio. In 2014, the cost of the SBFP net of fees collected was modest (see Table 2.2).

In fiscal 2014, the total value of new loans registered with the federal government was CAD 853 million, trending down from about CAD 1 billion in 2011 (Industry Canada, 2014a). Borrowers are predominantly young and small firms: 60% of participating firms were less than a year old and about 40% had less than CAD 500 000 in annual turnover. The number of loans guaranteed that year was 5622, which was half the number registered in 2005. Lender dissatisfaction with profitability and the administrative effort required to register loans and process claims appears to have hurt use of the programme (Industry Canada, 2014b). Limits on the size of loans may also have been an issue, but they were increased in 2014. The 2015 budget increased the loan amount and maximum term for investment in real property and raised the size eligibility criterion for participation in the programme.

The latest evaluation of the SBFP (Industry Canada, 2014b) suggests that large banks typically pool all applicants rather than price loans to risk. All applicants with a credit

score above a certain value are offered credit. Without a guarantee, applicants with a credit score below the cut-off would be denied credit rather than offered a loan at a higher rate. Because of adverse-selection effects, a rise in the "pooled" loan rate would be likely to reduce the average quality of applicants, causing a reduction in profits. With a loan guarantee, higher-risk borrowers gain access to credit without affecting the quality of borrowers in the original pool.

The incrementality of the SBFP is assessed on a periodic basis, using both survey and econometric analysis. The most recent survey of lenders (R. A. Malatest and Associates, 2014) reports that 46% of SBFP participants would have been rejected for a conventional loan. A further 30% would have been offered credit but on less favourable terms, such as additional collateral or a lower loan amount. Seens and Song (2015) develop a credit-scoring model similar to those used by banks. The model provides a satisfactory prediction of bank approvals of applications for conventional loans. When the model is applied to SBFP participants in 2011, it predicts that 67% of participants would have been refused a conventional loan.

The large proportion of young firms among the beneficiaries of this programme suggests that it may be addressing capital market failures. It could be more effective in doing so if there were also an explicit focus on supporting innovative firms.

BDC Growth and Transition Capital. The BDC's Growth and Transition Capital programme targets high-potential firms that need financing to sustain growth or to transition between owners (BDC, 2015). As such, it is clearly intended to address a capital market failure. The programme makes debt and some equity-like investments that have subordinate status relative to other debt issued by firms receiving financing, making these investments riskier than loans made under the Financing Program. Reflecting this risk profile, interest income is high, amounting to 9.3% of the portfolio, compared with 5.4% for the Financing Program.

All of the financing activity takes place via joint ventures with the Caisse de dépôt et placement du Québec. The BDC acts as a general partner, handling all lending and managerial activities in exchange for fees (BDC, 2004). In 2014-15, the value of the stock of Growth and Transition Capital programme investments was CAD 643 million.

This programme can be expected to be of particular interest to entrepreneurs with projects that are too risky for conventional debt finance but that do not have a high enough return if successful to attract venture capital. Getting these borrowers into the appropriate financing niche could be welfare-enhancing. On the other hand, the programme will also be attractive to entrepreneurs with projects too risky for conventional debt finance for which they believe, rightly or wrongly, that advice from venture capitalists will not increase the probability of success sufficiently to cover the extra cost of venture capital financing. If these entrepreneurs are correct in their assessment, obtaining financing could be welfare enhancing; but if they are not, obtaining subordinated financing could impose a social cost in the form of wasted resources in a failed project.

Growth and Transition Capital may be filling a gap in the supply of risk capital by providing financing for projects too risky for conventional debt but not suitable for venture capital financing. It would be worth assessing if more resources should be allocated to screening and advising loan applicants. It is also not clear why the BDC should take the lead in its partnership with the Caisse. The possibility of providing side-car funding, where

specialist investors would make decisions on where and how to supply subordinated loans on behalf of the BDC, should be investigated.

Programmes to support venture capital

There is a case for public support for venture capital investments on the grounds that they generate knowledge spill-over benefits that are not taken into account by investors. Lerner (2010) reports that venture capital generates three times as much innovation as an equal amount of corporate research and development. The key to success is finding instruments that increase the quantity of venture capital without diminishing its quality.

BDC Capital Inc. The BDC is also an important player in the venture capital market. BDC Capital Inc. makes venture capital investments directly at every stage of a technology-based company's development and makes indirect investments via funds, some of which are led by private- and other public-sector funds. In fiscal years 2013-14 and 2014-15, new investments amounted to CAD 664 million, which was about 17.5% of the value of all new risk capital investments, up from only 9% in the preceding three years. In 2015, BDC's venture capital portfolio (CAD 710 million) was split roughly 55-45 in favour of direct investments, down from 85-15 in 2010.

A 2011 review of the industry and BDC's role in it concluded that the Canadian venture capital industry was "broken" (BDC, 2011, p. 9). The venture capital market shrank dramatically after the "dot.com" bust and fell further by 2010 as negative returns prompted private investors to exit the industry. According to the BDC, substantial changes would be required to draw them back (BDC, 2011). The review drew attention to the small scale of Canadian funds and the reduced skill of fund managers compared to their US counterparts as key reasons for industry underperformance. It also noted that substantial investments were made by government and retail funds (especially Labour Sponsored Venture Capital Corporations (LSVCCs)) that have objectives and face constraints that may hurt returns.

The 2011 report announced a new strategic direction, the most important element of which was the intention to use BDC resources to promote the emergence of "at-scale" funds managed by skilled personnel, emphasising indirect rather than direct investments. This approach implies an increasingly passive and smaller role for BDC as private-sector managers become more skilled, which should be beneficial as the quality of managers improves and the funds they work with grow.

Based on the policy conclusions summarised above, some suggestions to improve outcomes can be made:

- The BDC should shift from direct seed-capital investments to passive or side-car investments with angel investors. In this approach, the government would offer private investors leveraged returns by capping its return while leaving its entire investment at risk. The cap would be set so that the expected private return would rise by an amount equal to the estimated premium required by risk-averse entrepreneurs. As the risk premium and the proportion of the subsidy that will be passed on to entrepreneurs are unknown, the BDC should experiment with relatively small subsidies to gain some understanding of the market.
- If the BDC's 2011 review was right that there is a shortage of angel investors with enough industry knowledge to provide useful advice, it could continue to make direct

investments at the same time as side-car investments. A comparison of rates of return obtained in the two approaches would provide a useful test of the shortage hypothesis.

- BDC's activity in the venture capital segment should be confined to indirect investment, with the private sector taking the lead in most circumstances. These passive investments should offer leveraged returns to its partners to expand the supply of venture capital to the extent warranted by knowledge externalities and to mitigate the moral hazard problem of venture capitalists providing less than the socially optimal amount of advice.
- The BDC should increase the supply of venture capital cautiously when implementing its strategy to restructure the industry. Considerable judgement will be required to get the right balance between the strategy's short-run costs and long-run benefits.

The federal government's Venture Capital Action Plan. The federal government announced the Venture Capital Action Plan (VCAP) in January 2013 to boost the venture capital industry. The VCAP is a package of both direct and indirect investments in the sector amounting to CAD 400 million over the following seven to ten years focused on later-stage financing. A key component of the Plan is the establishment of up to four large-scale funds of funds with private-sector investors and interested provinces, managed by BDC Capital Inc. through private-sector general partners. The VCAP funds of funds are structured to attract private investors to the asset class, including through the use of incentives, with each dollar in government capital attracting two dollars in private-sector capital.

Labour-sponsored venture capital funds. Canadian governments have also been aiming to encourage venture capital investments through so-called Labour-Sponsored Venture Capital Corporations (LSVCCs). The share of venture capital investments accounted for by LSVCCs has fallen markedly in recent years, from around 30% in 2006 to 4% in 2014, reflecting poor returns and the phasing out of LSVCC tax credit programmes (Industry Canada, 2014c and 2007). In this model, individuals investing in a fund formally sponsored by a union or an organisation affiliated with organised labour are eligible for a capped personal income tax credit provided that various conditions are met: the fund must issue common shares that are only available for purchase by retail investors, similar to a mutual fund; retail investors must hold their investments in the fund for at least eight years; and the fund must invest a minimum portion (usually 60%) of its capital in firms with less than CAD 50 million in capital and must also commit for at least eight years. While it is not obvious why government-sponsored venture capital should be tied to organised labour, this feature may not have much effect insofar as unions "merely rent their name to LSVCCs without providing any additional governance over the funds' operations" (Cumming, 2007a, p. 2).

This structure contributes to poor performance. Small, retail investors are costly to service and rarely have the expertise required to become well informed. In these circumstances, no one has the ability or incentive to control managers. Moreover, even if small LSVCC investors wanted to sanction fund managers by exiting, they could not, owing to the lock-in. By contrast, investors in private venture capital funds are typically institutional investors, like pension funds, and high net worth individuals who have the incentive and ability to become well informed and control managers.

Statutory constraints on LSVCCs, which are similar in each province that has LSVCC-type tax credits, further undermine performance (Cumming and MacIntosh, 2004). These

include requiring investments to be made in the sponsoring jurisdiction and the reinvestment of fixed percentages of contributed capital in private companies raising venture capital within a stated period (usually one to three years). These constraints limit investment opportunities and at times oblige LSVCCs to make inferior investments (Cumming and MacIntosh, 2006). By contrast, restrictive covenants on private venture capital vary depending on the agreed needs of fund investors and the fund manager, which enables the limited and general partners to design covenants that are best suited to the fund's particular objectives.

LSVCC returns have been extremely low: for example, the five-year return as of 2006 was negative for most funds (Cumming, 2007a); a more recent analysis of retail venture capital corporation funds (including LSVCC funds) sponsored by and operating in British Columbia revealed five-year losses of 11-57% excluding the tax rebate (Brander et al., 2012). In other words, in the absence of the tax breaks, these funds would not be able to attract capital.

Not surprisingly, the tax breaks are the key selling point of LSVCCs (Cumming and MacIntosh, 2007). Most individuals invest in LSVCCs through individual registered retirement savings plans (RRSPs), thereby qualifying for tax savings over and above the tax credits (15% capped at CAD 750 from the federal government with provinces typically matching this credit) (Cumming and MacIntosh, 2004). Combined with deductibility of contributions to RRSPs, the initial return from tax savings rises with the taxpayer's marginal income tax rate, reaching 400% on a CAD 5 000 investment for an individual subject to a 50% marginal income tax rate ([5000 – out-of-pocket cost of 1000]/out-of-pocket cost of 1000).

Brander et al. (2008) find that government venture capital, which includes LSVCCs, has underperformed private venture capital in Canada in terms of both private value creation and public welfare for a number of reasons. First, government venture capital underperforms private venture capital in creating economic value: firms funded by government venture capital are less likely to have successful exits, are much less likely to have IPOs on major exchanges and generate lower exit values when they do have a successful exit. In addition, firms financed by government venture capital are more likely to go out of business over the investment time horizon and less likely to attract US investment, which can be important for linking into cutting-edge global networks. Second, firms funded by government venture capital are less likely to generate innovations, as measured by patents (even after controlling for industry selection). Third, the underperformance of firms funded by government venture capital reflects less effective mentoring and other value-adding skills, rather than the selection of lower-potential firms. Finally, government venture capital is crowding out private venture capital to a considerable but not complete extent. In other words, government venture capital is mostly investing in businesses that otherwise would have been funded by private venture capital and had more valuable treatment effects. As Lerner (2010, p. 262) stated, "[LSVCCs] not only backed incompetent groups that did little to spur entrepreneurship, but [they] crowded out some of the most knowledgeable local investors."

In light of poor government venture capital performance based on both private and social returns, the federal Labour Sponsored Venture Capital Corporation tax subsidy should be phased out, as previously planned, and greater use of more effective means of supporting venture capital should be explored. As noted above, one such promising

approach, as was the case with the Venture Capital Action Plan (BDC Capital Inc. represents the government as an investor) and a number of provincial VC funds (e.g. the Ontario Venture Capital Fund and Quebec's Tarlys Capital), is to establish funds that operate like private, independent, limited partnership venture capital funds, with the government matching private investments in the funds. With this approach, the private partners select investments and provide monitoring and value-added services. Typically, the government investor leverages returns for the private investors by not sharing fully in the profits if the firm is successful but fully sharing in losses otherwise.

Considerable experience has been gained with this approach through the US Small Business Innovation Research (SBIR) Program and Australia's Innovation Investment Funds (IIFs). Lerner (1999) finds that early-stage companies financed by SBIRs have substantially higher growth rates than non-SBIR-financed companies. Cumming (2007b) finds that Australian IIFs are fostering the development of its venture capital industry in a statistically and quantitatively significant way. In implementing such programmes in Canada, it would be important to ensure that they are not limited to Canadian investors and firms, since the trend in venture capital is away from being "local generalists" to becoming "global specialists" (Brander et al., 2012). To remain competitive, Canadian venture capitalists are increasingly likely to require a global, or at least North American, investment reach.

Advice and service coordination programmes

BDC Consulting Services. The BDC also provides a broad range of advisory services to entrepreneurs at subsidised rates. The percentage of costs recovered through fees has been on a downward trend since 2010; in 2015 the cost recovery rate was 41.3%, a bit more than half its value in 2010. A further decline is expected for fiscal 2016.

Providing consulting services at below-cost rates could be efficient. As discussed above (see Box 2.2), moral hazard in equity finance may result in a sub-optimal amount of business management services (advice) provided by venture capitalists, because they must share the value of this contribution with entrepreneurs (Elitzura and Gavious, 2003). Moreover, adverse selection in equity finance may result in venture capitalists underinvesting in screening, because they do not capture the full benefit of avoiding wasteful spending by entrepreneurs on low-quality projects (Dietz, 2002). Subsidised technical advice could also raise the probability of success of projects rejected by venture capitalists on the grounds of low returns but which are too risky for debt or pure equity financing (i.e. provided without advice). These benefits would arise from assisting entrepreneurs applying for subordinate financing, venture capital financing and a small slice of Financing Program clients. There is a plausible case for providing subsidised business management advice to potentially high-impact entrepreneurs. Such entrepreneurs may fail in the absence of such advice, so such a service can be seen as indirectly subsidising knowledge creation.

A new federal programme to help high-impact firms scale up. The 2016 budget proposes to launch a new initiative in 2016-17 to help high-impact (innovative) firms scale up and further their global competitiveness, increasing small business dynamism. Under this client-centred approach, firms will be able to access coordinated services (such as finance,

advice and export and innovation support) from the relevant federal agencies tailored to their needs. This initiative aims to target 1000 firms in the first few years and to expand thereafter.

Recommendations to enhance the contribution to productivity of small business financing programmes

- Review small business support to identify clear capital-market failures and the policy instruments best suited to addressing them.
- Review Business Development Bank of Canada programmes to ensure that they are focussed on efficiently addressing clear capital-market failures.
- Encourage the Business Development Bank of Canada venture capital arm to shift from direct seed capital investments to passive side-car investments with angel investors.
- Phase out remaining federal tax credits for provincial Labour-Sponsored Venture Capital Corporations 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.

Enhanced R&D tax credits for small companies

Canadian governments provide higher tax credits to small CCPCs with qualifying annual R&D expenditures up to CAD 3 million than to other companies. At the federal level, the enhanced Scientific Research and Experimental Development (SR&ED) refundable tax credit is 35%. The "expenditure limit" for the enhanced credits is reduced to zero as taxable income rises from CAD 500 000 to CAD 800 000 and as taxable capital rises from CAD 10 million to CAD 50 million. The enhanced credits are fully refundable. R&D spending in excess of the expenditure limit is eligible for the standard 15% tax credit. For firms with taxable income of CAD 500 000 or less or taxable capital of CAD 10 million or less, 40% of credits earned at the general rate are also refundable. Provincial governments also provide SR&ED tax credits, bringing the weighted average of federal-provincial enhanced and standard rates to 43% and 20%, respectively.

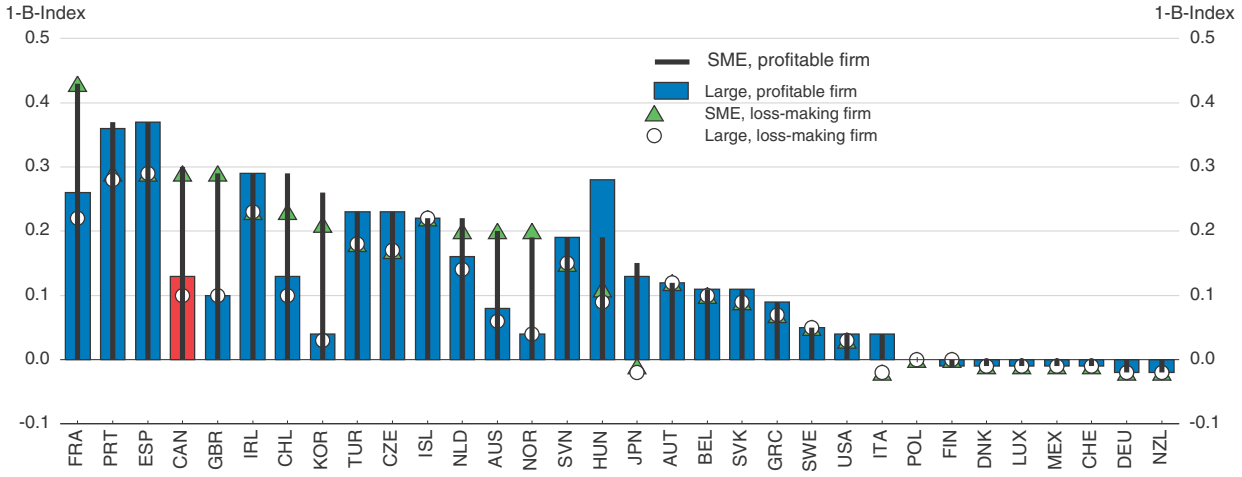
The implied SME tax subsidy rates in Canada are very high by international comparison (Figure 2.15). Abstracting from provincial subsidies, the SME subsidy rate per marginal unit of R&D outlay (as measured by one minus the B-index) is 30%, which is in the top quartile of rates across OECD countries. The enhancement over the 13% large profitable company rate is one of the greatest among OECD countries. Combined with provincial tax support, the SME R&D tax subsidy rate can reach 40%, as in Quebec, which provides one of the most generous fully refundable R&D tax credits among Canadian provinces.

Governments subsidise business R&D to correct for two major types of market failures (OECD, 2016a):

- Externalities. Firms have difficulty fully appropriating the returns on their investments, as some of the resulting knowledge spills over to other firms, leading firms to underinvest in innovation relative to the socially optimal level.
- Asymmetric information in capital markets. Firms have difficulty finding external finance for innovation, especially if they are small or young. Innovation is a highly uncertain activity with large differences in the information available to inventors and

Figure 2.15. **Implied tax subsidy rates[1] on R&D expenditures**

1-B-Index,[2] by firm size and profit scenario, 2015



1. These implied tax subsidy rates focus only on central government support and do not report provincial tax incentives.
2. The B-index, a measure of the pre-tax income needed for a company to break even on a marginal, monetary unit of R&D outlay (OECD, 2013), takes into account tax relief provisions to derive implied tax subsidy rates (1 minus the B-index).

Source: OECD (2016), "R&D tax Incentives; Design and Evidence", *DSTI/IND/STP(2016)1*, Figure 1; OECD (2013), "Definition, Interpretation and Calculation of the B index", *Measuring R&D Tax Incentives*, October. *www.oecd.org/sti/b-index.pdf*.

StatLink http://dx.doi.org/10.1787/888933370978

investors, respectively. This may imply that external capital for innovation will be available at too high a cost or may not be available at all.

Insofar as this is the rationale for public support for R&D, it is impossible to judge *a priori* the implications for the SME subsidy rate relative to the standard rate. Asymmetric information in capital markets implies that small firms may be more credit constrained, pointing to a higher optimal SME subsidy rate, especially for young SMEs as they tend to be more innovative than old SMEs (Haltiwanger et al., 2013; Criscuolo et al., 2014); tighter credit constraints on small firms may lie behind their apparent greater responsiveness to R&D tax incentives than larger firms (Baghana and Mohnen, 2009; OECD, 2016a). On the other hand, Bloom et al. (2013) suggest that smaller firms generate lower social returns to R&D because they operate more in technological niches, pointing to lower optimal SME subsidy rates. Canada's high increment in R&D subsidies for SMEs relative to other firms by international comparison raises questions about whether this is the right balance. To resolve this and other R&D subsidy issues, such as the appropriate balance between direct and indirect support (Canada relies heavily on indirect support) and the level of the standard tax credit rate, the authorities should evaluate R&D subsidy policies to ensure that they are providing value for money, as recommended by the OECD (2016a).

Recommendation to achieve greater value for money from R&D subsidies

- Evaluate R&D subsidy policies to determine whether their structure, including a substantially enhanced R&D tax credit rate for small companies and a heavy reliance on indirect measures, and the level of the standard R&D tax credit rate are providing value for money.

Non-targeted tax measures supporting entrepreneurship

The federal government also supports entrepreneurship through other tax measures. Three of the four measures – the lifetime capital gains exemption (LCGE), the deduction of allowable business investment losses (ABIL) and the rollover of investment in small business shares – reduce the capital gains tax on entrepreneurial activity. None of them is targeted at high-impact entrepreneurs, but they are of particular benefit to investors and entrepreneurs undertaking high-risk projects where the return is realised largely through capital gains. The fourth provides more favourable tax treatment of labour income in the form of stock options.

The lifetime capital gains tax exemption is an inefficient way to support entrepreneurial activity

The lifetime capital gains tax exemption (LCGE) exempts up to CAD 813 600 (2015 value, indexed to inflation) in capital gains on the sale of qualifying shares in CCPCs from taxation over a taxpayer's lifetime, provided that certain conditions are met. CCPC shareholders may choose to realise a capital gain if the firm goes public. The objectives of the LCGE are to "bolster risk taking and investment in small businesses, help small business owners to accumulate funds for retirement and facilitate intergenerational transfers" (Finance Canada, 2010, p. 42). The amount of tax revenue forgone in 2014 was CAD 580 million (see Table 1.2).

A case can be made for providing preferential capital gains tax treatment for entrepreneurs starting a high-risk, potentially high-growth business and for outside equity investors, both of whom take returns largely in the form of capital gains. As noted above, such firms contribute disproportionately to innovation, both by closing the gap between global and national productivity frontier firms and by helping to diffuse technical progress. These effects entail spill-over benefits that are not rewarded in the market. Moreover, as discussed in, both entrepreneurs and venture capitalists invest less energy in the business than would be optimal, because neither receives the full reward for their effort.

While the LCGE should attenuate these market failures, it has a number of drawbacks:

- Marginal benefits for venture capitalists fall to zero quickly, because they would rapidly exhaust their lifetime limit.
- It distorts the choice of organisational form away from sole proprietorships, partnerships and public companies towards CCPCs, the only organisational form that qualifies.
- By facilitating intergenerational transmission of businesses, it reduces productivity as firms inherited by family members tend to underperform those with management selected based on other criteria (Andrews et al., 2015).

If it is felt that there is a compelling economic case for at least partially exempting capital gains taxation on investing in high-growth companies, it may be preferable to replace the LCGE by a measure along the lines of that in the United States, which provides a 100% reduction in capital gains tax for shares issued by small businesses (with less than USD 50 million in assets) when they become public companies (*PATH Act*). This benefits both entrepreneurs and venture capital investors fully.

Recommendation to re-orient capital gains taxation to provide greater support to innovative entrepreneurs

- Replace the lifetime capital gains tax exemption by a more targeted measure of benefit to high-potential young firms.

The deduction for allowable business investment losses could be improved

In most circumstances, capital losses can be deducted only from realised capital gains. This policy prevents taxpayers from deducting capital losses as they occur while deferring taxes on unrealised capital gains. While justifiable as a measure to protect the tax base, the asymmetric treatment of capital gains and losses may be particularly burdensome for owners of young firms, who may be more likely to have capital losses without offsetting capital gains.

For small businesses, the deduction for allowable business investment losses (ABIL) gets around the problem of asymmetric treatment by allowing half of losses (corresponding to the half inclusion rate of capital gains) incurred on shares or debt issued to be deducted from ordinary income. If the ABIL exceeds other sources of income for the year, the excess may be converted to a non-capital loss that may be carried back three years or forward ten years, after which it becomes a net capital loss that can be deducted only from realised capital gains. As taxpayers making use of an ABIL are not first required to deduct the loss against unrealised capital gains, claimants continue to benefit from a tax deferral.

The amount of personal income tax revenue foregone in 2013 as a result of ABILs was CAD 35 million (see Table 2.2). This is surprisingly small, given that almost half of all firms fail in the first three years after start-up (Macdonald, 2012). Part of the explanation is the requirement that losses be first applied against capital gains deductions (the LCGE multiplied by the capital gains inclusion rate) claimed in earlier years. Another reason is that the cost of converting an ABIL to a non-capital loss is not included in the tax expenditure estimate.

There are a number of adjustments to the ABIL that could be made to focus it more on start-ups, which may have more beneficial effects on productivity than other small firms. First, the carry-forward of ABILs converted to non-capital losses could be increased over time to maintain a constant present value. Second, although ABILs can be transferred to a spouse or partner by transferring the underlying asset, a simpler, direct transfer of the deduction could be allowed. Third, capital losses on unincorporated business ventures could be made eligible for the deduction to avoid biasing the choice of business form.

Increasing women's entrepreneurship

Female entrepreneurship rates are lower than male rates on a variety of measures. In 2011, only 15.5% of SMEs were majority-female owned, compared with 66.4% that were majority owned by males; the other 18.1% of SMEs were owned equally by the two (Industry Canada, 2015). Majority female-owned SMEs tend to be slightly smaller on average than their majority male-owned counterparts – 59% only had one to four employees, compared with 51% for majority male-owned SMEs. Moreover, majority female-owned SMEs' actual and expected growth rates were lower than for majority male-owned SMEs (Table 2.5). Self-employed women are much more likely to work part-time than self-employed men and female employees (Figure 2.16). Female entrepreneurs also tend to set a lower maximum size for their businesses beyond which they are not interested in growing than their male counterparts (Cliff, 1998). One such growth-limiting strategy is not to export. Indeed, a firm's propensity to

Table 2.5. **Distribution of SME ownership**

A. By reported annual revenue growth rates, 2011-14

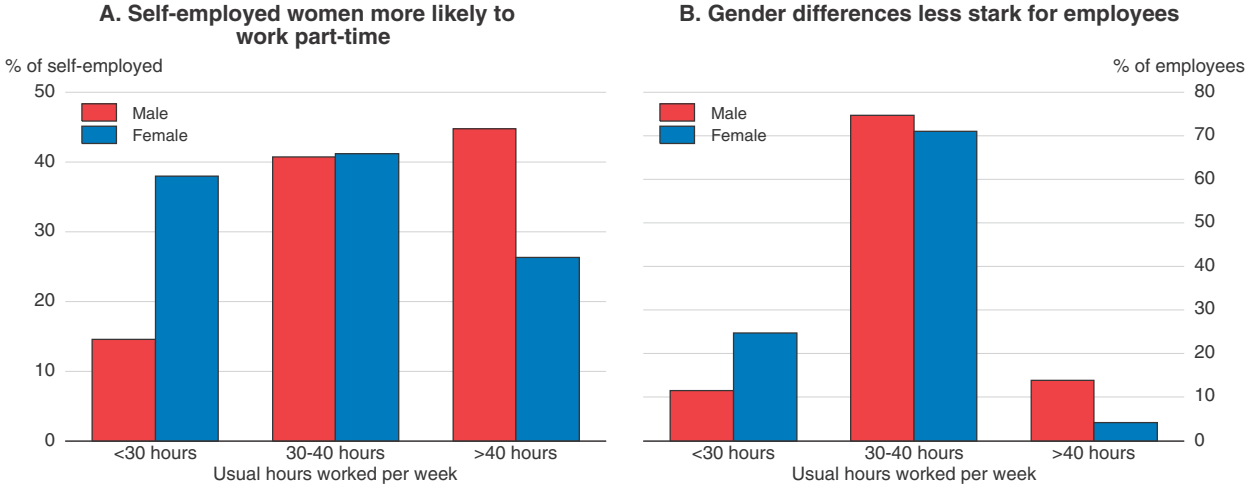
Growth Rate	Majority Female-Owned	Majority Male-Owned	Equal Ownership
<0% (negative sales growth)	11.9	11.7	10.3
0% (no growth)	19.5	18.8	16.9
1-10% per year	51.9	48.0	53.6
11-20% per year	10.3	11.5	10.4
>20% per year	6.4	10.0	8.8

B. By expectations for growth, 2015-17

Growth Rate	Majority Female-Owned	Majority Male-Owned	Equal Ownership
<0% (decline)	5.3	5.9	6.7
0% (no growth)	18.8	16.7	15.8
1-10% per year	51.9	56.1	59.0
11-20% per year	16.3	12.8	12.7
>20% per year	7.6	8.6	5.8

Note: Percentage may not add to 100 due to rounding.
Source: Statistics Canada, *Survey on Financing and Growth of Small and Medium Enterprises, 2015*.

Figure 2.16. **Self-employment differences by gender, 2015**



Source: Statistics Canada, Table 284-0024.

StatLink http://dx.doi.org/10.1787/888933371316

export and ability to penetrate international markets are good indicators of growth aspirations and potential (Institute for Competitiveness and Prosperity, 2012). In 2011, only 5% of majority female-owned SMEs exported, compared with 12% for majority male-owned SMEs (Industry Canada, 2015). Even after controlling for sector, firm and owner attributes, male-owned SMEs have a higher tendency to export (Orser et al., 2010). Narrowing these entrepreneurship gaps would increase productivity growth and social inclusion (not least because women are over-represented in social entrepreneurship and innovation that seeks to address community and social needs).

Factors contributing to these gender gaps include female entrepreneurs having less management experience, less access to finance, greater childcare and eldercare

responsibilities and less effective networks for accessing resources, and being more concentrated in service sectors that are characterised by ease of entry and intense competition than men (OECD, 2016b; Hughes, 2006):

- In 2011, 68% of majority female-owned SMEs' owners had over 10 years' experience in 2011, compared with 79% for their male counterparts (Industry Canada, 2015).
- In 2011, 67% of majority female-owned SMEs had loan requests rejected because of insufficient collateral and 66% because of operating in an unstable industry as against only 36% and 25%, respectively for their male counterparts (Industry Canada, 2015).
- In 2011, 21% of majority female-owned SMEs were in retailing compared with 12% of majority male-owned firms, while there were far fewer women than men in high-technology manufacturing and knowledge-intensive service sectors, where growth opportunities tend to be stronger (Industry Canada, 2015).
- A smaller proportion of women than men (53% of women, 71% of men) are motivated by classic pull factors, such as independence, desire to be one's own boss, and earn more money, while a larger proportion of women are motivated by achieving a better work-family balance (25% of women, 7% of men) (Hughes, 2006). These factors contribute to the gender gaps in actual and expected growth and in the propensity to export noted above.

To address some of these issues, recent budgets included measures to foster networking, encourage mentoring and championing, enhance access to international markets and provide finance (through the Business Development Bank of Canada). These measures could be built on by scaling up business development support to growth-oriented female-owned ventures. The highly successful "Grow to Greatness" accelerator programme of Alberta Women Entrepreneurs provides a role model for other provinces and territories.

To facilitate female entry into high-technology manufacturing and knowledge-intensive service sectors, where growth opportunities tend to be stronger, more women need to obtain STEM (science, technology, engineering and mathematics) qualifications and pursue related careers, while stereotypes associating males with greater success in these fields should continue to be confronted. Overwhelmingly, founders of leading global tech companies and of the top 250 Canadian tech companies have university degrees in science and engineering (Institute for Competitiveness and Prosperity, 2012). As in many other countries, women are under-represented in these fields in Canada: in 2011, only 39% of people aged 25-34 with a university degree in a STEM field were women, compared with 59% in all fields (Hango, 2013).

Federal entrepreneurship programmes would also be more effective in increasing female entrepreneurship if they were extended to social enterprises, which tend to attract female entrepreneurs more than their male counterparts. Increasing assistance with child-care costs, which are relatively high in Canada by international comparison (OECD, 2014), could help female entrepreneurs constrained by family responsibilities to pursue more growth-oriented strategies, as do their male equivalents.

Recommendation to support female entrepreneurship

- Scale up business development support to growth-oriented female ventures.

Increasing entrepreneurship of Indigenous Peoples

Indigenous Peoples are also under-represented in SME ownership – 2% of SMEs are operated by Indigenous entrepreneurs, about half of their share in the total population (Gulati, 2012). There are organisations dedicated to strengthening networks of entrepreneurs, mentoring and entrepreneurial skills, helping to develop successful role models in the process, but these efforts need to be reinforced. To promote Indigenous entrepreneurship, the top priority is to invest in education and capacity building both in Economic Development Corporations (how to set up and run one and create effective corporate governance arrangements), which are community firms that account for most Indigenous SME income, and for the community at large (job and skills training) (Gulati and Burleton, 2015). Indigenous firms also need better access to IT infrastructure – 20% of those in Ontario did not have an Internet connection in 2013, rising to 37% for those on reserves (Canadian Council for Indigenous Business, 2014).

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