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Special Foreword to the OECD Economic Survey of Canada 2014 in memoriam *of Jim Flaherty*

If Canada's economy and labour markets stood up better than those of most OECD countries to the ravages of the recent global financial crisis, this is thanks in no small measure to the steady stewardship and expert leadership of the late Jim Flaherty.

Finance Minister from 2006-14, Mr. Flaherty has been described as "the right man in the right job at the right time". His term in office spanned the end of the "great moderation", the depths of the financial crisis and the ensuing economic recovery and expansion.

Long-standing good practice in Canada's banking sector ensured the country was not at the epicentre of the financial crisis, but it was Flaherty's timely and decisive intervention that ensured Canada was not among its worst affected victims. He understood better and quicker the need for government intervention at this critical juncture to protect the livelihoods and well-being of Canadians.

Flaherty spearheaded an ambitious fiscal stimulus, including substantial infrastructure investment and crucial support for the automotive industry in 2009. He was among the first to recognise the perils of rising public debt levels, and introduced a comprehensive programme of fiscal consolidation which left Canada's public finances in a strong position.

The OECD Economic Survey of Canada 2014 *acknowledges the strength of the Canadian economy and lays out the prospect of a stronger, fairer, greener growth, so long as the correct monetary, fiscal, structural and financial policies are maintained. That this framework is already in place is testament to the work of Jim Flaherty over the past eight years, and is perhaps the greatest legacy he leaves to his compatriots.*

Angel Gurría
Secretary-General, OECD

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This Survey *is published on the responsibility of the Economic and Development Review Committee 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 14 May 2014. 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 28 May 2014.

The Secretariat's draft report was prepared for the Committee by David Carey and Calista Cheung under the supervision of Peter Jarrett. Research assistance was provided by Françoise Correia.

The previous Survey of Canada *was issued in June 2012.*

BASIC STATISTICS OF CANADA, 2012

(Numbers in parentheses refer to the OECD average)[a]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	34.9		Population density per km^2	3.5	*(34.3)*
Under 15 (%)	16.2	*(18.4)*	Life expectancy (years, 2009)	81.0	*(80.0)*
Over 65 (%)	14.9	*(15.3)*	Men	78.7	*(77.3)*
			Women	83.3	*(82.8)*
Latest 5-year average growth (%)	1.2	*(0.5)*	Latest general election	May 2011	
ECONOMY					
Gross domestic product (GDP)			Value added shares (2010, %)		
In current prices (billion USD)	1 821.4		Primary	1.5	*(2.7)*
In current prices (billion PLN)	1 820.0		Industry including construction	27.7	*(27.1)*
Latest 5-year average real growth (%)	1.2	*(0.6)*	Services	70.8	*(70.2)*
Per capita, PPP (000 USD)	42.1	*(37.3)*	Median equivalised household income PPP (000 USD, 2010)	27.7	*(20.4)*
GENERAL GOVERNMENT Per cent of GDP					
Expenditure	41.5	*(42.7)*	Gross financial debt[b]	96.1	*(107.7)*
Revenue	38.1	*(36.8)*	Net financial debt[b]	43.6	*(68.0)*
EXTERNAL ACCOUNTS					
Exchange rate (CAD per USD)	1.0		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	1.2		Machinery and transport equipment	26.3	
In per cent of GDP			Chemicals and related products, n.e.s.	8.1	
Exports of goods and services	30.0	*(53.7)*	Mineral fuels, lubricants and related materials	25.6	
Imports of goods and services	32.0	*(50.3)*	Main imports (% of total merchandise imports)		
Current account balance	-3.4	*(-0.5)*	Machinery and transport equipment	41.1	
Net international investment position	-16.7		Mineral fuels, lubricants and related materials	11.1	
			Chemicals and related materials, n.e.s.	10.1	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (%) for 15-64 year olds	72.2	*(65.0)*	Unemployment rate, Labour Force Survey (age 15 and over) (%)	7.2	*(7.9)*
Men	75.2	*(73.1)*	Youth (15-24) (%)	14.3	*(16.2)*
Women	69.2	*(57.0)*	Long-term unemployed (1 year and over) (%)	0.9	*(2.7)*
Participation rate (%) for 15-64 year olds	77.9	*(70.9)*	Tertiary educational attainment 25-64 year-olds (%, 2011)	51.3	*(31.5)*
Average hours worked per year	1 710	*(1 766)*	Gross domestic expenditure on R&D (2011) (% of GDP)	1.7	*(2.4)*
ENVIRONMENT					
Total primary energy supply per capita (toe)	7.2	*(4.2)*	CO_2 emissions from fuel combustion per capita (tonnes, 2011)	15.4	*(10.0)*
Renewables (%)	17.9	*(8.5)*	Water abstractions per capita (1 000 m^3, 2009)	1.2	
Fine particulate matter concentration (urban, PM10, µg/m^3, 2010)	14.5	*(20.1)*			
SOCIETY					
Income inequality (Gini coefficient, 2010)	0.320	*(0.304)*	Education outcomes (PISA score, 2012)		
Relative poverty rate (%, 2010)	11.9	*(10.9)*	Reading	523	*(496)*
Public and private spending (% of GDP)			Mathematics	518	*(494)*
Health care (2011)	11.2	*(9.5)*	Science	525	*(501)*
Pensions (2009)	4.5	*(8.7)*	Share of women in parliament (%, December 2013)	28.0	*(26.2)*
Education (primary, secondary, post sec non tertiary, 2010)	3.9	*(4.0)*	Net official development assistance (% of GNI)	0.3	*(0.4)*

Better life index: *www.oecdbetterlifeindex.org*

a) 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.

b) SNA definition excluding unfunded-government-employee-pension liabilities.

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

Executive summary

Main findings

Canada's economic growth has been fairly solid and in any case higher than in most other OECD countries since the trough of the recession. Non-commodity exports have been weak, widening the current account deficit and depressing business sentiment. About one half of the deterioration in the employment and unemployment rates caused by the recession has been reversed. Growth is projected to strengthen and to rebalance towards exports and investment.

Monetary policy remains highly accommodative, supporting activity and probably pushing up house prices. Economic slack should be absorbed by mid-2015, contributing to an expected increase in underlying consumer price inflation to near 2%, the Bank of Canada's target-range midpoint. House prices and household debt have risen to very high levels, although macro-prudential tightening has moderated the growth in household borrowing and reduced the risks of sharp house price declines. However, affordability has become a serious challenge for low-income households in some urban areas. Also, extensive government involvement in mortgage insurance exposes taxpayers to more risk than is necessary for ensuring a liquid and efficient market.

Skills shortages in certain fields and regions could limit growth going forward. University-degree earnings premiums have increased in some professions and real earnings have risen more in the oil-rich provinces than elsewhere. Skilled-trade vacancy rates have soared since the recession, especially in Alberta and Saskatchewan. The average apprenticeship completion rate was only 50% over 2000-11. Inconsistencies in apprenticeship training and certification requirements across the country impede the inter-provincial mobility of apprentices. Other factors, including Employment Insurance and the functioning of dispute resolution under the Agreement on Internal Trade, may also impede internal mobility.

Fiscal sustainability continues to improve. The federal government has made considerable progress in reducing its budget deficit and is on track to achieve its objective of eliminating the deficit by 2015. Provincial governments have made less progress, have more modest consolidation plans and will have slowly rising debt-to-GDP ratios over the next few years. In the longer term rising health-care costs pose the most serious threat to provincial fiscal sustainability.

Managing non-renewable resources in an era of high commodity prices has created wide regional economic disparities, while much of the public revenues from non-renewable resource extraction are spent on current government programmes, rather than being saved for the benefit of future generations. Incomes have risen in resource-rich provinces, but the resulting currency appreciation has placed pressures on manufacturing. Federal equalisation transfers only partially offset inter-provincial disparities in fiscal capacity. Resource development has created business and employment opportunities for many Aboriginal communities, but some groups feel that they have not benefitted adequately.

Environmental sustainability and meeting international targets for reducing greenhouse gas (GHG) emissions remain challenges. Oil-sands production represents the fastest growing source of emissions. The federal government has taken a sector-specific regulatory approach but has not yet released regulations for the oil and gas sector. While the province of Alberta put a price on emissions in 2007, it has been too low to induce significant investments in abatement technologies. Furthermore, mining companies have failed to meet targets set by the provincial regulator for treating waste.

Key recommendations

Fiscal sustainability

- Continue to implement reforms to slow growth in provincial health-care costs, including patient- or activity-based funding for hospitals, increasing the share of ambulatory care and consolidating input purchases with other provinces.
- Establish a single independent budget office for the provinces.

Housing issues and monetary policy

- Tighten mortgage insurance to cover only part of lenders' losses in case of mortgage default. Continue to increase the private-sector share of the market by gradually reducing the cap on the Canada Mortgage and Housing Corporation's (CMHC) insured mortgages. The government would also need to carefully consider its ability to achieve its housing-finance and financial-stability objectives in the context of a smaller mortgage insurance-market share for CMHC.
- At the municipal level, expand low-cost rental housing supply and densification by adjusting zoning regulations to promote more multi-unit dwellings.
- Increase the policy rate as underlying inflation pressures rise to stabilise the inflation rate at the 2% target-range midpoint.

Skills shortages

- Build on announced new measures to provide better information on expected returns to post-secondary education to improve students' study choices.
- Strengthen the single market for labour by making the Agreement on Internal Trade Dispute Resolution Panel more accessible and expediting its procedures. In addition, continue to work with provinces and territories to harmonise training and certification requirements of all apprenticeship programmes across the country to increase completion rates and inter-provincial mobility for apprentices.
- If recent Employment-Insurance reforms do not clearly cut repeat use, adopt experience-rated premiums and enhance opportunities for seasonal workers to retrain.

Managing non-renewable resources

- Factor in provincial differences in demographics when calculating federal transfers to provinces.
- At the provincial level, increase taxes from non-renewable resource development, and raise the share of revenues saved.
- Provide clear guidelines for resource companies on how to engage with affected Aboriginal groups so that projects bring long-term benefits to these communities.

Environmental sustainability

- Continue expanding the use of market instruments to price carbon emissions. Work with provinces to ensure coherence of provincial climate-change strategies with international commitments.
- Ensure that regulatory objectives for treating waste from oil-sands projects are met.

Assessment and recommendations

- *The economy is growing solidly*
- *The financial system appears sound, but housing-related risks remain*
- *Well-being is high, but income inequality has risen*
- *Reducing skills shortages*
- *Improving fiscal sustainability*
- *Managing non-renewable resource revenues and economic disparities*
- *Ensuring growth is environmentally sustainable*

Canada has experienced fairly solid employment and output growth since the trough of the global recession and is projected to use up spare capacity by mid-2015. Labour force participation has remained near the pre-recession peak, and unemployment is only one percentage point higher than the pre-recession low. Fiscal consolidation is well advanced at the federal level, although less so at the provincial level, and underlying inflation is expected to slowly rise back towards the 2% target midpoint. The sound banking system and strong corporate balance sheets provide a favourable backdrop for a strengthening in business investment. In addition, Canadians enjoy one of the world's highest levels of well-being.

However, high levels of household debt continue to constitute a risk to the outlook. In particular, in the event of a significant negative external shock, such as a large increase in global long-term interest rates, resulting in higher unemployment, Canadian consumers would likely cut back spending to a greater degree than if they had lower debt levels. Such a pullback would be accentuated if already high house prices fell significantly. Similarly, persistently weak non-commodity export performance has limited growth. Output and incomes have soared in resource-rich regions, but little of the fiscal gains have been saved. Skills shortages have developed in a few occupations, especially in the resource-rich provinces of Alberta and Saskatchewan, which could impede growth. Oil-sands development has contributed to growth but has also generated environmental damage that, in some cases, has adversely affected local communities.

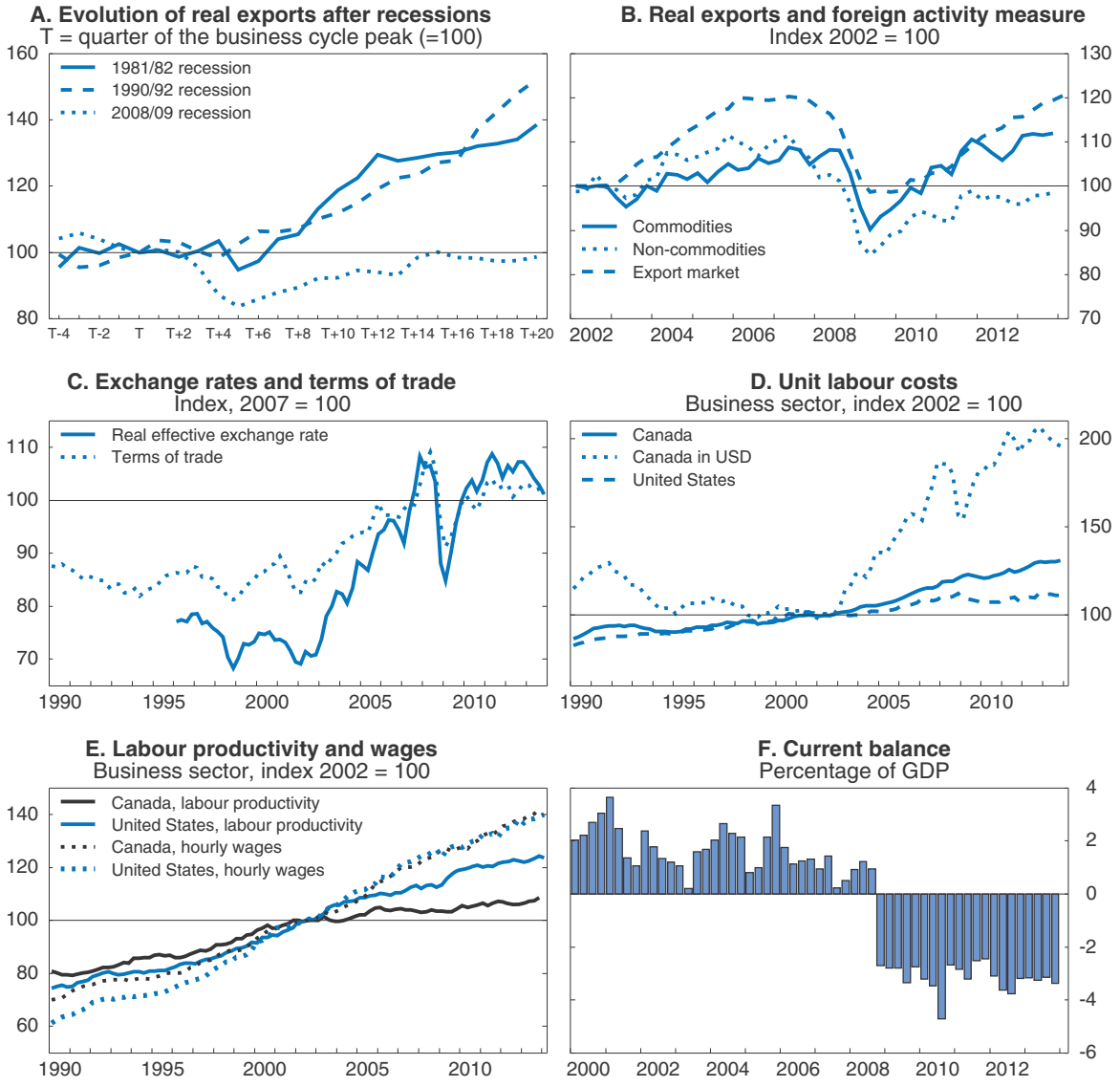
Policymakers have made good progress in responding to these challenges by taking measures to slow the build-up of risks in household finances, strengthen public finances, save a greater share of resource rents for future generations and ease skills shortages. This *Survey* reviews this progress, with a particular focus on housing issues (Chapter 1) and skills shortages (Chapter 2), and, where appropriate, suggests how further reforms could help sustain strong, inclusive growth and high levels of well-being.

The economy is growing solidly

The economic expansion strengthened in the second half of 2013, with growth rising to 2.8% on average, after a soft patch that began in late 2011. This acceleration has been led by private consumption, underpinned by income and wealth gains. Non-commodity export performance has continued to deteriorate (Figure 1), while business investment growth has recently been rather soft, albeit less so than in most other G7 countries (Figure 2).

Exports are now close to their 2007 cyclical peak but are well below levels that might be expected at this stage of the recovery, with non-commodity exports being particularly weak. This weakness is partly attributable to the hesitant global economic expansion, notably in the United States, but is also due to a loss of international competitiveness. Business-sector unit labour costs in US dollars increased by 98% between 2002 and 2011, compared with a US increase of only 9%. Most (73 percentage points) of this difference is attributable to exchange rate appreciation. The remainder largely reflects lower labour productivity growth in Canada (6%) than in the United States (21%); increases in hourly

Figure 1. **Non-commodity export performance has been undermined by a loss of cost competitiveness**



Source: OECD calculations from Statistics Canada, Bank of Canada, US Bureau of Labour Statistics and OECD (2014), *OECD Economic Outlook 95 Database*.

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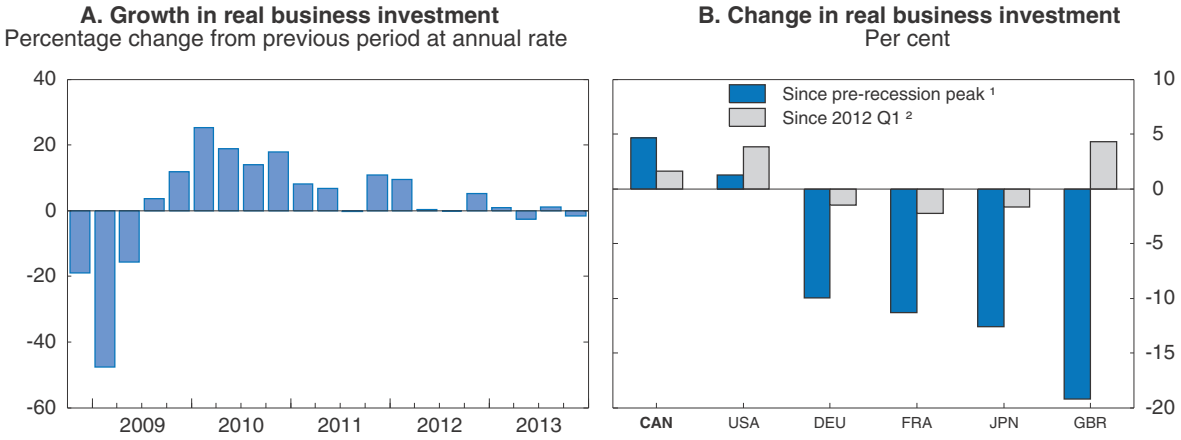
compensation rates were almost the same, at 33% in Canada and 32% in the United States. Despite exchange rate depreciation, this loss of competitiveness was only slightly reversed (3 percentage points) by the fourth quarter of 2013. The IMF (2014a) estimated that the real effective exchange rate was overvalued by some 7% in the last quarter of 2013; since that point the Canadian dollar has depreciated by 4%. As a result of the energy boom, Canada's real effective exchange rate compatible with a sustainable current account position has appreciated substantially over the past decade.

The recent weakness in business investment follows strong growth coming out of the recession, when it rebounded even more strongly than in the United States, the only other

Figure 2. **Real business investment**



Note: Last observation is 2013 Q4 for all countries.

1. The pre-recession peak in real GDP was 2007 Q4 for the United States; 2008 Q1 for the United Kingdom, France, Germany and Japan; and 2008 Q3 for Canada.
2. Average quarterly growth at annual rate.

Source: OECD, *OECD Economic Outlook 95 Database*.

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G7 country where full recovery has occurred. The gains reflect increases in both non-residential construction and machinery and equipment investment and are at least in part attributable to several government actions since 2006, such as lowering the corporate tax rate.

Nevertheless, there is little evidence of any sustained pickup in productivity growth, which was unchanged at a lacklustre 1.5% per year over each of the last two multi-factor productivity (MFP) growth cycles, despite an increase in the contribution of capital deepening (Table 1). This performance lags far behind that in the United States, where labour productivity growth increased to 2.7% per year over the last cycle (1995-2009). The difference in labour productivity growth over the last cycle is entirely attributable to Canada's shortfall in MFP growth. In the current recovery, MFP gains have been broadly in line with the experience of past cycles, whereas in the United States they have been higher than in previous cycles and almost twice as high as in Canada. A persistently low rate of MFP growth is of particular concern, because MFP captures the main sources of rising living standards over the medium term, and it remains Canada's single largest long-term challenge. This challenge was discussed in the 2012 *Survey*, which also provided policy recommendations for enhancing innovation outcomes and improving tertiary education. Progress in implementing these reforms is discussed in the Annex.

Job creation has been robust since 2009, nudging the employment rate up (Figure 3). The unemployment rate has fallen from a recession peak of 8.7% to 6.9%, which is still about a percentage point above the pre-recession low. The share of long-term unemployed (26 weeks or more) in total unemployment, at 20%, is below the post-recession high and far below outcomes elsewhere. Annual real hourly compensation growth picked up to 1.9% in the fourth quarter of 2013, which was less than hourly productivity gains (2.4%). Growth in business-sector unit labour costs eased to around 0.5%.

Underlying consumer price inflation has fallen to the lower end of the official 1-3% target range owing to economic slack and heightened competition in the retail sector (Figure 4). The Bank of Canada (2014) estimates that each of these factors has reduced inflation by

Table 1. **Productivity growth has been weak**

Business sector, annual average, per cent

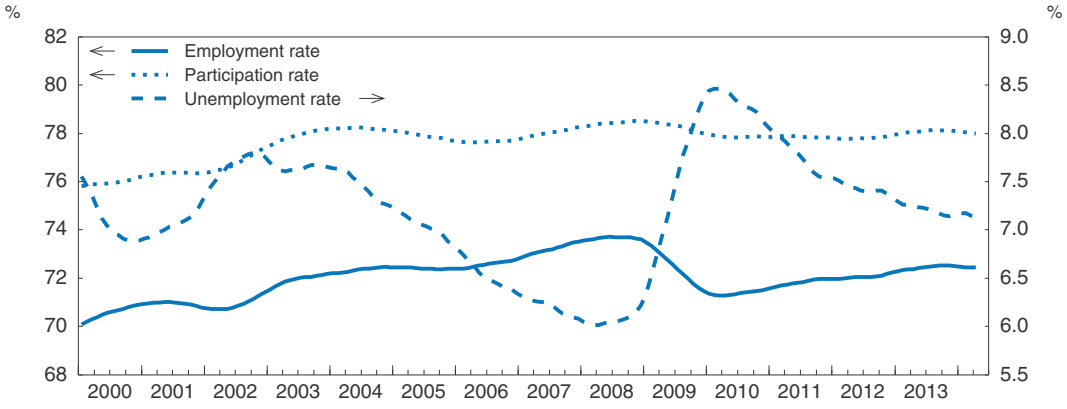
	Labour productivity growth	Contribution of capital deepening	Multifactor productivity growth
Canada[1]			
1991-96	1.5	0.9	0.7
1996-2009	1.5	1.5	0.0
2009-11	1.4	0.5	0.9
1996-1998	2.5	1.6	1.0
1991-1993	2.0	1.3	0.8
United States[1]			
1991-95	1.4	0.6	0.8
1995-2009	2.7	1.5	1.2
2009-11	1.8	0.2	1.6
1995-97	2.5	1.2	1.3
1991-93	2.3	0.9	1.4

1. The first two periods correspond to multifactor productivity (MFP) growth cycles, which begin and end in trough years, when MFP is lowest relative to its trend. The other periods are the first two years of each productivity cycle.

Source: Statistics Canada and the US Bureau of Labor Statistics.

Figure 3. **Canada has enjoyed solid labour-market performance**

Population aged 15-64, 12-month moving average



Source: Statistics Canada.

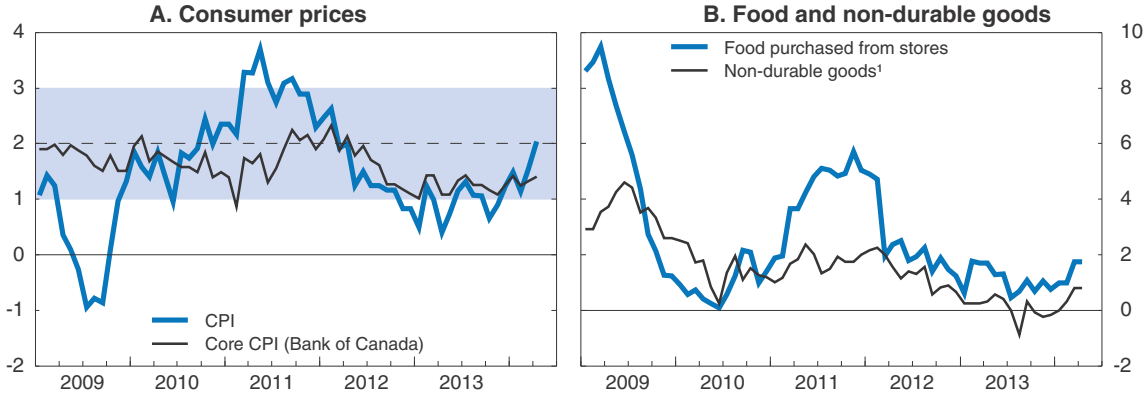
StatLink http://dx.doi.org/10.1787/888933079022

0.3 percentage points (for a total of 0.6 points) over the past year. Inflation expectations remain well anchored, with the latest 2015 Consensus Economics forecast reaching the 2% target.

Monetary policy remains highly accommodative (Figure 5). The Bank of Canada has held the policy rate at 1% since September 2010. Business credit is growing faster than its historical average, but household credit growth has been tepid, in line with deleveraging. Given the current low underlying inflation rate, uncertainty surrounding the amount of economic slack and signs of housing-market stabilisation, the Bank should maintain its supportive policy stance for the time being. But as slack diminishes, headwinds dissipate and inflation pressures rise, monetary accommodation will need to be progressively withdrawn to stabilise inflation around 2%. Earlier tightening would have desirable household deleveraging effects but would be likely to lead to undershooting of the inflation target.

Figure 4. **Headline inflation has returned to the centre of the target range**

Year-on-year percentage change



1. Excluding food purchased from stores and energy.

Source: Statistics Canada, Bank of Canada.

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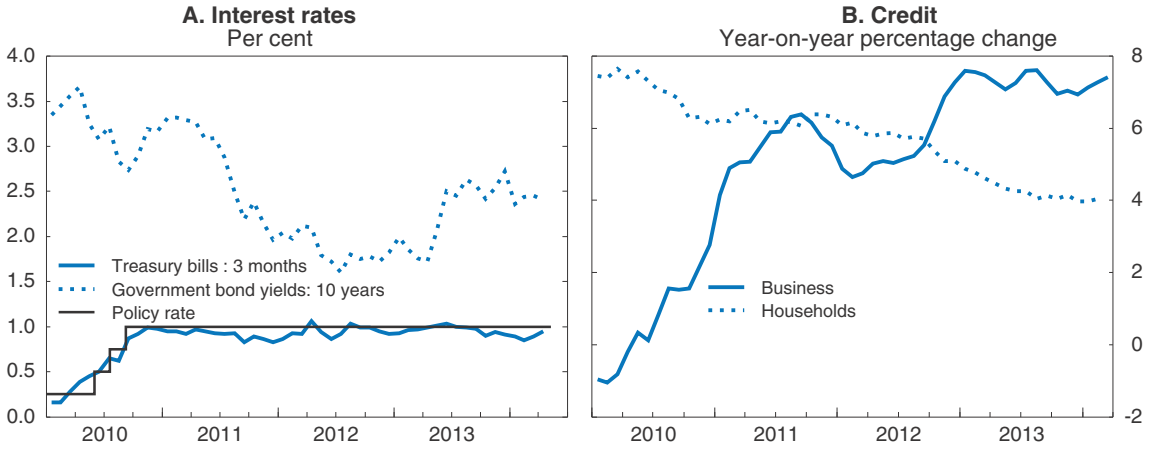
Figure 5. **Monetary policy remains accommodative**



Source: Statistics Canada and Bank of Canada.

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Annual real GDP growth is projected to increase to 2.7% in 2015 – somewhat above potential rates of about 2% (Table 2). Non-commodity exports should be supported by the recent currency depreciation and stronger foreign market growth, notably in the United States, which takes 60% of Canadian exports (on a value-added basis). Energy exports are also likely to pick up, reflecting announced expansion plans, the growing use of Canadian heavy oil in US refineries and further growth in rail capacity. As uncertainty surrounding the global economic outlook diminishes, non-financial firms are well placed to increase investment to boost capacity and cost competitiveness, given their large cash buffers and supportive financial conditions. Consumption growth is likely to remain solid, while housing investment should fall. With economic slack absorbed, underlying inflation is projected to rise to near 2% by late-2015.

The main upside risk to the economic outlook is that US investment growth rebounds with unexpected vigour thanks to healthy corporate balance sheets. One of the main

Table 2. **Macroeconomic indicators and projections**

Annual percentage change, volume (2005 prices)

	2010					
	Current prices (billion CAD)	2011	2012	2013	2014	2015
GDP	**1 663**	**2.5**	**1.7**	**2.0**	**2.5**	**2.7**
Private consumption	939	2.3	1.9	2.2	2.7	2.7
Government consumption	366	0.8	1.1	0.8	0.8	0.7
Gross fixed capital formation	388	4.2	4.3	0.0	1.8	2.8
Housing	115	2.0	5.2	-0.3	0.2	-1.7
Business	195	10.0	5.1	0.8	3.0	5.2
Government	77	-6.9	0.6	-1.5	0.6	2.3
Final domestic demand	1 693	2.4	2.3	1.4	2.1	2.3
Stockbuilding[1]	1	-0.1	0.0	0.4	0.1	0.0
Total domestic demand	1 694	2.3	2.2	1.8	2.2	2.3
Exports of goods and services	483	4.7	1.5	2.1	4.1	6.6
Imports of goods and services	515	5.7	3.1	1.1	3.1	5.0
Net exports[1]	-32	-0.4	-0.5	0.3	0.3	0.4
Other indicators (growth rates, unless specified)						
Potential GDP	-	1.8	1.9	1.9	2.0	2.1
Output gap[2]	-	-0.7	-0.9	-0.8	-0.4	0.2
Employment	-	1.5	1.2	1.3	0.9	1.3
Unemployment rate	-	7.5	7.3	7.1	6.9	6.6
GDP deflator	-	3.2	1.7	1.2	1.6	1.8
Consumer price index	-	2.9	1.5	1.0	1.6	1.8
Core consumer prices	-	1.7	1.7	1.2	1.4	1.7
Household saving ratio, net[3]	-	4.4	5.0	5.2	5.0	5.1
Trade balance[4]	-	-1.2	-2.0	-1.7	-1.7	-1.3
Current account balance[3]	-	-2.8	-3.4	-3.2	-3.2	-2.9
General government financial balance[4]	-	-3.7	-3.4	-3.0	-2.1	-1.2
Underlying government primary balance[2]	-	-3.0	-2.5	-2.4	-1.6	-0.9
General government gross debt[4]	-	93.6	96.1	93.6	94.2	93.6
General government net debt[4]	-	42.5	43.6	40.4	40.9	40.3
Three-month money-market rate, average	-	1.2	1.2	1.2	1.2	1.8
Ten-year government bond yield, average	-	2.8	1.9	2.3	2.7	3.3

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

Source: OECD (2014), *OECD Economic Outlook 95 Database.*

downside risks is that non-commodity exports take longer to recover than projected owing to weak competitiveness and reduced production capacity in some export sectors. Another is that the global economy may not recover as projected. China may be facing more growth headwinds than assumed, notably owing to financial-market stresses, and instability could re-emerge in the euro area. The main domestic downside risk is that there could be a disorderly housing-market correction (see below). There is also a risk that at some point the commodity "super cycle" could come to an end, and prices could reverse some or perhaps all the gains over the past decade or so. Canada's flexible labour and product markets and well-educated labour force would be major advantages for effecting the necessary economic rebalancing in the face of such a shock.

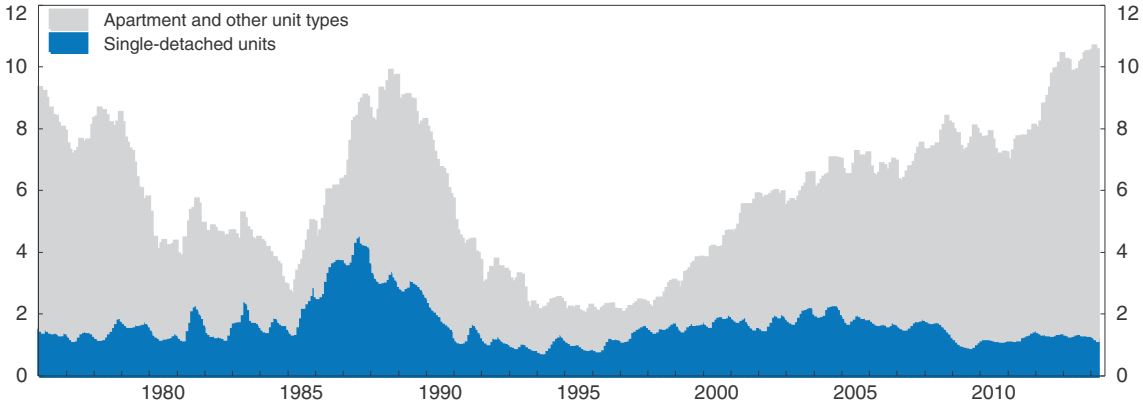
The financial system appears sound, but housing-related risks remain

High house prices and household debt create concerns

As in many other countries, real house prices have increased substantially over the past decade. Following an almost uninterrupted boom, they have reached record levels relative to incomes, and residential investment has expanded to 7% of GDP. This has fuelled debates over whether a bubble exists, with some observers claiming that housing is overvalued (e.g. Roubini, 2013; O'Brien, 2013), and others suggesting that prices are consistent with fundamentals, including unusually low interest rates (e.g. Wiebe, 2014; Dunning, 2014). While house prices look remarkably high in certain markets, the probability of a major broad-based correction appears low: the quality of mortgage loans remains high, and recent macro-prudential tightening has moderated household borrowing. Risks remain in the condominium sector in cities like Toronto, where the number of apartments under construction is three times the long-term average (Figure 6). This supply overhang has recently slowed condominium price increases. The main source of price pressure comes from single-detached dwellings in major cities (Demographia, 2014), where supply has lagged demand in part due to growing regulatory constraints on land use (see below). Despite diverging trends across markets, a shock to even one segment could have spill-over effects to the broader economy if banks respond by tightening credit significantly, or if negative wealth effects depress consumption.

Figure 6. **Housing units under construction in Toronto**

Per 1 000 population



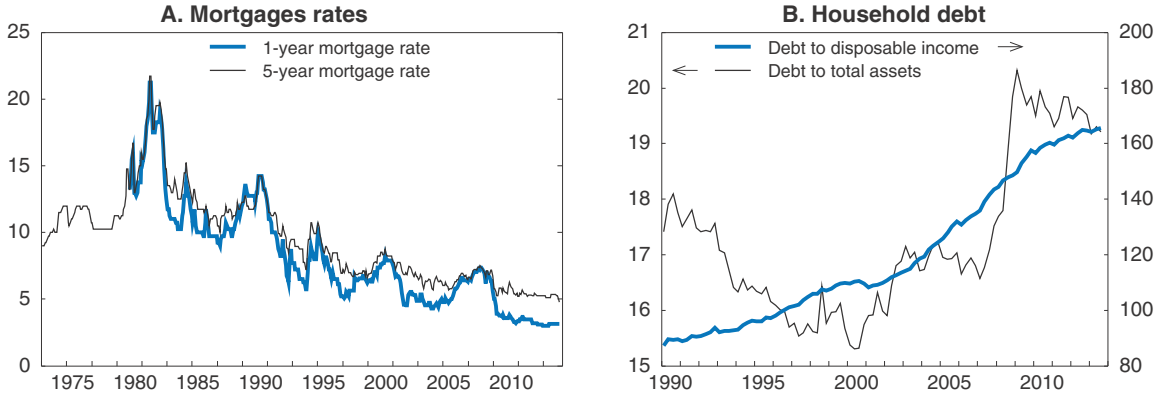
Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079079

Furthermore, high indebtedness exposes households to the risk of rising interest or unemployment rates, or of falling house prices. Mortgage payments are currently affordable for most, given record low mortgage rates (Figure 7). Some private-sector estimates suggest that a 2 percentage point rate hike could push 10% of mortgage holders into what are commonly considered unaffordable (over 40%) debt-service ratios (Alexander, 2012), although these estimates may be upwardly biased, as household incomes have continued to grow since these estimates were made. Low borrowing costs and loosening credit restrictions over the mid-2000s made it easier for homeowners to carry larger mortgages, driving household debt to a historical high of 166% of disposable income. Easier credit over this period partly reflected growing mortgage securitisation by the Canada Mortgage and

Figure 7. **Mortgage rates and household debt**

Per cent



Source: Statistics Canada.

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Housing Corporation (CMHC), which is wholly owned by the federal government. Furthermore, government-backed insurance was extended to a wider range of what are often labelled "non-prime" mortgage products, including interest-only and 40-year mortgages, plus loans to the self-employed requiring little income documentation.

To contain housing-related risks, the federal government has tightened mortgage-insurance regulations since 2008. It cut the maximum amortisation period on insured mortgages to 25 years and imposed a minimum 5% down payment. In 2012, the Office of the Superintendent for Financial Institutions (OSFI) issued guidelines to strengthen mortgage underwriting practices that toughened loan-eligibility criteria and also began formal supervision of CMHC's commercial activities. Together, these measures helped cool the housing market and credit growth, although home sales and prices have rebounded in certain markets since mid-2013. If household debt were to reaccelerate relative to income growth, further tightening measures may be needed to reduce the risk that some homeowners cannot withstand projected interest-rate hikes. For example, the authorities could impose an interest-rate floor on all income tests to qualify for mortgages, as suggested by Alexander (2012). However, the authorities have at their disposal a wide range of other instruments as well. In that context, in April 2014 OSFI released a draft guideline for public consultation to strengthen mortgage insurance underwriting.

Bank asset quality has remained high

Thanks to strong regulation, conservative lending practices and extensive government backing of the mortgage market, the banking system fared well throughout the global financial crisis. The share of mortgages in arrears has remained low (0.32% in early 2014). Banks rely on a stable supply of retail deposits for mortgage funding, rather than securitisation. In early 2014 OSFI announced plans to replace its longstanding Asset Capital Multiple with the Basel III leverage standard of 3%, which includes more off-balance sheet exposures and defines capital more narrowly. Canada has adopted the Basel III capital standard and established a Domestic Systemically Important Bank framework. The IMF's 2014 Financial Sector Assessment Programme (FSAP) review concluded that Canada's major financial institutions were sufficiently well capitalised to withstand the credit, liquidity and contagion effects of a severe shock (IMF, 2014b).

Widespread government-backed mortgage insurance has allowed the government to maintain control over underwriting standards and helped limit the growth in subprime lending. Although CMHC began insuring certain types of Canadian "non-prime" mortgages over 2004-07 (Chapter 1), it generally imposed higher minimum credit scores on such borrowers. Most subprime loans were not eligible for government-backed insurance, and they therefore expanded only to an estimated 5% of the pre-crisis market, compared with 22% in the United States (MacGee, 2009). As a result, the quality of insured mortgage originations remained steady throughout the boom, and it has improved since the crisis as banks pared risk exposure. Also, whereas much of the growth in US mortgage debt went to new low-income homebuyers, in Canada most reflected net refinancing by existing owners taking on longer or larger mortgages.

Mortgage securitisation, much of which is guaranteed by CMHC, has grown substantially since the crisis and warrants close monitoring. Securitisation generally raises complexity and interconnections in the financial system and has supported the rapid expansion of non-traditional mortgage lenders, which are not regulated by OSFI, generally have higher leverage and specialise in non-prime lending (though such loans are not securitised). Nevertheless, in 2013 such lenders accounted for only 5% of outstanding mortgages (Bank of Canada, 2013). Some are regulated at the provincial level, but provincial regulators may not have the capacity and resources for rigorous supervision; greater cooperation and information sharing between OSFI and its provincial counterparts would be beneficial (IMF, 2014b). The same goes for provincial securities regulators. Despite legal setbacks in forming a national securities regulator, the establishment of a cooperative arrangement between the federal government and those of Ontario and British Columbia is a welcome step that should help support financial system stability.

Shifting more housing risk to the private sector would strengthen financial stability

The extent of federal government involvement in mortgage markets via mortgage insurance and CMHC securitisation operations is unusual by international standards. Some 65% of mortgages in Canada are insured, three-quarters of them by CMHC and the rest by private-sector insurers. The government fully backs all CMHC-insured mortgages and, in the event that a private insurer becomes insolvent, 90% of the value of the mortgages it insures (i.e. the government would honour lender claims for privately insured mortgages under insolvency, less 10% of the original principal amount of the mortgage and any applicable liquidation proceeds). Furthermore, mortgage insurance covers 100% of the loan balance (less the 10% in the event of private insurer insolvency), compared with losses of only up to 10-30% of outstanding balances in most other countries (BIS, 2013).

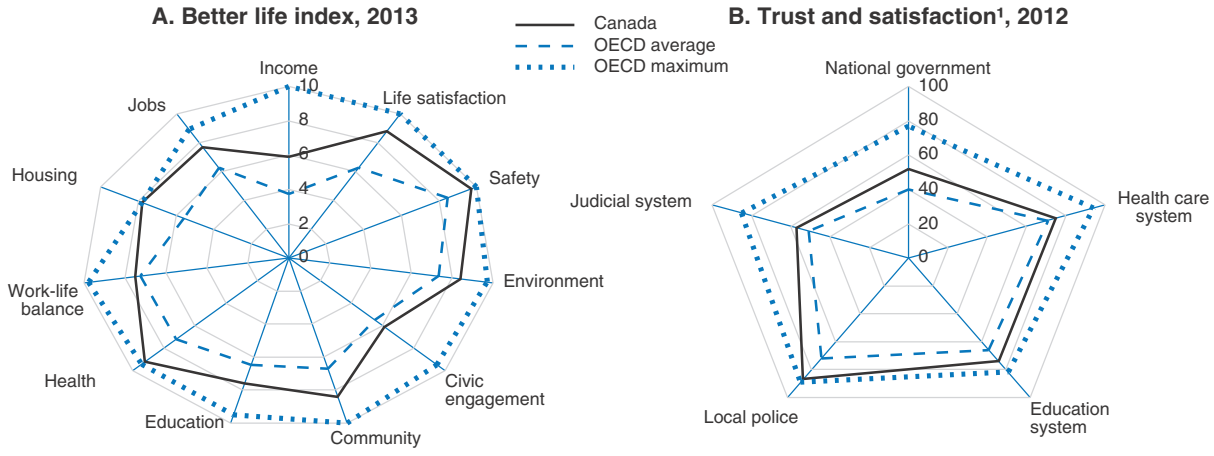
This extensive role exposes the taxpayer to potentially large risks, although the track record has been good so far. The government has taken some measures to reduce this exposure, for example by introducing a risk fee on CMHC's mortgage insurance activities that exceeds what private insurers pay. Imposing a deductible on mortgage insurance, as is common in other lines of insurance, would help promote stability by better aligning the interests of the lenders and those of the insurer, thereby reducing moral hazard. CMHC's currently dominant role could be reduced by progressively lowering the amount of insurance it can write (currently capped at CAD 600 billion) and raising that of the private providers (currently CAD 300 billion). Over the longer run the insurance activities of CMHC could be privatised, shifting the government's role to one of guaranteeing only against catastrophic losses. Such a change would not reduce the government's control over

prudential lending standards, since it could continue to require all private insurers to adhere to regulations to qualify for the government guarantee. To avoid disruptions, such a change would need to be conducted gradually, following proper consultation with major stakeholders. The government would also need to carefully consider its ability to achieve its housing-finance and financial-stability objectives in the context of a smaller mortgage-insurance market share for CMHC.

Well-being is high, but income inequality has risen

Canadians enjoy high levels of well-being and social progress according to the OECD's Better Life Index (Figure 8). All of Canada's component scores exceed the OECD average, with particularly high outcomes in safety, health and housing. Its overall score (based on equal weights for the dimensions considered) ranks more favourably (3rd) than does its GDP per capita in PPP terms (11th), underlining the importance of considering other measures of well-being than income.

Figure 8. **Canadians enjoy high levels of well-being and social progress**



1. Percentage points.

Source: OECD (2013), *Better Life Index*, *www.betterlifeinitiative.org* and OECD (2013), *Government at a Glance*.

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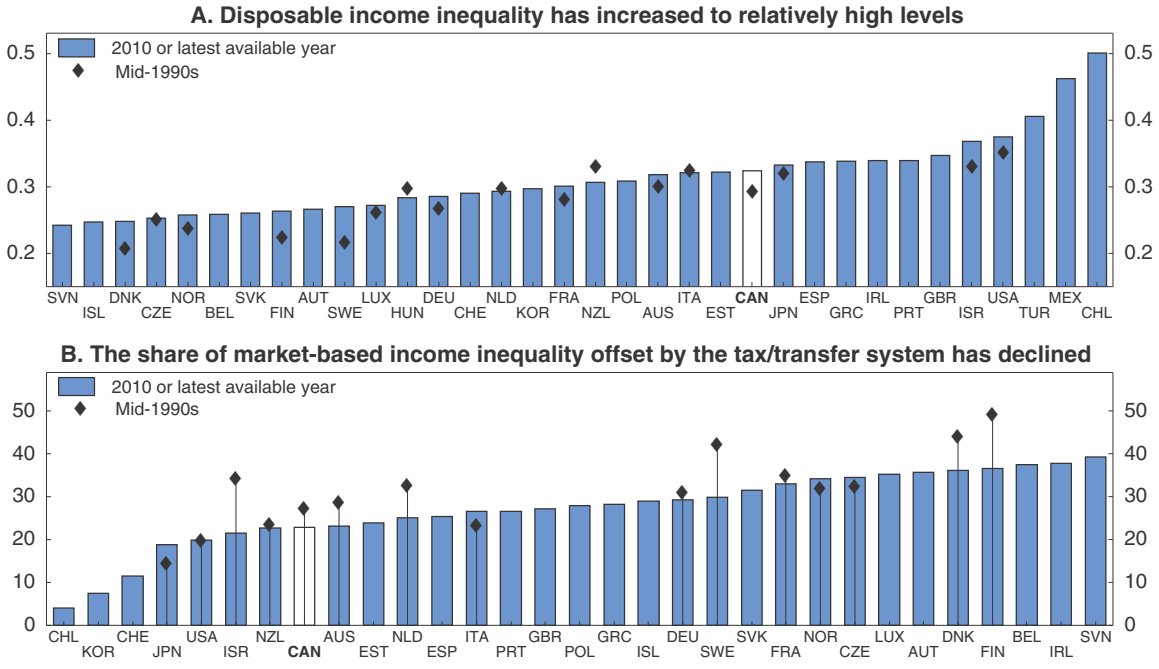
However, disposable income inequality has increased by considerably more in Canada since 1995 (11%) than in other countries with data (2%) to a level that is now 12th highest in the OECD. Yet, this increase occurred entirely in the late 1990s. It reflects both higher market income inequality and a lower share that is offset by the tax/transfer system (Figure 9). The decline in the role of transfers (which are largely means tested) in the late 1990s reflects improved economic conditions. When comparing across similar years in the business cycle, the effectiveness of Canada's tax and transfer system has remained largely unchanged over the last three decades.

Housing affordability is a concern

Overall, Canadian residents generally enjoy good quality and affordable housing: the share of household income spent on shelter costs is close to the OECD average (Figure 10), and a higher-than-average 90% are satisfied with their current dwelling conditions (OECD, 2013a). However, residents of some major cities like Vancouver face very high median

Figure 9. **Income inequality has increased, and redistribution has declined**

Population aged 18-65



Note: The Gini coefficient takes values between 0 for maximum equity (all households receive the same income) to 1 for maximum inequality (one household receives all income).

Source: *OECD Income* and *Poverty Distribution Databases*.

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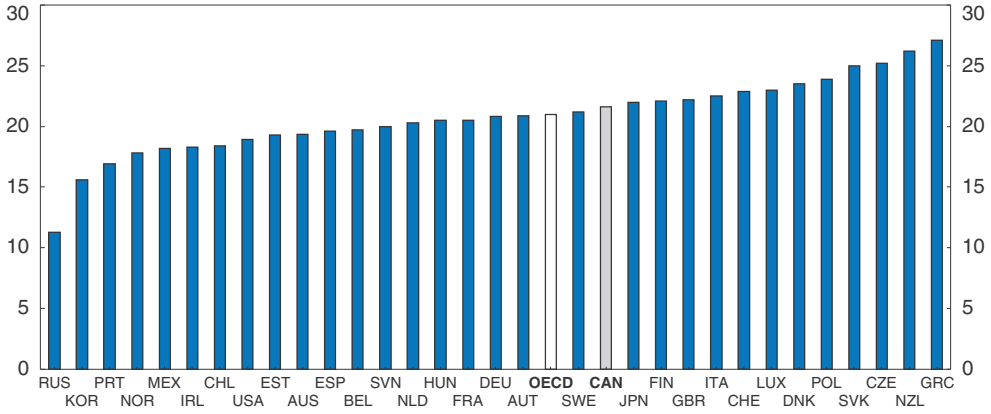
Figure 10. **Housing expenditures**

As a percentage of household gross adjusted disposable income,[1] 2011 or latest available year



Note: Housing expenditures include actual and imputed rents, expenditure on maintenance and repair of the dwelling, on water supply, electricity, gas and other fuels, furniture, furnishings and household equipment, goods and services for routine maintenance of the house.

1. Gross of depreciation but after taxes and transfers as well as social transfers in kind such as education and health care.

Source: OECD (2013), *How's Life? 2013 – Measuring Well-being*.

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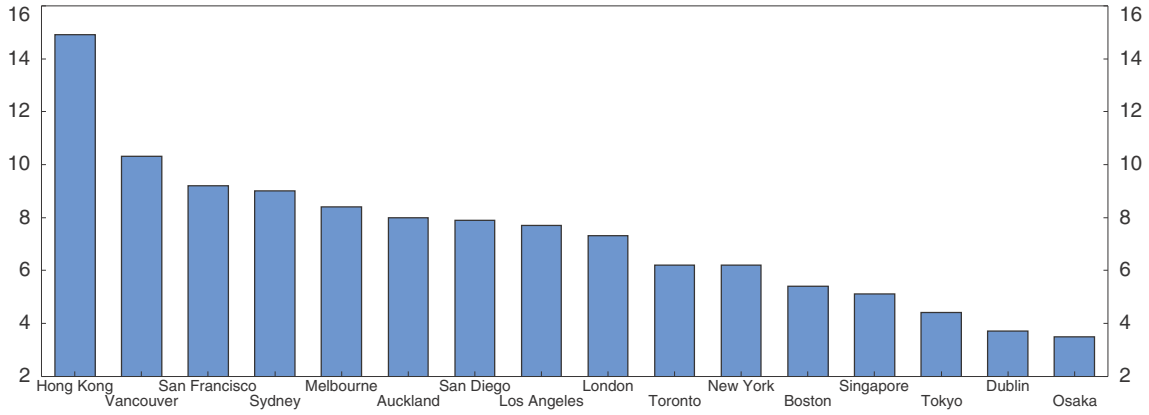
house prices relative to median household incomes by international comparison (Figure 11). Based on this metric, almost 40% of the country's population lives in a city where house prices are seriously or severely unaffordable (Demographia, 2014).

Figure 11. **Housing affordability: median house price relative to median household income**

2013 Q3



Source: Demographia (2014), *10th Annual International Housing Affordability Survey: 2014*.

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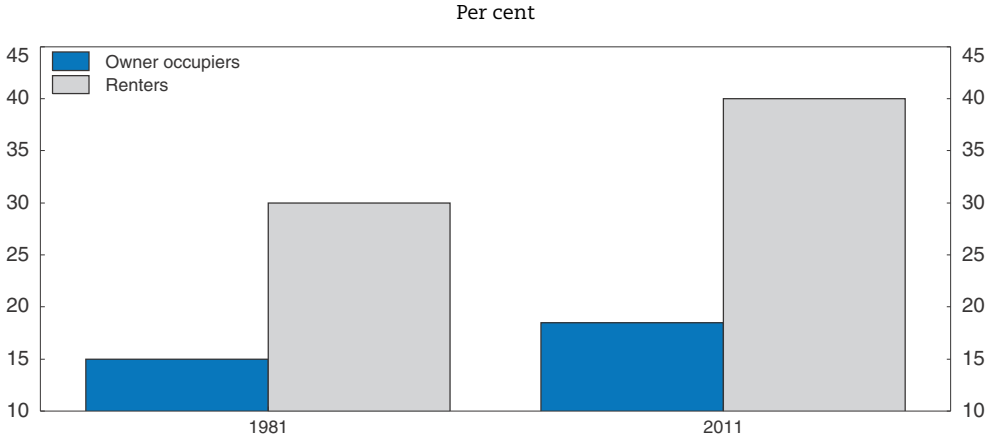
Price premiums for single-detached homes (relative to multi-unit dwellings) have risen most markedly in Vancouver, and to a lesser extent Toronto, where regional planning policies have increasingly restricted land use through urban containment boundaries (Chapter 1). Such policies generally aim to achieve more sustainable growth by reducing urban sprawl and encouraging densification. Most Canadian urban areas have low-density housing that makes public transit uneconomical. This has created heavy dependence on automobile use, thus contributing to very high per capita transport-related carbon emissions by OECD standards (see below) and reduced mobility for those unable to access a car. Because housing is cheaper further from the city centre, low-income households, at least in Toronto, have gradually been pushed to distant suburbs with the poorest access to transit, services and jobs (Hulchanski, 2010). Even if policies encouraging more compact growth generate higher property prices within the containment area, they may improve environmental and social outcomes if well integrated with public transit planning.

Rising house prices have worsened affordability disproportionately for renters, who tend to have lower incomes than homeowners (Figure 12). Multi-unit housing construction has increasingly favoured condominiums over purpose-built rental buildings over the past decade. Although a significant share of condominiums in major cities is rented out, they typically have higher rents and represent a less stable housing supply for tenants. Policies such as allowing homeowners to rent out secondary suites have raised densities and the supply of lower-cost accommodation in cities like Vancouver, and such measures should be encouraged more broadly. As urban cores reach their densification capacity, planning efforts should be directed towards improving employment densities and suburban public transit connectivity (Chapter 1).

Figure 12. **Share of households spending above 30% of pre-tax income on shelter costs**



Note: Shelter costs for owner households include, where applicable, mortgage payments and costs of electricity, heat, water, other municipal services, property taxes and condominium fees. For tenant households, they include rent and costs of electricity, heat, water and other municipal services.
Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079193

Recommendations on monetary policy and housing-related financial-stability risks

Key recommendations

- Tighten mortgage insurance to cover only part of lenders' losses in case of mortgagor default. Continue to increase the private-sector share of the market by gradually reducing the cap on the Canada Mortgage and Housing Corporation's (CMHC) insured mortgages. The government would also need to carefully consider its ability to achieve its housing-finance and financial-stability objectives in the context of a smaller mortgage insurance-market share for CMHC.
- At the municipal level, expand low-cost rental housing supply and densification by adjusting zoning regulations to promote more multi-unit dwellings.
- Increase the policy rate as underlying inflation pressures rise to stabilise the inflation rate at the 2% target-range midpoint.

Other recommendations

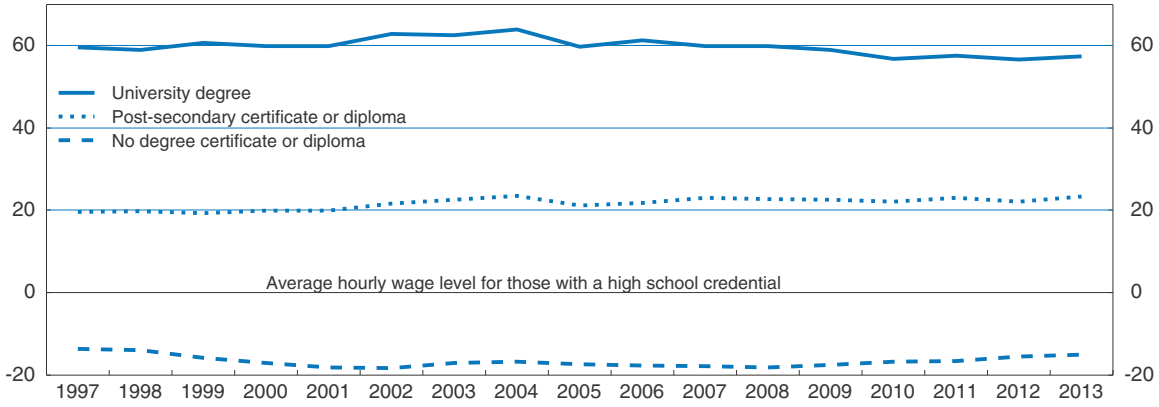
- Employ further macro-prudential measures as needed if household debt ratios continue to rise.
- Increase cooperation and information sharing between federal and provincial financial regulators.

Reducing skills shortages

Earnings premiums suggest generalised shortages of post-secondary education (PSE) skills have not developed in recent years. Earnings premiums for people with PSE over those with only a high-school diploma have been broadly stable since 1997, reflecting a small increase in the premium for a post-secondary certificate/diploma and a small decrease for a university degree (Figure 13). Nevertheless, pressures might still exist in specific fields of study. In fact, university-degree premiums increased substantially

Figure 13. **Post-secondary education earnings premiums have been stable**

Relative to earnings of a high school graduate



Source: OECD calculations using *Labour Force Survey* data from Statistics Canada.

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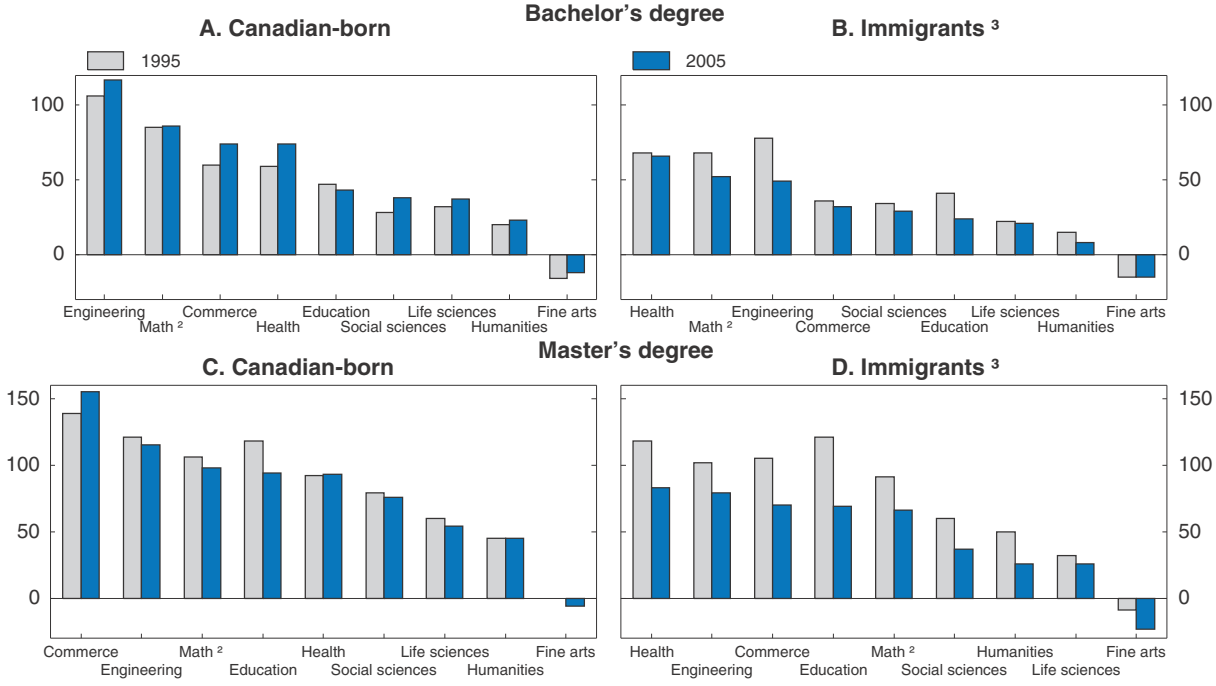
between 1995 and 2005 for Canadian-born workers, especially in engineering, management and health care (Figure 14). By contrast, the corresponding earnings premiums for immigrants were stable or declined and remained much lower than for the native born, indicating that their qualifications and foreign work experience do not have the same value in the labour market. With the change in immigrant source countries since

Figure 14. **Earnings premiums for university degrees by field of study**[1]

Population aged 25-64 in the labour force, percentage gap over average earnings for high school graduates



1. Earnings are not adjusted for the number of hours worked.
2. Including computer science and physics.
3. Immigrants include both those who earned their degrees abroad and those who earned them in Canada.

Source: Internal Employment and Social Development Canada (ESDC) analysis using census data.

the early 1990s, foreign qualifications increasingly are not equivalent to Canadian qualifications, and immigrants often do not have adequate skills in English or French to perform well in highly skilled roles. However, this earnings gap diminishes markedly over time since arrival as immigrants improve their official-language skills, gain Canadian work experience and become qualified to local standards (see Chapter 2).

Skills shortages also have also an important regional dimension. Ontario and the Atlantic provinces have had the largest rises in earnings premiums at the post-secondary certificate/diploma level and the smallest declines at the university degree level (Table 3). But it is wage differences, not differential skills premiums, that matter for interprovincial migration. Real earnings have risen more in the Prairie provinces than elsewhere at all education levels, boosting mobility incentives across the board. The earnings increases were greatest at the post-secondary certificate/diploma and high-school graduate levels, suggesting that labour shortages were most intense there.

Table 3. **Regional changes in real earnings and in earnings premiums relative to high-school graduate earnings**

1997-2013, per cent

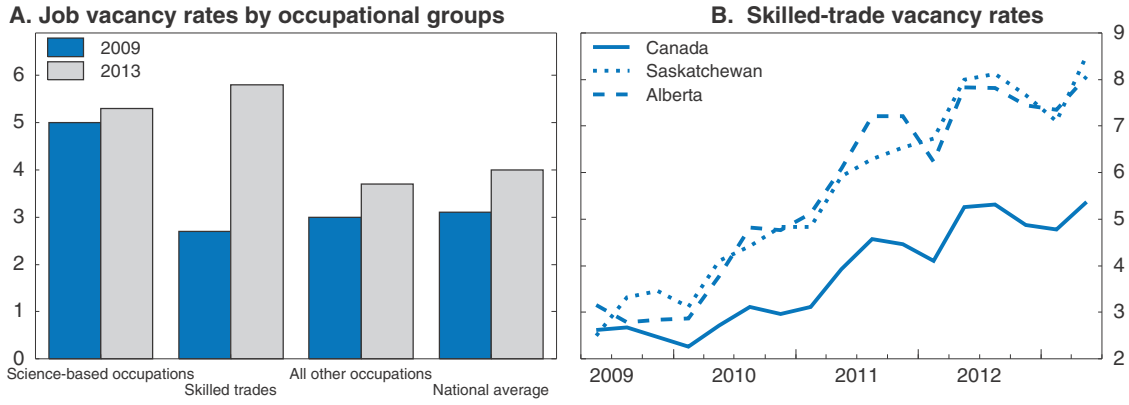
	Increase in real earnings	Increase in earnings relative to earnings for a high-school graduate
Post-secondary certificate/diploma (PSCD)		
Atlantic Provinces	17.0	2.0
Québec	6.2	1.8
Ontario	5.7	3.3
Prairie Provinces	24.4	0.5
British Columbia	10.2	0.4
Canada	10.4	1.2
University degree		
Atlantic Provinces	14.0	-0.6
Québec	2.9	-1.4
Ontario	2.0	-0.2
Prairie Provinces	15.0	-7.1
British Columbia	5.5	-3.8
Canada	5.6	-3.2
Memorandum:		
High-school diploma		
Atlantic Provinces	14.8	-
Québec	4.4	-
Ontario	2.3	-
Prairie Provinces	23.8	-
British Columbia	9.7	-
Canada	9.0	-

Source: OECD calculations using *Labour Force Survey* data from Statistics Canada.

Job-vacancy data indicate that skills shortages have worsened in the skilled trades, where vacancy rates now exceed those in science-based occupations (e.g. engineers) (Figure 15). Skilled-trade vacancy rates have risen more and are higher in Alberta and Saskatchewan than in the rest of the country.

Figure 15. **Vacancy rates have increased most in the skilled trades and in Alberta and Saskatchewan**

Per cent



Note: The job vacancy rate is the number of online job postings divided by labour demand, i.e. online postings plus employment.

Source: Department of Finance (2014), *Jobs Report: The State of the Canadian Labour Market* and D. Burleton et al. (2013), "Jobs in Canada, Where, What and For Whom", *TD Economics Special Report*, 22 October.

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Further reforms to reduce skills shortages

Labour-market information (LMI) can help to reduce skills shortages by facilitating job matching and informing education decisions (Sharpe and Qiao, 2006). Employment and Social Development Canada's new website providing easily accessible information linking fields of study to occupational outcomes will improve LMI. Moreover, Statistics Canada began to publish job-vacancy data in 2011, although this would be more effective if they were more occupation- and economic-region-specific. For human-capital investment decisions a major need is better career counselling, which can be very cost effective for directing students into the best courses, which in some cases may be in colleges or by apprenticeships rather than university courses (Johnson et al., 2006; Chapter 2).

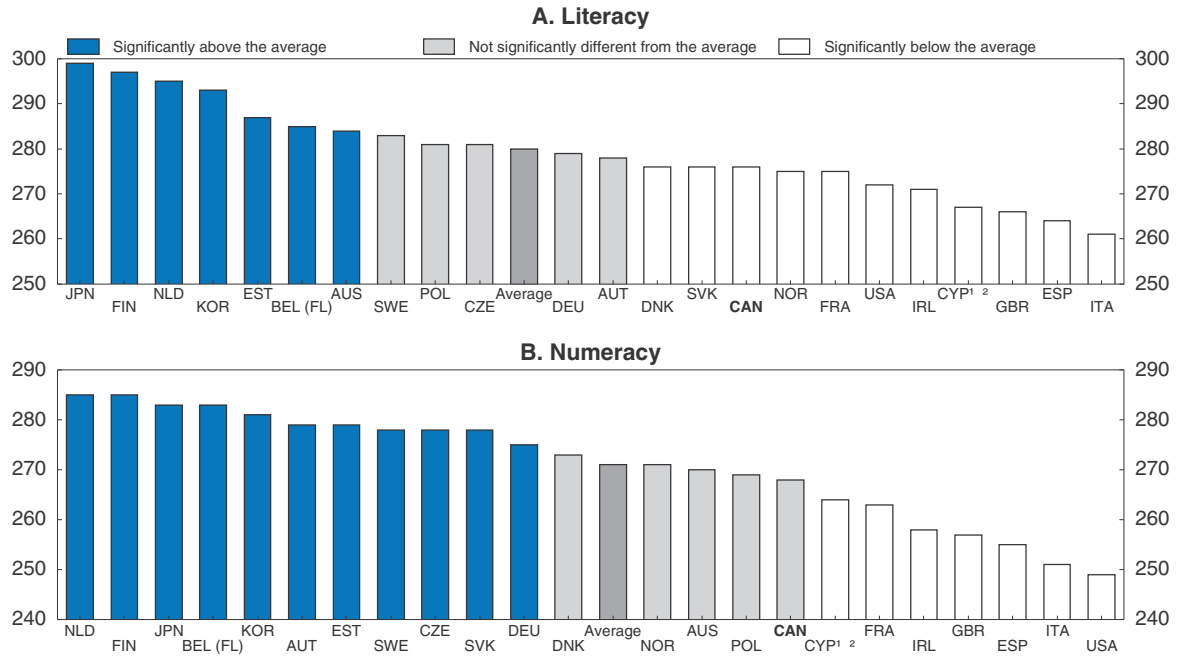
Strong basic literacy and numeracy skills help people to acquire qualifications. While Canadian 15 year-olds score well in the PISA studies, average adult (PIAAC) literacy and numeracy scores for the 16-24 age group are less impressive (Figure 16). Upper secondary education should therefore place greater emphasis on developing these skills, perhaps by requiring students to study mathematics and English/French until school completion, and post-secondary institutions should consider investing more in remedial education.

For youths to be able to enter fields in high demand post-secondary institutions need to make the necessary places available. These places are likely to be more expensive if they are in science/technology/engineering/mathematics (STEM) fields than elsewhere (Center for STEM Education and Innovation at American Institutes for Research, 2013). Universities would need larger budgets to adapt the places they make available to such a shift in demand.

Many employers would also like to see graduates with better soft skills, such as communications and teamwork (Canadian Council of Chief Executives, 2014). As recommended in the 2012 *Survey*, increasing the weight of practice-intensive programmes would be effective for developing creativity, teamwork and leadership skills (Avvisati et al., 2013). Experiential learning (such as co-op placements) during university education has proven to be highly effective in developing the soft skills valued by employers (Sattler, 2011).

Figure 16. **Literacy and numeracy scores for 16-24 year-olds, 2012**

Mean proficiency scores



Note: Statistical significance at the 5% level. Literacy-related non-response (because of a lack of background information due to language difficulties, or learning or mental disabilities) is excluded from the calculation of mean scores. However, these figures present an estimate of lower-bound mean scores by attributing a very low score (85 points) to such adults.

1. *Note by Turkey:* The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".
2. *Note by all the European Union Member States of the OECD and the European Union:* The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Source: OECD (2013), *OECD Skills Outlook 2013*, Figures 2.3a and 2.7a.

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The new Canada Job Grant is intended to orient public training expenditures towards meeting labour market demand, which would improve job matching. It will enable employers to participate in decisions about who gets training and what type of training, to ensure that training is better aligned with job opportunities. Two-thirds of the costs will be paid by governments, with the remainder cost-shared by employers. Provincial/territorial governments have some flexibility as to how the government contribution is funded, be it from the new Canada Job Fund Agreements, the Labour Market Development Agreements or other provincial/territorial own-source revenues. As part of implementation, the Canada Job Grant will be reviewed in the second year to allow time to make adjustments as necessary to ensure that it is meeting the needs of employers and jobseekers.

Strong demand for tradespersons and an expansion of trades covered by the Red Seal programme (which harmonises trade certification regimes by developing common provincial standards, but is primarily focused on certification and not apprenticeship training) led to a doubling in the number of apprenticeship registrations and completions between 2000 and 2011. However, the average completion rate remained at only about 50%, which may be in part due to the significant costs and lack of income during in-class training. The government offers a suite of supports to apprentices and employers to

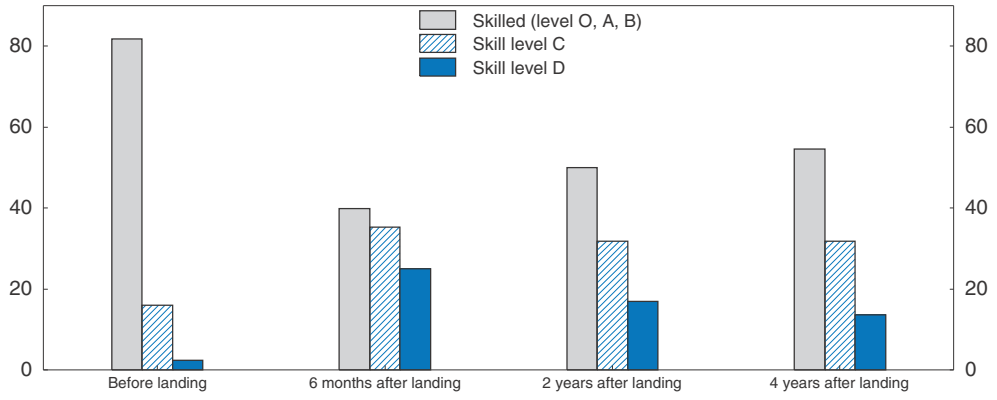
promote apprenticeships and stimulate employment in the skilled trades. More recently, the 2014 federal budget announced the Canada Apprentice Loan to provide apprentices registered in their first Red Seal trade with interest-free loans of up to CAD 4 000 per period of technical (in-class) training.

Apprentices moving between provinces can face incomplete recognition of in-school training credits and could be placed in a lower year because material is covered in a different order from province to province. While the Red Seal Program has contributed to some harmonisation of the scope of trades, inconsistencies remain. Inconsistencies in systems are a barrier for employers to recruit and a disincentive for apprentices to move for on-the-job training. The federal government should continue to work with provinces to harmonise apprenticeship training and certification requirements of apprenticeship programmes.

Immigration constitutes around 0.8% of the population annually, and about 60% of immigrants are chosen on economic criteria. Integration of highly skilled immigrants, who often initially take less skilled jobs, is a major challenge (Figure 17). The development of the Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications in 2009 was an important step in this regard. To reduce barriers to integration, since 2013 applicants under the Federal Skilled Worker Program (which is an immigration path for skilled workers) must supply assessments of their education credentials and proficiency in English or French.

Figure 17. **Immigrants' jobs before and after arrival by skill level**

Skill level of pre-migration and post-migration jobs



Note: Immigrants who arrived in Canada during the year to 30 September 2001. Occupational skill levels as defined in the National Occupation Classification Matrix 2006. O corresponds to management occupations, A to occupations that usually require university education, B to occupations that usually require college education or apprenticeship training, C to occupations that usually require secondary education and/or occupation-specific training, and D, the lowest skill level, to occupations for which training is usually provided.

Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, Detailed information for 2005 (Wave 3).

StatLink http://dx.doi.org/10.1787/888933079269

Canada's economic immigration programmes do not sufficiently prioritise applicants according to labour-market needs. To overcome this shortcoming, in 2015 the federal government will introduce the "Express Entry System", based on an "Expression of Interest" model, which will establish a pool of qualified potential immigrants from which governments and employers may consider candidates based on their immigration and labour market needs.

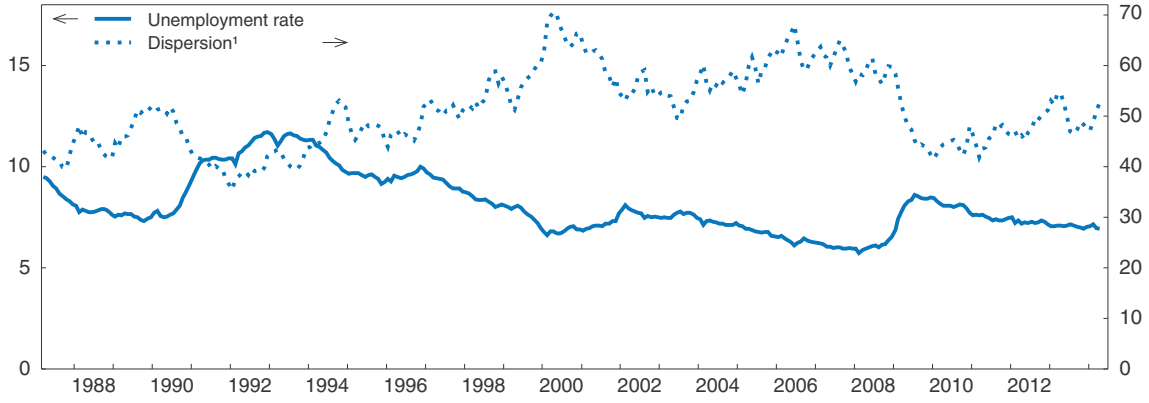
Greater geographical mobility could also reduce skills mismatches. Although already quite high by international comparison, internal migration is impeded by inter-provincial

barriers, such as occupational licensing (Amirault et al., 2013). A variety of reforms have reduced such impediments, including the harmonisation of qualification requirements and mutual recognition of qualifications for Red Seal trades, and the implementation of the 1995 Agreement on Internal Trade (AIT). The AIT was strengthened in 2009 when mutual recognition of workers' occupational credentials took effect. However, the AIT Dispute Resolution Panel does not appear to be very accessible. Only two cases have ever been brought before the tribunal, even though according to a 2004/05 survey of regulatory bodies commissioned by the Forum of Labour Market Ministers (2005) 35% of regulated workers moving province had their qualifications rejected in the receiving province; these cases took up to 10 years to resolve. To make the Panel more effective, access should be improved and its procedures streamlined, perhaps by setting a time limit for its deliberations, after which qualifications would be deemed to be accepted.

While the regional dispersion of unemployment rates might be expected to decline in the long term as workers move from high- to low-unemployment regions, this has not occurred (Figure 18). This may be partly because the Employment Insurance (EI) scheme provides incentives for seasonal work in high-unemployment regions, where contribution periods to qualify are shorter and maximum benefit periods are longer than elsewhere (Riddell and Kuhn, 2010). EI effectively subsidises workers to remain in seasonal jobs that would not otherwise provide an acceptable income for many such workers, instead of moving to full-time work elsewhere. As might be expected, high unemployment persistence occurs mainly in rural areas with a heavy concentration of seasonal workers. The EI programme has long required claimants to conduct reasonable job search and accept a reasonable offer of suitable work to avoid EI benefit suspension. New EI rules that clarify what a reasonable job search for suitable employment means came into effect at the beginning of 2013. As benefit duration increases, claimants are required to expand their job search and reduce restrictions with regard to acceptable type of work and earnings. Those claimants who make frequent use of the EI programme are subject from the beginning of their claim to these more stringent job-search criteria. However, given that seasonal workers in many rural areas are unlikely to get any such job offers, this reform may not be

Figure 18. **Unemployment and its regional dispersion**

Per cent



1. The dispersion is measured by the coefficient of variation (standard deviation divided by the mean) across 69 regions.

Source: Statistics Canada, CANSIM table 2820054 and OECD calculations.

StatLink http://dx.doi.org/10.1787/888933079288

effective in reducing EI usage in many cases. If it proves ineffective overall, it could be worth introducing experience-rated EI premiums for employers (whereby their contribution rates depend on their past record of laying off worker) to further discourage repeat usage, as suggested in the 2008 OECD *Survey*. This reform could be supported by better access to training opportunities, including EI support while in training for seasonal workers who wish to retrain to obtain year-round employment.

Recommendations to reduce skills shortages

Key recommendations

- Build on announced new measures to provide better information on expected returns to post-secondary education to improve students' study choices.
- Strengthen the single market for labour by making the Agreement on Internal Trade Dispute Resolution Panel more accessible and expediting its procedures. In addition, continue to work with provinces and territories to harmonise training and certification requirements of all apprenticeship programmes across the country to increase completion rates and inter-provincial mobility of apprentices.
- If recent Employment-Insurance reforms do not clearly cut repeat use, adopt experience-rated premiums and enhance opportunities for seasonal workers to retrain.

Other recommendations

- Reduce the incidence of weak numeracy or literacy skills being a barrier to post-secondary education (PSE) completion, perhaps by requiring students to study mathematics and English/French until the end of secondary school or by investing in remedial education in PSE institutions. Increase experiential-learning components of university programmes to develop the soft skills sought by employers.
- Sustain programmes for immigrants to complement their foreign credentials and become qualified to local standards.

Improving fiscal sustainability

In recent years, fiscal policy has focused on reversing the deterioration in public finances that occurred over 2008-10 to ensure fiscal sustainability and rebuild room for manoeuvre in the event of future adverse shocks. The federal deficit (Government Financial Statistics basis) fell from a peak of 2.5% of GDP in 2010 to 0.7% in 2013 (Table 4). This decline was achieved by containing expenditure. Most provincial/territorial and local governments also cut spending as a share of GDP, but their combined deficit barely declined because revenue also fell. In all, the general government budget deficit narrowed from a peak of 4.9% of GDP in 2010 to 3.0% in 2013. Most of this improvement is estimated to be structural.

The federal government has reaffirmed its commitment to eliminate its budget deficit by FY 2015/16, mainly through further expenditure restraint: notable developments include the announcement in its 2013 Fall Update of Economic and Fiscal Projections to reintroduce a two-year departmental operating budget freeze, and additional reforms to federal government employee compensation announced in Budget 2014. In the years thereafter it projects sustained small surpluses on unchanged policies, in which case federal debt (public accounts basis) would continue declining steadily, reaching the target of 25% of GDP by 2021. The federal government has not yet moved to follow through on its election promise to use part of the surpluses to reduce the tax burden on couples with children by allowing the

Table 4. **Fiscal consolidation is ongoing**[1]

Per cent of GDP unless otherwise indicated

	Actual		Projections			
	2010	2013	2014	2015	2016	2017
Federal government[2]						
Revenue	**13.9**	**13.9**	**14.1**	**14.3**	**14.3**	**14.2**
of which: Taxes on income, profits and capital gains	9.1	8.9	9.0	9.2	9.3	9.3
Expenditure	**16.4**	**14.6**	**14.2**	**13.9**	**13.8**	**13.7**
of which: Consumption	3.6	3.3	2.8	2.8	2.6	2.6
Grants, expense[3]	5.8	5.1	5.0	4.8	4.8	4.8
Budget balance	**-2.5**	**-0.7**	**-0.1**	**0.4**	**0.5**	**0.5**
Federal net debt[4]	**35.0**	**35.5**	**34.2**	**32.3**	**30.4**	**28.6**
Provincial/territorial and local governments[5]						
Revenue	**25.6**	**24.7**	**24.8**	**24.9**	**24.9**	**25.0**
of which: Taxes on income, profits and capital gains	5.4	5.7	5.8	5.9	6.0	6.1
Grants, revenue	4.5	4.0				
Expenditures	**28.7**	**27.7**	**27.6**	**27.5**	**27.3**	**27.2**
of which: Consumption	18.7	18.3	18.2	18.1	17.9	17.7
Gross investment	4.2	3.7	3.7	3.7	3.7	3.7
Budget balance	**-3.2**	**-3.1**	**-2.9**	**-2.7**	**-2.5**	**-2.3**
Provincial and local government net debt[4]	**26.0**	**31.3**	**33.0**	**34.3**	**35.2**	**36.0**
Canada/Québec Pension Plans[5]						
Budget balance	**0.6**	**0.8**	**0.7**	**0.7**	**0.7**	**0.7**
Canada/Québec Pension Plans net debt[4]	**-10.0**	**-12.6**	**-12.8**	**-12.9**	**-13.1**	**-13.2**
Consolidated general government						
Revenue	**38.3**	**38.1**	**38.5**	**39.1**	**39.1**	**39.1**
of which: Taxes on income, profits and capital gains	14.5	14.6	14.8	15.1	15.3	15.4
Taxes on goods and services	7.0	7.0	7.0	7.0	7.0	7.0
Social contributions	4.6	4.7	4.7	4.8	4.7	4.7
Expenditures	**33.3**	**41.1**	**40.7**	**40.5**	**40.3**	**40.0**
of which: Consumption	22.3	21.6	21.1	20.9	20.6	20.3
Social benefits	8.0	7.9	7.9	7.9	7.9	7.9
Gross investments	4.7	4.1	4.1	4.1	4.1	4.1
Budget balance	**-4.9**	**-3.0**	**-2.2**	**-1.4**	**-1.2**	**-0.9**
Cyclically adjusted balance	-4.2	-2.7	-2.1	-1.5		
Primary balance	**-4.3**	**-2.6**	**-1.8**	**-1.0**	**-0.8**	**-0.6**
General government net debt[4]	**35.4**	**41.0**	**41.1**	**40.2**	**39.1**	**37.8**
Memorandum items:						
Real GDP growth[2]	3.4	2.0	2.3	2.5	2.5	2.3
Nominal GDP growth[2]	6.1	3.4	3.9	4.5	4.5	4.4
Three-month treasury bill (per cent)	0.6	1.0	1.0	1.5	2.7	3.6
Ten-year government bond (per cent)	3.3	2.3	3.0	3.5	4.1	4.6
Consolidated general government gross debt – SNA basis[6]	89.5	93.3	92.1	89.5	86.9	84.1
Consolidated general government net debt – SNA basis[6]	37.4	39.9	40.6	40.3	39.8	39.0

1. Government Financial Statistics (GFS) basis unless otherwise stated.
2. Projections for 2014-17 are based on the 2014 federal budget or, in the case of GDP, are the same as in the budget.
3. Grants to provinces were inflated in 2010 by one-off payments of 0.4% of GDP for the conversion to Harmonised Sales Tax.
4. Accumulated deficits.
5. Projections for 2014-17 are based on those in the IMF 2013 Article IV Consultation for Canada.
6. At market value. Excludes unfunded-government-employee pension liabilities (14.6% of GDP in 2010 and 13.3% in 2013).

Source: Statistics Canada; Finance Canada; IMF (2014a) "Canada: 2013 Article IV Consultation for Canada", *IMF Country Report*, No. 14/27, February; and OECD calculations.

higher earning spouse to transfer – up to a limit – part of his or her income to the lower-earning spouse in a lower tax bracket. This would be a disincentive to second earners (mainly married women) to work and benefit largely high-income families.

Provincial governments have also announced plans to eliminate their deficits. But the deadlines for doing so are distant (Ontario, New Brunswick and Nova Scotia, FY 2017/18) for the provinces with some of the largest imbalances. Aggregate provincial/local deficits are projected to edge down from 3.1% of GDP in 2013 to 2.3% in 2017, primarily by restraining consumption expenditure. Their total net debt is projected to continue rising slowly as a share of GDP over the next few years.

Based on these budget plans the general government deficit is projected to fall to 0.9% of GDP in 2017, with most of this decline occurring over the next two years and most assessed as structural. This consolidation effort is estimated to reduce average economic growth by around 1/3 per cent per year over the next two years. General government net debt is projected to start falling in 2015, reaching 38% of GDP in 2017, which is far below the projected OECD average of 71% for 2015 (OECD, 2014). Indeed, the difference would be even greater if the assets contained in Canada's funded government-employee pension plans were included (worth an estimated 45.5% of GDP in 2012), given that most other countries have pay-as-you-go pension schemes for government employees with little or no such assets.

As elsewhere, the main longer-term fiscal-sustainability challenge comes from rising spending on health and long-term care, most of which is paid by provincial governments. Such outlays are projected to rise by 2.7% of GDP by 2030 and 7.5% of GDP by 2060 in a "cost pressure scenario" in which health expenditures grow by the historical average of 1.7% per year on top of demographic, price and income effects (OECD, 2012). These projected increases are close to the OECD average. Rising health-care costs will put provincial finances on an unsustainable path. Based on similar health-spending assumptions to those above, the IMF (2014a) projects an increase in provincial/local net debt to 115% of GDP by 2050. Hence, all provinces should continue to work on reforms that would limit health-care expenditure growth. As recommended in the 2010 *Survey*, some have done so in recent years by moving away from global budgeting toward patient- or activity-based hospital funding models, increasing ambulatory care and consolidating purchases of drugs, medical supplies and equipment with other provinces. These reforms are believed to have helped to slow the growth of provincial health-care expenditure to 2.7% in 2013, according to the Canadian Institute for Health Information.

By contrast, old-age pensions are unlikely to pose a significant fiscal challenge, according to projections by the Office of the Chief Actuary (2012, 2013). Old Age Security (OAS) spending is projected to rise only from 2.5% of GDP in 2013 to 2.8% by 2030, as the eligibility age is set to rise from 65 to 67 over 2023 to 2029, and then to fall back to 2.4% by 2050 when most baby boomers will have died. Spending by the Canada Pension Plan (CPP) is projected to rise from 2.1% to 2.7% of GDP from 2013 to 2050. The Chief Actuary estimates that current contribution rates are sufficient to fund this increase.

Concerns have risen that many middle-income households are not saving enough for retirement, perhaps because of accumulated housing wealth. In response, some provinces favour increasing CPP pensions and contribution rates. To avoid increasing labour costs, notably for low-income workers, it may be preferable to increase OAS pensions, which are means-tested, and to expand the means test to cover wealth (including owner-occupied housing).

To increase transparency and awareness of the challenges that lie ahead, and to build consensus for needed reforms, provinces should follow the example of the federal government and Ontario and establish an independent budget office; a single office covering all provinces would be the best bet. This could examine budgets and spending programmes and publish long-term fiscal sustainability assessments, as recommended in the 2010 *Survey*.

There is also scope for the federal government to increase efficiency and reduce income inequality (see above) by further reducing tax expenditures that benefit relatively higher-income households, such as the pension income credit, the First-Time Home Buyers Tax Credit, the exclusion of health-insurance premiums paid by employers from taxable income, the non-taxation of capital gains on principal residences and preferential treatment of stock options.

Recommendations to improve fiscal sustainability

Key recommendations

- Continue to implement reforms to slow growth in provincial health-care costs, including patient- or activity-based funding for hospitals, increasing the share of ambulatory care and consolidating input purchases with other provinces.
- Establish a single independent budget office for the provinces.

Other recommendations

- Reduce personal income tax expenditures no longer in line with policy objectives to improve the efficiency and fairness of the tax system.

Managing non-renewable resource revenues and economic disparities

The resource boom has increased economic disparities

Globalisation has produced significant structural changes within Canada's economy over the past decade. Growth in emerging market economies has both pushed up commodity prices and economic activity significantly (IMF, 2014b) while challenging the competitiveness of its manufacturing sector. These forces have shifted the terms of trade and generated large regional disparities: higher oil prices have mostly benefitted residents of Alberta, Saskatchewan, and Newfoundland and Labrador, and other factors such as the emergence of low-cost competitors in emerging economies and exchange-rate appreciation resulted in slower growth in the manufacturing-based economies of Ontario and Québec.

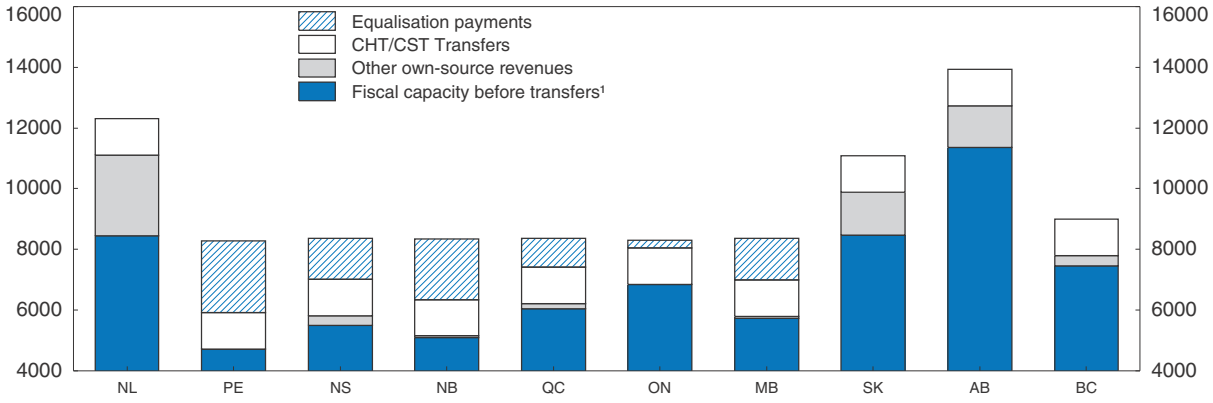
The federal and provincial governments have a responsibility to mitigate income disparities through their constitutional commitments to promote equal opportunity and provide a reasonable quality of public services for all. Income redistribution generally occurs via the progressive tax system combined with federal transfers to both individuals and provinces, which have jurisdiction over health, education and social assistance. The federal government transfers funds for health (CHT) and social services (CST) to the provinces on an equal per capita basis. As of 2012-13, these transfers amounted to 2% of GDP for the CHT and 0.8% for the CST. It also provides equalisation payments to compensate for differences in "fiscal capacity" (the per capita revenue that provinces could generate using average tax rates for five major revenue sources). In 2009, the federal government began capping equalisation payment increases to the rate of nominal GDP growth to contain costs (CAD 15.4 billion in 2012-13, 0.8% of GDP). The

federal government also provides Territorial Formula Financing (TFF) payments to address fiscal disparities of the northern territories (CAD 3.1 billion in 2012-13, 0.2% of GDP). In aggregate, major federal transfers (CHT, CST and Equalization/TFF) represent about a quarter of total federal spending and about a sixth of total provincial revenues.

With significant disparities in fiscal capacity remaining even after transfers (Figure 19) and the possibility that global forces will further widen inter-provincial disparities, reforms may be needed to ensure low-income provinces can continue to finance a reasonable standard of public services, especially as population ageing drives up health-care costs. In particular, federal-provincial transfer entitlements should factor in inter-provincial expenditure differences arising from differential elderly population shares. For example, CHT entitlements could be based on a formula that incorporates the estimated impact of ageing on health-care expenditures, or a similar adjustment could be made through the equalisation programme.

Figure 19. **Provincial fiscal capacities**

2012/13, CAD per capita



1. Fiscal capacity is defined as the per capita revenue that a province could generate from five major revenue sources, using average tax rates for corporate and personal income, consumption and property taxes as well as 50% of natural resource revenues. The federal government makes equalisation payments to provinces with fiscal capacity below the national average (of 10 provinces) to bring them up towards the average, subject to an overall cap on increases in line with nominal GDP growth.

Source: T. Courchene (2013), "Surplus Recycling and the Canadian Federation", *Mowat Centre Fiscal Transfer Series*, University of Toronto.

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The impact of the resource boom on Aboriginal communities has been mixed

Many Aboriginal communities have supported resource development as an opportunity to participate in economic activity and escape from poverty. The mining industry is now the country's largest employer of Aboriginal people (NAEDB, 2012). However, not all Aboriginal groups endorse nearby resource development activities, which can undermine traditional land-use patterns, displace wildlife habitats and migration corridors and harm indigenous cultures and livelihoods (NAHO, 2008; First Peoples' Worldwide, 2013). Aboriginal communities have opposed mining projects where they feel they have been insufficiently consulted or compensated for the impacts on their quality of life. At the same time many Aboriginal communities lack the technical and business expertise to negotiate fair agreements with industry, which limits their participation in nearby projects (NAEDB, 2012). The government's commitments to streamline regulatory and environmental approvals for responsible resource development and to provide funding

for consultation with Aboriginal communities are intended to help Aboriginal communities to benefit from these projects.

One study examining 370 oil, gas and mining projects worldwide argues that Canada has the most with high risk of disruption due to conflicts with indigenous communities (First Peoples' Worldwide, 2013). Federal and provincial governments have a legal duty to consult, and where appropriate, accommodate, Aboriginal groups when the Crown contemplates conduct that may adversely affect established Aboriginal or Treaty rights. The federal government has undertaken significant efforts in recent years to enhance the consistency and effectiveness of consultations, including through the integration of consultation into project reviews and through guidelines for federal officials. However, practical guidelines for industry have yet to be provided. Governments should lead development of such guidance through engagement with Aboriginal rights holders and industry representatives to provide clarity to all stakeholders and ensure resource activities are managed in a way that brings long-term benefits to Aboriginal communities.

Managing revenues from non-renewable resources prudently and equitably

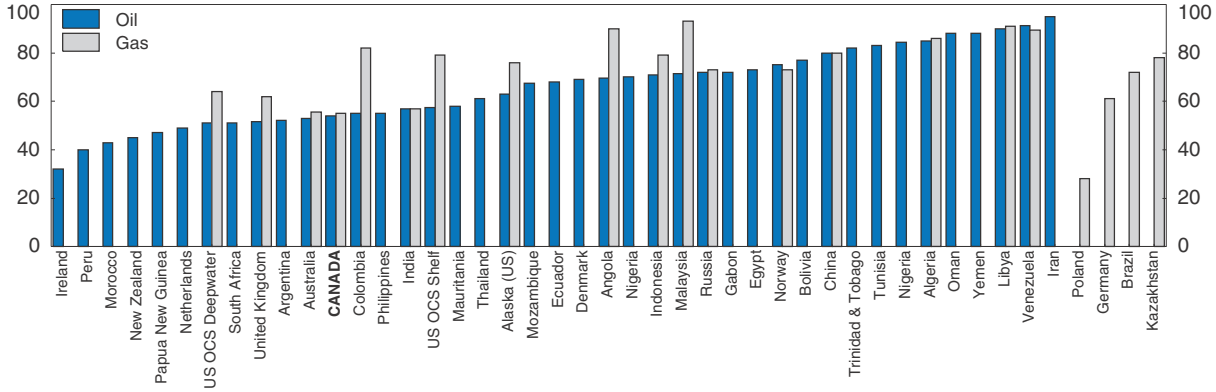
Canada's large non-renewable resource extraction sector generates significant income gains but also poses vulnerabilities due to the volatility of revenues and uncertainties about long-term sustainability. These issues were discussed in detail in a special chapter on the energy sector in the 2008 *Survey* (OECD, 2008; Mourougane, 2008). Canadian natural gas exports have been declining for several years, and this is likely to continue. On the oil side, concerns over potential environmental damage from Canada's oil sands are hindering the development of pipelines needed to access US and Asian markets, but in the near term exports continue to grow via rail transport.

Prudence and equity argue for saving gains from exploiting a finite resource and sharing them with future generations. Revenues could be invested exclusively in foreign assets to offset pressures on the exchange rate and limit negative effects on other industries, as in Norway. The federal government has limited powers in this area, although it receives revenues from corporate, wage and consumption taxes, because the provinces have exclusive constitutional rights to manage natural resources (with some exceptions like those located offshore and in the three northern territories), and since the early 1980s the federal government has left the field of resource-specific taxation to the provinces. The provinces collect royalties from oil and gas development, but some estimates suggest that Canada's take is comparatively low (Figure 20).

In particular, the Alberta government has relied heavily on non-renewable resource revenues to support current spending programmes at low tax rates, with one study estimating that it has saved as little as 8% of total revenues since 1983 (Kneebone, 2013). The province's main long-term savings vehicle, the Alberta Heritage Fund, is worth only CAD 17.3 billion (5.3% of Alberta's GDP). The Alberta government recently passed legislation to allocate a share of annual non-renewable resource revenues to the Fund and to retain all net earnings from 2017-18 onwards. This will improve transparency and help impose discipline on future governments to continue systematically saving some resource revenues, but the share is limited and the majority of energy revenues will continue to be spent on current goods and services.

Figure 20. **Average government take in oil and gas fiscal regimes**

Share of profits captured by the state



Source: I. Agalliu (2011), "Comparative Assessment of the Federal Oil and Gas Fiscal Systems", US Department of the Interior, Bureau of Ocean Energy Management, Herndon, VA, for oil; and D. Johnston (2008), "Changing Fiscal Landscape", *Journal of World Energy Law and Business*, Vol. 1, pp. 31-54, for gas.

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Recommendations to improve management of non-renewable resources and address regional disparities

Key recommendations

- Factor in provincial differences in demographics when calculating federal transfers to provinces.
- At the provincial level, increase taxes from non-renewable resource development, and raise the share of revenues that are saved.
- Provide clear guidelines for resource companies on how to engage with affected Aboriginal groups so that projects bring long-term benefits to these communities.

Ensuring growth is environmentally sustainable

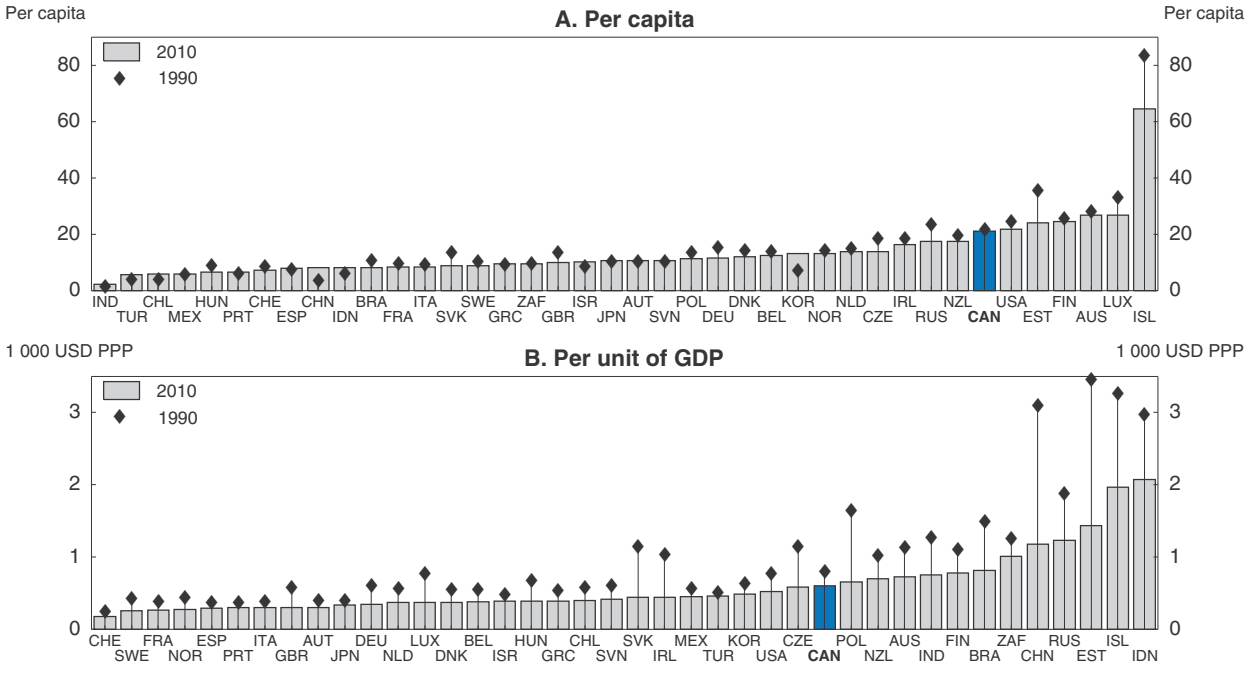
Greater efforts are needed to address the environmental costs of resource extraction

Canada ranks 7th among OECD countries for greenhouse gas (GHG) emissions, both per capita and per unit of GDP, though production has become more efficient since 1990 (Figure 21). The oil and gas sector is the largest contributor (Figure 22), accounting for two-thirds of the total increase since 1990, with oil-sands production the fastest growing source. Technological investments have helped to reduce the emissions intensity of oil-sands production by 28% from 1990 to 2012, mostly by 2004 as intensity since then has remained relatively stable (Environment Canada, 2014) with shifts towards more emissions-intensive "in situ" extraction techniques and declining reservoir quality in recent years (Environment Canada, 2013).

All levels of government (federal, provincial/territorial and municipal) are involved in addressing climate change, as the environment is an area of shared jurisdiction. Provinces have authority over energy policies as well as many other domains that influence climate change, such as land use, building codes and electricity supply decisions. Several provinces have put in place regulations to address GHG emissions; concurrently, the federal government is implementing a sector-by-sector regulatory plan to reduce them. The federal government also has responsibility over negotiating international agreements. It

Figure 21. **Greenhouse gas emissions intensities**

Including positive value of LULUCF,[1] tonnes CO_2 equivalent



1. Land use, land-use change of forest.

Source: OECD, *OECD Energy Database* and *OECD Economic Outlook* 95.

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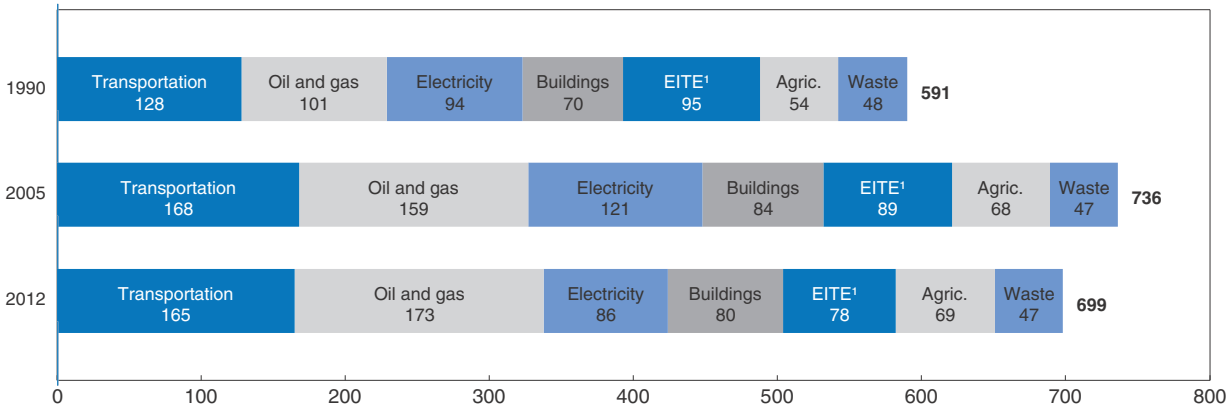
Figure 22. **GHG emissions by economic sector**

Mt CO_2 equivalent, excluding LULUCF



1. Emissions-intensive and trade-exposed industries.

Source: Environment Canada (2014),"National Inventory Report 1990-2012: Greenhouse Gas Sources and Sinks in Canada", The Canadian Government's Submission to the UN Framework Convention on Climate Change.

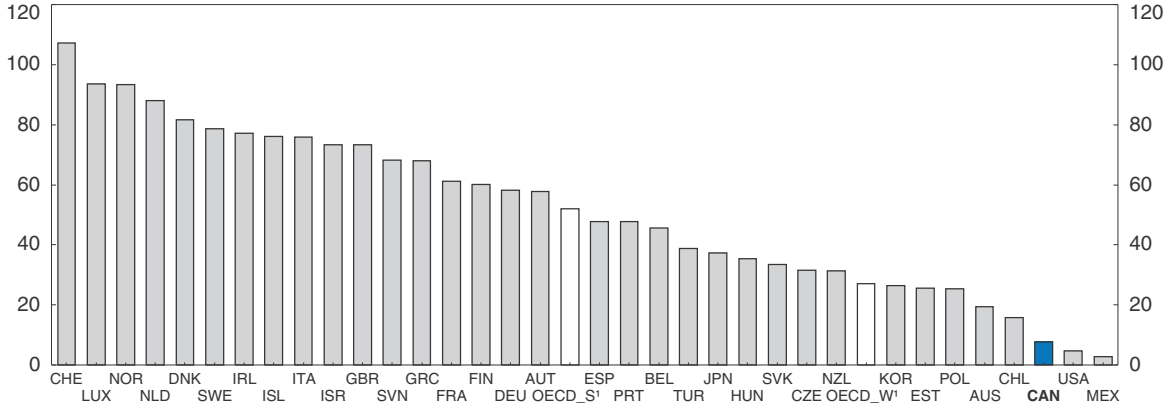
StatLink http://dx.doi.org/10.1787/888933079364

has aligned its climate-change policy, where appropriate for Canadian circumstances, with that of the United States, given the two countries' close trade links and highly integrated energy markets. Both nations signed the Copenhagen Accord in 2009 and pledged to reduce absolute GHG emissions to 17% below 2005 levels by 2020. Neither country has

international emissions commitments pre-2020, as they are not party to the Kyoto Protocol. Due to political obstacles US climate-change policies have relied primarily on regulation rather than market-based mechanisms. Canada has also relied primarily on regulation, tailoring policies to address specific circumstances of individual sectors. Market-based instruments such as tradable permits and carbon taxes tend to be more efficient than regulation where emissions are easily measured, since such instruments provide a dynamic incentive to reduce emissions where it is least costly to do so. Given generally low taxes on energy use nationwide, Canada effectively taxes carbon at one of the lowest rates in the OECD (Figure 23).

Figure 23. **Average effective tax rates on CO_2 from energy use in OECD countries**

Euros per tonne CO_2



Note: OECD_S signifies the simple average and OECD_W the weighted average. Figures for Canada and the United States include only federal taxes; for Canada including provincial taxes would, generally, more than double the tax rate on automotive fuels, increasing the average effective tax rate on CO_2 from energy sources.
Source: OECD (2013), *Taxing Energy Use: A Graphical Analysis*, OECD Publishing.

StatLink http://dx.doi.org/10.1787/888933079383

The federal government's approach to addressing climate change involves implementing sector-specific regulations to limit GHG emissions from major emitters, including transportation, coal-fired electricity generation, and oil and gas production. Since 2010, it has introduced regulations on renewable fuels and emissions standards on motor vehicles and new coal-fired plants. The federal government is currently working with the provinces to develop regulations for the oil and gas sector, which has taken longer than expected, and for other major emitting industrial sectors. However, since 2007 the federal government has legislated the phase-out of various tax preferences for the mining and oil and gas sectors, as recommended in the 2008 *Survey*, with all changes to be fully implemented by 2021. It has also been expanding tax support to clean energy technologies and increasing R&D investments in "green" technologies. As a share of GDP, Canada's spending on "green" energy R&D (i.e. excluding fossil fuels and nuclear) ranks in the top half of 28 OECD countries. This includes over CAD 1.8 billion in funding for carbon capture and storage (CCS) technologies, which to date has produced four large-scale demonstration projects that are either operational or under construction. In addition, it implemented an energy retrofit programme in 2007-12 that helped to stabilise buildings' emissions.

The federal government projects that, based on policies currently in place, emissions would fall by only 0.4% below 2005 levels by 2020 rather than the targeted 17%

(Environment Canada, 2013). The main reason is that expanded oil-sands production in Alberta is projected to push oil and gas emissions 23% higher by 2020, completely offsetting improvements in the electricity sector through the phasing out of coal-fired power generation. In addition, Alberta's current emissions targets are less stringent than national commitments, although its policy is currently under review as its GHG regulation expires in September 2014. However, these projections exclude the impact of any future regulations on oil and gas emissions.

Alberta was the first province to introduce a price on emissions in 2007 through its Specified Gas Emitters Regulation. This programme requires heavy industry to reduce GHG emissions intensity each year by 12% below a 2004-05 baseline. Companies may instead choose to pay CAD 15 per tonne of emissions exceeding this target into a fund. However, this price has been too low to induce significant abatement: in the first five years of the programme 42% of compliance came from companies choosing the lower-cost option of paying the fine. One recent study estimates that for Canada to meet its 2020 target Alberta would need to aim for a 42% intensity reduction, requiring a carbon price of CAD 100/tonne (Horne et al., 2013).

Several Canadian provinces have adopted more ambitious climate-change strategies, which vary widely in approach and targets. In 2008, British Columbia introduced a carbon tax to support the province's GHG reduction target of 33% below 2007 emissions levels by 2020. The tax is now at CAD 30/tonne, which applies to three-quarters of its emissions. In 2013, Québec implemented a cap-and-trade system as part of the Western Climate Initiative with California, and three other provinces (British Columbia, Ontario and Manitoba) also plan to join. Most of these provinces have among the lowest per capita emissions intensities in the country, however. To make significant progress towards international commitments, stronger abatement incentives will be needed in the high-emission provinces of Alberta and Saskatchewan, where per capita emissions are more than three times the national average. To avoid leakage and loss of competitiveness, this would ideally involve harmonising regional schemes to produce a single carbon price signal, with a view to eventually linking with international emissions-trading schemes.

Oil-sands production in Alberta also requires substantial volumes of water and natural gas, resulting in significant waste accumulation in tailings ponds and air pollution. To date, monitoring and study data show some evidence of oil-sands development impacting the surrounding environment (Frank et al., 2014). Although in 2009 the Alberta government set regulations for managing and reducing waste, the province's energy regulator released a 2013 report revealing that the methodologies used by mining operators failed to meet the 2011/12 targets (ERCB, 2013). The government has identified concerns with the performance of mining operators and has stated that it will assess enforcement options if operators do not meet expectations for the next tailings management assessment report in 2015.

Recommendations to make economic growth more environmentally sustainable

Key recommendations

- Continue expanding the use of market instruments to price carbon emissions. Work with provinces to ensure coherence of provincial climate-change strategies with international commitments.
- Ensure that regulatory objectives for treating waste from oil-sands projects are met.

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ANNEX

Progress with structural reforms

This Annex summarises recommendations made in previous Surveys and actions taken since the OECD Economic Survey of Canada published in June 2012.

This annex presents under each theme:

- Past recommendations
  - ***Actions taken and current assessment***

Product market competition

- Lift restrictions on foreign direct investment in airlines, telecommunications, broadcasting, banking, culture and post and fulfil commitments to fully open telecoms to competition.
  - ***Foreign investment restrictions for telecommunications companies that hold less than a 10% share of the telecommunications 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.
  - ***No action taken.***

Financial – sector policies

- Balance strengthened bank regulation with market-based incentives to address the moral hazard problem in "too big to fail" treatment of financial institutions.
  - ***In conjunction with its implementation of Basel III on 1 January 2013, the Office of the Superintendent of Financial Institutions has applied the Basil Committee on Banking Supervision's Point of Non-Viability Requirements to all Canadian banks and federal trust and loan companies. The six largest Canadian banks were also designated as Domestic Systemically Important Banks (D-SIBs) in 2013, subjecting them to a number of measures to address their systemic importance, including a 1% common equity Tier 1 surcharge effective in 2016, enhanced supervision and recovery and resolution planning. Recovery and resolution plans have already been completed for each of the D-SIBs. The federal government has also announced its intention to subject Canadian D-SIBs to a bail-in regime.***
- If imbalances in housing markets continue to widen and household debt continues to increase, further tighten macro-prudential policy settings.
  - ***Increases in house prices have eased, and household debt has stabilised, albeit at a high level. Regulations governing mortgage insurance have been tightened further since mid-2012 (see*** Chapter 1***). These include bringing the maximum amortisation period on mortgages back down to 25 years (from 40), and imposing maximum loan-to-value (LTV) ratios of 95% (80% for investment properties and mortgage refinancing).***
- Establish a comprehensive national securities regulator, with strengthened efforts to get the consensus of all provinces.
  - ***In September 2013, the governments of British Columbia, Ontario and Canada agreed to jointly establish the Cooperative Capital Markets Regulator. Together, they continue to invite all other provinces and territories to participate in the initiative.***

Fiscal policy and fiscal federalism

- Make more use of property taxes and user fees by municipalities, while easing the property tax burden on business. As their tax base becomes more sustainable, reduce local authorities' reliance on provincial transfers by granting them more revenue-raising powers.
  - ***No known action taken.***

- Strengthen the fiscal framework by adopting a long-term debt ratio target with associated multi-year budgeting and spending ceilings.
  - ***In the context of the September 2013 G20 meetings, the federal government announced its commitment to achieve a federal debt-to-GDP ratio of 25% by 2021. In its October 2013 Speech from the Throne, the federal government also announced its intention to introduce balanced budget legislation that will require "balanced budgets during normal economic times, and concrete timelines for returning to balance in the event of an economic crisis".***
- Consider establishing provincial budget agencies or 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 announced the establishment of a Financial Accountability Office. It will produce an annual report and provide analysis on the state of the province's finances, including the budget, and on trends in the provincial and national economies.***
- Continue with federal and provincial structural spending reforms, particularly in health care and in provinces with large structural deficits, to move towards long-term fiscal sustainability.
  - ***Alberta, British Columbia and Ontario have started to move away from global budgeting toward activity-based funding models for hospitals. Many provinces are increasing out-of-hospital care as part of a move toward more decentralised delivery systems. The 2010 agreement between a number of provinces to consolidate purchases of common drugs, medical supplies and equipment was extended in 2012 to include generic drugs.***

Taxation

- Eliminate GST zero rating for basic groceries.
  - ***No action taken.***
- Switch from provincial sales taxes (PST) to value-added taxes (VAT). Change tax mix to rely more on VAT and less on less efficient income and profit taxes.
  - ***Prince Edward Island eliminated its PST and, on 1 April 2013, adopted the Harmonised Sales Tax (HST), a federally-legislated VAT having a federal and provincial component. In addition, Quebec and Canada entered into an agreement under which the Quebec Sales Tax (QST), a provincially-legislated VAT, would be further harmonised with the Goods and Services Tax (GST), the federally-legislated VAT, effective from 1 January 2013. British Columbia exited the HST and returned to a PST on 1 April 2013. As a result, Manitoba, Saskatchewan and British Columbia continue to levy PSTs. Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick and Ontario have adopted the HST. Alberta levies no sales tax.***
- Eliminate inefficient personal tax expenditures, especially those that are regressive, such as for stock options.
  - ***Since 2006, the federal government has introduced several measures to improve the fairness and integrity of the tax system, and to strengthen tax compliance. Measures introduced in the last two years include, for instance, the elimination of the deduction for Safety Deposit Boxes, the phasing-out of the Labour-Sponsored Venture Capital Corporations tax credit, the elimination of the tax benefits that arise from taxing certain trusts and estates at graduated rates and the elimination of the 60-month exemption from the deemed residence rules. A complete list of integrity and fairness tax measures introduced by the federal government since 2010 is set out in Table A2.2 of Budget 2014.***
- Continue to rationalise the federal and provincial business tax preferences (special low rates, accelerated Capital Cost Allowance (CCA), deductibility of provincial royalty

payments, etc.) to sectors like manufacturing and natural resources, and to small scale, Canadian-owned firms.

- ❖ ***Budget 2013 announced the rationalisation of a number of business tax preferences in order to make the tax system more neutral across business sectors and regions:***
  - the phase-out (over the 2013-16 period) of the additional deduction for credit unions, which has given them access to the small business income tax rate on a preferential basis;
  - the elimination (for taxation years beginning on or after Budget Day) of the International Banking Centre (IBC) rules, which exempted prescribed financial institutions from tax on certain income earned through a branch or office in Montreal and Vancouver and had been identified as resembling regimes in some tax havens;
  - the phase-out (over the 2017-20 period) of the accelerated CCA for tangible mining assets; and
  - the phase-in (over the 2015-17 period) of reduced deduction rates for intangible pre-production mine development expense.
- ❖ ***In recognition of ongoing uncertainty in the global economy, Budget 2013 announced the extension of the temporary accelerated CCA for machinery and equipment used in manufacturing and processing to acquisitions made in 2014 and 2015.***

- Continue to move toward the elimination of the preferential federal tax treatment for mining. Re-examine the tax treatment of exploration and development costs as well as flow-through shares. Review royalty regimes.
  - ❖ ***Budget 2013 announced further rationalisation of federal tax preferences for mining:***
    - the phase-out (over the 2017-20 period) of the accelerated CCA for tangible mining assets; and
    - the phase-in (over the 2015-17 period) of reduced deduction rates for intangibles pre-production mine development expenses.
  - ❖ ***Budgets 2013 and 2014 announced consecutive one-year extensions of the 15% Mineral Exploration Tax Credit for flow-through share investors.***
  - ❖ ***An analytic paper "Flow-Through Shares: A Statistical Perspective" was published in the Department of Finance Canada's annual report "Tax Expenditures and Evaluations 2013".***

Social and labour-market policies

- Introduce employer experience rating into Employment Insurance (EI), or scale back access to it for seasonal and temporary workers.
  - ❖ ***New EI rules that clarify what a reasonable job search for suitable employment means came into effect at the beginning of 2013. As benefit duration increases, claimants are required to expand their job search and reduce restrictions with regard to acceptable type of work and earnings. Those claimants who make frequent use of the EI programme are subject from the beginning of their claim to these more stringent job-search criteria. Whether or not these measures succeed in substantially reducing repeat use of EI depends in part on the extent to which seasonal workers, who are mainly located in rural areas, receive more acceptable job offers. If these reforms do not clearly cut repeat use, adopt experience-rated premiums.***

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.
  - ***Some jurisdictions have expanded the role of private providers by contracting out provision of some insured health services such as out-patient surgical procedures (i.e. medically necessary, insured cataract and orthopaedic procedures) and the delivery of high-technology diagnostic services. However, in these instances, the contracted out services are fully covered under the provincial health insurance, and patients are not charged for the services received. Extra-billing and user charges for insured services are subject to mandatory deductions from the Canada Health Transfer payments of a province/territory.***
- Replace historical-based cost budgeting of Regional Health Authorities (RHAs) with a formula-based approach.
  - ***The province of Ontario is phasing in the Health System Funding Reform (HSFR) model that brings planning and accountability for the full patient journey under the Local Health Integration Networks (LHINs). Under this new patient-based funding model, Ontario's hospitals, Community Care Access Centres and long-term care homes are compensated based on how many patients they look after, the services they deliver, the evidence-based quality of those services, and the specific needs of the broader population they serve. As of 2015-16, HSFR will comprise 70% of the funding envelope provided to hospitals with the remaining 30% based on global funding.***
  - ***Since 2010, the province of British Columbia has been providing a portion of healthcare funding through a patient-focused funding model, where funding is linked to services performed. The British Columbia Ministry of Health currently oversees patient-based funding in the province.***
- 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. However, the 2011-12 National Physician Database indicates that alternative clinical payments accounted for 28.7% of total payments that year. In addition, for physicians receiving a blended income, the mean percentage of income from capitation is 6.90%.***
- 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 Canadian jurisdictions (i.e. British Columbia, Ontario, Québec), which represent over 2/3 of the country's population, have either implemented or announced the upcoming implementation of some level of activity-based funding for hospitals.***
- Revise public core package to include essential pharmaceuticals and eventually home care, selected therapy and nursing services.
  - ***The public core package only includes medically necessary hospital and physician services. However, provinces and territories provide supplementary healthcare benefits (e.g. prescription drugs and home and long-term care services) to certain groups (such as senior citizens) based on coverage levels and eligibility requirements determined by the provinces and territories.***

- Regulate private health insurance (PHI) to prevent adverse selection, and remove tax exemptions for employer provided private-health-insurance benefits.
  - ***No action taken.***
- Accelerate the applications of information and communications technologies in health care.
  - ***Canada Health Infoway, an independent federally-funded organisation, continues to work with provinces and territories to accelerate the development and use of electronic health technologies in Canada, such as telehealth and electronic health records (EHRs). An EHR is a secure record of an individual's health history available to authorised healthcare providers using networks that connect information from various points of care. As of December 2013, about 55% of Canadians have an EHR available to authorised healthcare professionals. Since 2010, Infoway is focussing with provinces and territories and other stakeholders on supporting the implementation, upgrading and use of electronic medical records (EMRs) at specific points of care, such as clinicians' offices, and connecting EMRs to EHRs. EMR use has increased from 24% in 2007 and 41% in 2010, to 64% in 2013.***
- Establish a pan-Canadian independent agency to monitor and analyse health-care quality.
  - ***No action taken.***

Tertiary education

- Increase access for disadvantaged groups by increasing targeted needs-based financial assistance. Reduce barriers for debt-averse financially disadvantaged students by increasing the transparency of the aid application process. Lower barriers for risk- and debt-averse students by providing relevant and reliable information to support their learning and career choices.
  - ***As part of the modernisation of Job Bank, the Government of Canada's main web site for job postings and consolidated labour market information, Employment and Social Development Canada will soon activate a web site providing information that links fields of study to occupational outcomes. It needs to be heavily publicised.***
  - ***Budget 2014 simplified the Canada Student Loans Program, which provides students with assistance in the form of student loans, grants and repayment assistance measures, by eliminating the value of student-owned vehicles from the assessment process to better reflect the needs of students who commute or work while studying.***
- Expand opportunities for foreign graduates of Canadian tertiary institutions to work in Canada and obtain permanent residence.
  - ***Currently, foreign students who have graduated from a Canadian post-secondary institution can apply for a post-graduation work permit and gain Canadian work experience to qualify for permanent residence through the Canadian Experience Class. In addition, since 2011, international PhD students who wish to become permanent residents of Canada have been able to submit applications for processing as Federal Skilled Workers.***
- To enhance quality and efficiency, consider increasing differentiation between institutions that engage in research and those that focus primarily on teaching.
  - ***Ontario is implementing a reform to encourage its tertiary institutions to specialise in areas where they have a comparative advantage, including in teaching or research in certain fields.***
- Promote a more flexible delivery model of higher education to encourage skills upgrading though continued efforts to strengthen 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.***
- Allocate more funding to Statistics Canada to co-ordinate data collection on tertiary education institutions and student outcomes at a nation-wide level.
  - ***Employment and Social Development Canada has provided funding for the 2012 National Graduate Survey (NGS); Postsecondary Student Information System (PSIS) for the years 2011-12 through to 2013-14; and invested in the Programme for International Assessment of Adult Competencies (PIAAC).***

Innovation

- Improve targeting of government 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.
  - ***Budget 2012 announced changes to simplify, enhance predictability and improve the cost-effectiveness of the SR&ED programme (with all changes fully in effect in 2014). Since Budget 2012, the government has made available nearly CAD 1.9 billion over four years (2012-13 to 2015-16) in new direct support for business innovation, exceeding the savings resulting from the 2012 SR&ED programme improvements.***
- Subject the Industrial Research Assistance Program (IRAP) and other R&D support programmes to rigorous cost-benefit evaluations. Consider user fees to recover the high costs of expert advice, especially as projects near commercialisation.
  - ***No action taken.***
- Wind down public support to venture-capital markets but instead attract private funding and management through risk sharing. Phase out tax credits to Labour Sponsored Venture Capital Corporations.
  - ***The Government of Canada announced in January 2013 the Venture Capital Action Plan (VCAP), a comprehensive strategy for deploying CAD 400 million in new capital over the next seven to ten years to strengthen Canada's venture capital industry and increase risk financing available to innovative firms. A key component of the Plan is establishing up to four large scale funds of funds with private sector investors and interested provinces, to be managed by private sector General Partners. The VCAP funds of funds are being structured to attract private investors back to the asset class, including through the use of incentives, with each CAD 1 in government capital to attract CAD 2 in private sector capital. In January 2014, the Government announced the establishment of one of the funds of funds, in partnership with the Government of Ontario, and is working towards establishing in the next few months the remaining funds of funds with private sector investors and interested provinces.***
  - ***Ontario completed the phase-out of its Labour-Sponsored Investment Funds tax credit in 2012 and the federal Labour-Sponsored Venture Capital Corporations tax credit will be phased out by 2017.***
- Encourage tertiary education institutions to include training in entrepreneurship and business skills in their science-based programmes.
  - ***In March 2014, the federal government launched the Business Innovation Access Program, to connect small and medium-sized enterprises with universities, colleges and other research institutions to address barriers to the commercialisation of ideas, products and services. The support available through the programme can involve external business services such as***

planning and marketing as well as technical services such as specialised testing, product prototyping and process development.

- Motivate technology transfer from academia by adopting demonstrated best-practice models for university patenting, a research-granting process more open to the needs of business and a system of vouchers for research contracting.

  ❖ ***No action taken.***

- Encourage green innovation through demand-pull instruments, such as pricing of environmental externalities, notably in the areas of carbon emissions and water quality.

  ❖ ***No action taken.***

Energy and environmental policies

- Continue to make more use of market instruments. Consider introduction of a (federal) GHG emissions tax. Lower levels of government could also implement more green taxes and congestion charges.

  ❖ ***The federal government has no plans to introduce a carbon tax or a cap-and-trade system. It is implementing a sectoral regulatory approach as in the United States. Trading in GHG emission permits between Quebec and California began in 2014. In addition, British Columbia, Alberta and Quebec have policies in place related to carbon pricing. Alberta is considering raising the levy charged to heavy greenhouse-gas emitters. Federal taxes on road-transport fuels remain low by international comparison, although they are in keeping with those in place in the United States. Further, provinces and territories also impose taxes on road transport fuels at rates that are generally higher than those imposed by the federal government.***

- Regularly review water pricing and rights to ensure efficient use. Check that Alberta's water allocation and licence transfer processes reach conservation objectives while minimising effects on oil-sands developments.

  ❖ ***No action taken.***

- 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 the policy of promoting corn and cellulosic ethanol and other biofuels. Rather than mandate use, 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 the system consistent with Alberta's sustainability objectives.

  ❖ ***No action taken.***

Agricultural policies

- Phase out the supply management regimes by the progressive introduction of market forces, in particular, by shrinking single commodity transfers for milk and eggs.

  ❖ ***No action taken.***

- Consider the use of business risk-management tools to replace government safety-net programmes that serve to build up moral hazard and place a heavy burden on the budget.

  ❖ ***No action taken.***

Thematic chapters

Chapter 1

Deconstructing Canada's housing markets: Finance, affordability and urban sprawl

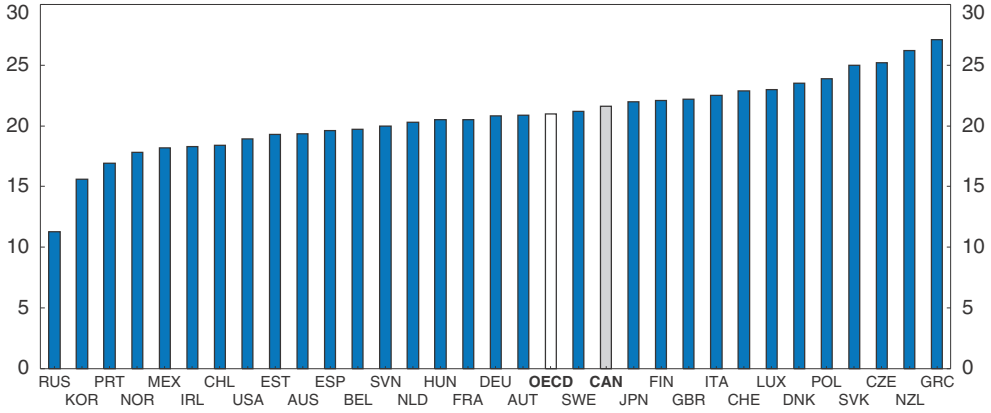
House prices have increased significantly in Canada over the past decade, driving household debt and residential construction activity to historical highs. Although macro-prudential tightening has slowed the pace of household borrowing in the last few years, house prices have continued to trend higher, and affordability remains a major challenge in urban centres. First-time home buyers must therefore spend more of their incomes to purchase a house and are vulnerable to future interest rate hikes. Overbuilding in the condominium sectors of some cities appears to be a source of risk, especially if there were to be a major price correction in these segments that spilt over into other markets. The country benefits from a sound and effective housing finance system, which performed well throughout the global financial crisis thanks to strong regulatory oversight and explicit government backing of the mortgage market. Nonetheless, the dominance of the crown corporation CMHC in the mortgage insurance market concentrates a significant amount of risk in public finances. Improving competitive conditions in the mortgage insurance market could help diversify these risks and reduce taxpayer contingent liabilities, while introducing coverage limits on loan losses would better align private and social interests. There may be a shortage of rental housing in several cities, especially in the range that low-income households can afford. Urban planning policies have resulted in low-density residential development, which contributes to relatively high transport-related carbon emissions. Addressing these externalities requires stronger pricing signals for land development, road use, congestion and parking, combined with better integration of public transit planning. To prevent the marginalisation of low-income households, planning policies should support social mix and increase incentives for private-sector development of affordable housing.

Canada experienced a housing boom over the last decade, as did many other OECD countries, spurred by strong economic and population growth and easing credit conditions. Real house prices have appreciated by 87% since 2000 and, unlike many other countries, generally remained high throughout the global financial crisis. Over this period Canada's homeownership rates rose more than in any other advanced country, from 66% in 2001 to 69% by 2011. Residential investment has expanded to near historical highs of 7% of GDP from 4.4% in 2000, raising doubts about the sustainability of the boom. Adding further to such concerns, Canada's house prices relative to incomes and rents sit among the highest in the OECD with respect to long-term averages. Such signals of overvaluation appear to reflect dynamics in only a few major cities, however, given the heterogeneous nature of housing markets across the country.

Overall, Canadian residents generally enjoy good quality and affordable housing: the share of household income spent on shelter costs is close to the OECD average (Figure 1.1), and a higher-than-average 90% report to be satisfied with their current dwelling conditions (OECD, 2013a). Rising house prices have not prevented homeownership rates from increasing over the last decade because low interest rates and a loosening of credit restrictions have increased households' borrowing capacity. Accordingly, the household debt-to-income ratio has surged to record highs, reaching 166% in 2013 Q3, up from 110% in 2000.

Figure 1.1. **Housing expenditures**

As a percentage of household gross adjusted disposable income,[1] 2011 or latest available year



Note: Housing expenditures include actual and imputed rents, expenditure on maintenance and repair of the dwelling, on water supply, electricity, gas and other fuels, furniture, furnishings and household equipment, goods and services for routine maintenance of the house.

1. Gross of depreciation but after taxes and transfers as well as social transfers in kind such as education and health care.

Source: OECD (2013), *How's Life? 2013 – Measuring Well-being*.

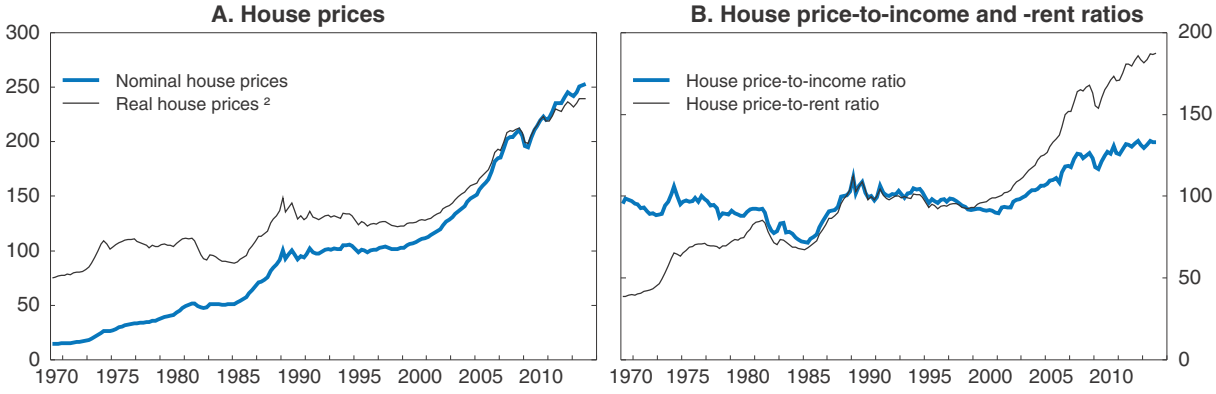
StatLink http://dx.doi.org/10.1787/888933079155

High house prices and household debt have raised concerns

Real house prices have generally trended upwards since 1970, punctuated by three periods of major appreciation: the early 1970s, when real house prices grew 45%, the late 1980s, when they soared by 68%, and the current episode which began in 2000 (Figure 1.2, Panel A). Empirical evidence suggests that much of the upward trend in Canadian house prices, at least over the past 30 years, can be explained by income and population growth (Peterson and Zheng, 2011). Credit conditions have also played an important role: mortgage interest rates have trended down over much of this period, and the three major upturns since 1970 have all been characterised by double-digit annual growth in mortgage lending. Homeownership rates reached 69% in 2011, up from 60% in 1971, with the steepest increase over the 1991-2006 period. The increase would have probably been stronger, were it not for the trend towards delaying family formation over this period.

Figure 1.2. **House price indicators**

100 = Long-term average[1]



1. 1970 Q1 to 2013 Q4.
2. Deflated by private consumption deflator.

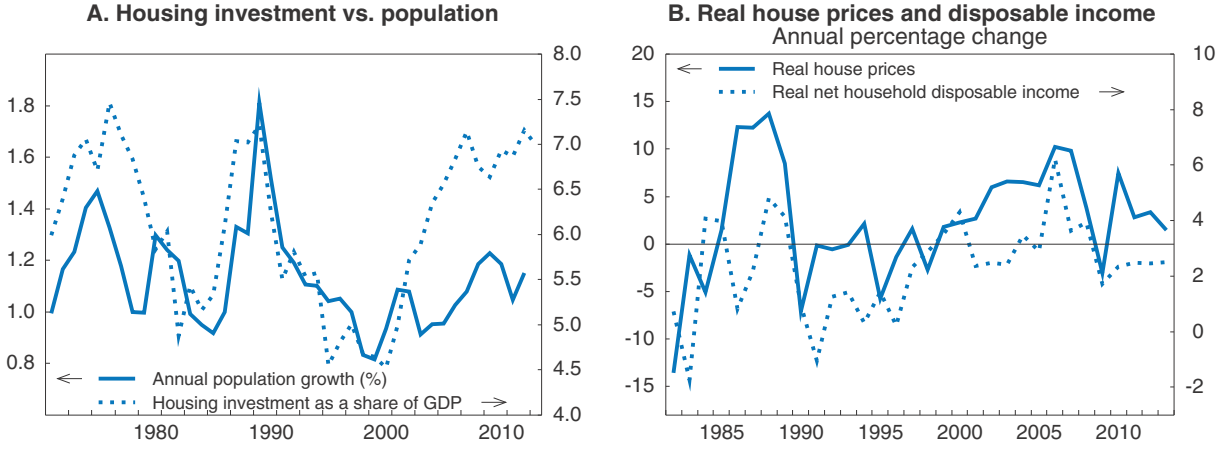
Source: OECD, *House Prices Database*, Teranet National Bank National Composite House Price Index.

StatLink http://dx.doi.org/10.1787/888933079402

As in many other OECD countries, preferential tax treatment for home ownership in Canada has probably helped amplify the effects of strong demand and cheap credit on house prices. Such tax advantages include untaxed imputed rents, a capital gains tax exemption on principal residences (including on death), and a GST/HST New Housing Rebate that reduces the effective rate of value-added tax on new qualifying homes from 5% to 3.2%. However, unlike many other countries, owner occupiers cannot deduct mortgage interest expenses from their taxable income, which offsets some of the bias. More generally, home owners cannot deduct housing expenses such that neither income nor the expenses associated with the properties are provided tax recognition. Tax allowances also exist for first-time homebuyers: the Home Buyers' Plan (HBP) allows such households to borrow up to CAD 25 000 from their untaxed Registered Retirement Savings Plans (RRSP) funds for a down payment on a home, and the First-Time Home Buyers Tax Credit provides them a tax credit of CAD 750. There is evidence that HBP tax expenditures disproportionately benefit wealthier households, given that low-income individuals are less likely to have any RRSP savings (Steele, 2007).

The current upturn appears to differ from previous ones in that rising population growth appears to have elicited a far larger response in housing construction as a share of GDP than in the past (Figure 1.3, Panel A), although some of this may reflect a catch-up from apparent underinvestment in the 1990s. It may also reflect the faster growth in the population aged 25-34, the group most likely to enter homeownership, in recent years. Between 2007-12, this population segment expanded by on average 1.8% annually, compared to 1.2% for the total population. Furthermore, house price increases have outpaced household income growth, despite this outsized supply response (Figure 1.3, Panel B). House price growth since 2000 has been broad based, although the magnitude of increase varies considerably across cities and dwelling types. In addition to a global low interest rate environment, the availability of cheap credit and strong economic growth, persistent increases in commodity prices and thus the terms of trade have also contributed to rising house prices in resource-based regions (Figure 1.4, Panel A), through higher incomes and thus demand but also through costlier construction materials and higher labour costs.

Figure 1.3. **Housing market dynamics**



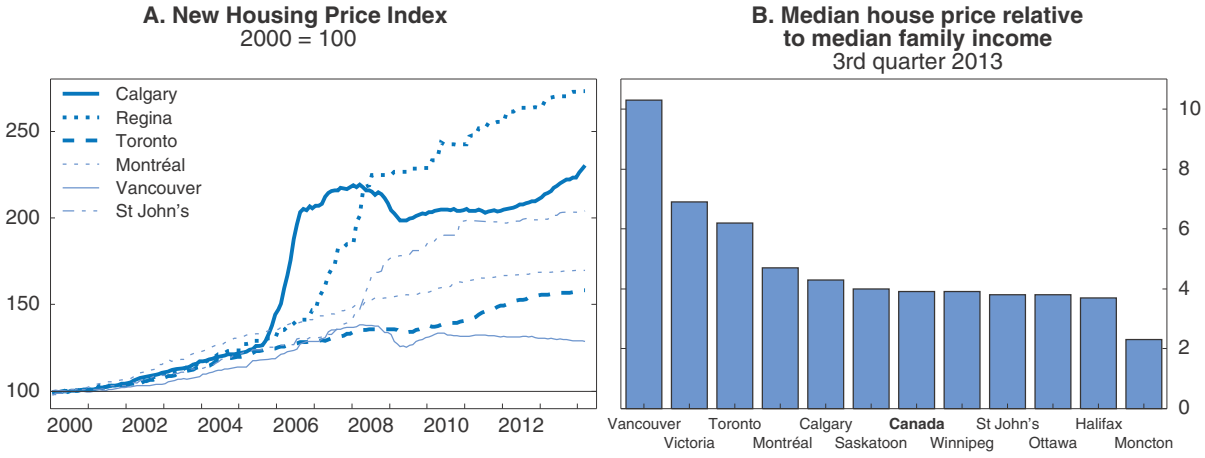
Source: OECD, Economic Outlook 95 Database.

StatLink http://dx.doi.org/10.1787/888933079421

Despite declining slightly in 2009 during the global financial crisis, real house prices have since rebounded to new peaks, prompting much debate about whether a "bubble" has formed (e.g. Roubini, 2013; O'Brien, 2013). For example, analysis by TD Economics (2012) suggests prices had begun to outstrip fundamentals starting in 2006. By November 2013, Fitch Ratings estimated that house prices were still overvalued by as much as 20% (Fitch, 2013), while the IMF's 2014 Article IV report (IMF, 2014) concluded that house prices were 10% above levels justified by fundamentals. By contrast, other analyses conclude that house prices are consistent with fundamentals, including unusually low interest rates (e.g. Wiebe, 2014; Dunning, 2014).

Much of the concern over a potential bubble is prompted by record high house prices relative to incomes and rents. These ratios are among the highest in the OECD relative to their long-term averages (see Table 1.1 for the former). However, neither gives an accurate picture of affordability or sustainability: price-to-income ratios are commonly based on average measures, whereas homeowners typically have higher-than-average income levels. Looking at price-to-rent ratios may also be misleading due to a number of

Figure 1.4. **Housing market dynamics vary widely across the country**



Source: Statistics Canada and Demographia, *International Housing Affordability Survey*, 2014.

StatLink http://dx.doi.org/10.1787/888933079440

Table 1.1. **Price-to-income ratio**

Country-specific long-term average (1981 to 2013) = 100

	1981-85	1986-90	1991-95	1996-2000	2001-05	2006-10	2011-13	2013 Q4[1]
Canada	**78.3**	**94.5**	**99.3**	**92.2**	**99.0**	**119.6**	**128.5**	**130.6**
United States	108.6	103.5	96.4	92.9	104.9	102.6	85.3	90.2
Japan	118.2	123.6	116.1	101.2	87.1	73.0	65.2	62.9
Germany	132.1	109.0	106.9	99.6	86.7	77.3	80.8	84.1
France	89.3	93.0	88.9	78.5	100.9	130.7	130.9	127.9
Italy	104.7	85.4	101.0	82.3	99.7	118.2	114.5	108.2
United Kingdom	81.0	102.2	80.2	78.5	113.6	131.3	122.0	124.2
Australia	77.1	86.6	91.5	89.1	117.1	126.3	120.6	126.9
New Zealand	n.a.	74.4	81.5	91.7	106.2	131.3	125.2	131.5
OECD	104.7	103.9	98.7	91.7	101.1	103.5	93.9	95.3

Note: Nominal house prices divided by nominal disposable income per head.
1. Or latest observation.
Source: OECD *House Prices Database*.

measurement issues (Box 1.1) and because rent controls in half of the provinces (Table 1.2) have restrained the rise in rents. Such metrics also ignore the fact that low mortgage interest rates have made owning much more affordable over the past decade. Nonetheless, the cost of owning a home relative to renting has risen substantially above its long-term average (Figure 1.5).

Housing market imbalances appear localised

In Canada, national house prices may be a poor signal of underlying market conditions, given the heterogeneous nature of its housing markets. An earlier study by the Bank of Canada found that housing markets across the country are segregated, with little long-run correlation in price movements among major urban centres (Allen et al., 2006). In the short run, however, house prices tend to co-move at the regional level (Cunninghan and Kolet, 2007). Contemporaneous correlations at the annual frequency indicate strong linkages exist among the eastern markets of Toronto, Hamilton, Windsor, Montréal and Québec City, as well as among some western cities (Table 1.3). Furthermore, recent analysis

Box 1.1. **Why price-to-rent ratios may be overestimated**

In house price-to-rent ratios, the Teranet/National Bank index is the generally preferred measure for house prices, as it applies a repeat sales methodology to simulate a constant quality level and thus captures relatively pure price changes. However, many of the properties covered in the index may have undergone quality improvements due to renovations, which the measure does not adjust for (Dunning, 2014). Spending on home renovations has ramped up significantly since the mid-2000s to now account for 40% of residential investment, up from an average of 25-30% in the 1990s. Furthermore, the Teranet index covers only 11 major markets, which have generally experienced more rapid population and house price growth than the national average. As a result, the use of this index may overestimate the extent of national house price appreciation. In addition, the rent measure normally used in price-to-rent ratios is the rent component of the Consumer Price Index, which has some technical flaws that serve to underestimate true rent increases. For example, data prior to July 2009 assumed that rents remained unchanged when tenants moved; in reality, rents tend to increase with changes in tenancy, and one quarter of renters move each year (Dunning, 2014). Statistics Canada addressed this issue with methodological changes to the data from July 2009 onwards.

Source: Dunning, W. (2014), "How to Dissect a Housing Bubble", Will Dunning Inc., 12 March.

Table 1.2. **Provinces with rent controls**

Province	Regulations for rent increases
Ontario	Landlords can increase the rent for existing tenants with 90 days written notice once every 12 months according to provincial guidelines, which the government sets each year based on CPI inflation. To increase rent beyond the guideline, landlords must apply for permission to the Landlord and Tenant Board. There are no limits on rent increases when there is a change in tenancy.
Québec	Landlords can increase the rent for existing tenants once every 12 months. There are no limits on rent increases, but tenants may contest the adjustment by applying to the court. The landlord may increase the rent upon a change in tenancy but must provide the tenant a notice stating the lowest rent paid in the 12 months preceding the beginning of the lease. The tenant may contest the rent and ask the *Régie du logement* to fix its level.
British Columbia	Landlords can increase the rent once per year with three months' notice by a percentage equal to the inflation rate plus two percent. The government sets the maximum allowable rate of increase each year. Tenants cannot dispute the rent increase, unless it exceeds the allowable amount.
Manitoba	Landlords can increase the rent for existing tenants with three months' written notice once every 12 months according to annual provincial guidelines. The landlord may apply to the Residential Tenancies Branch for a larger increase upon demonstrating that the guideline amount will not cover the cost increases incurred. A tenant may contest any rent increase through the Residential Tenancies Branch.
Prince Edward Island	Landlords can increase the rent once per year with three months' notice by an annual allowable percentage set by the Island Regulatory and Appeals Commission each year. To increase rent above the allowable rate, landlords must get approval from the Director of Residential Rental Property. Landlords may not increase the rent for new tenants if a rent increase was already made in that year.

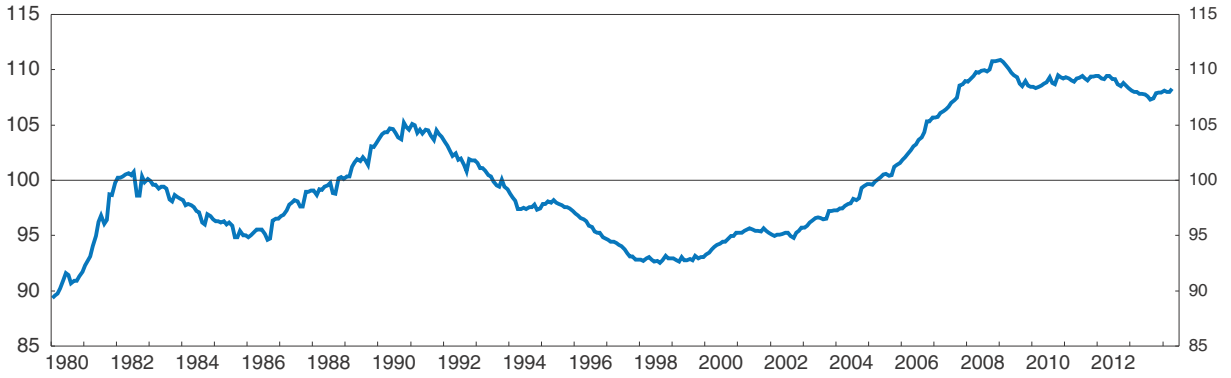
Source: CMHC.

suggests that commodity price movements appear to influence house prices in western provinces but also in Toronto and Québec (Wiebe, 2013). Vancouver's prices were boosted by the 2010 Winter Olympics as well as by immigration-induced rapid population increases, as have those in Toronto and Montréal.

Housing valuations vary widely across cities and by type of dwelling. For example, across 35 Canadian cities included in the 2014 Demographia survey of housing affordability, median house prices ranged from 10.3 times the median household income in Vancouver, to 2.3 in Moncton (Figure 1.4, Panel B). The nation as a whole was considered "moderately" unaffordable with a median price-to-income multiple of 3.9, placing Canada

Figure 1.5. **The cost of owning *versus* renting a home is high**

Index, 1990-2013 = 100



Note: Defined as the ratio of CPI "Owned accommodation" to CPI "Rented accommodation".
Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079459

Table 1.3. **Contemporaneous correlation of annual house price changes across Canadian cities**

1985-2013

	Canada	Victoria	Vancouver	Calgary	Edmonton	Regina	Saskatoon	Winnipeg	Windsor	Hamilton	Toronto	Ottawa	Montréal	Québec	Halifax	St. John's
Canada (average)	1.00															
Victoria	0.47	1.00														
Vancouver	0.71	0.80	1.00													
Calgary	0.54	0.36	0.44	1.00												
Edmonton	0.52	0.44	0.54	0.86	1.00											
Regina	0.16	0.07	0.21	0.18	0.36	1.00										
Saskatoon	0.36	0.15	0.34	0.42	0.67	0.85	1.00									
Winnipeg	0.42	0.13	0.28	0.44	0.50	0.76	0.76	1.00								
Windsor	0.55	0.16	0.28	0.12	0.07	-0.33	-0.18	-0.15	1.00							
Hamilton	0.90	0.30	0.43	0.40	0.34	0.03	0.22	0.33	0.65	1.00						
Toronto	0.89	0.18	0.44	0.21	0.13	-0.04	0.10	0.21	0.66	0.91	1.00					
Ottawa	0.54	0.44	0.39	0.13	0.15	-0.03	0.05	0.13	0.21	0.54	0.47	1.00				
Montréal	0.76	0.32	0.38	0.19	0.23	0.11	0.20	0.38	0.43	0.85	0.72	0.65	1.00			
Québec	0.67	0.42	0.40	0.19	0.21	0.16	0.11	0.30	0.46	0.71	0.61	0.54	0.83	1.00		
Halifax	0.44	0.20	0.34	0.25	0.34	0.67	0.63	0.63	-0.15	0.29	0.27	0.30	0.44	0.38	1.00	
St. John's	0.11	0.17	0.15	-0.14	-0.03	0.62	0.29	0.45	-0.06	0.08	0.04	0.26	0.33	0.55	0.46	1.00

Source: Statistics Canada New House Price Index.

as the seventh least affordable out of nine mostly English-speaking countries. Nonetheless, the study suggests almost 40% of the country's population lives in a city where house prices are seriously or severely unaffordable. Meanwhile, a recent study by BMO Capital Markets concluded that three-quarters of Canada's housing markets are affordable for the typical family, with mortgage payments and other housing costs below 40% of the median family income, and most would remain so if interest rates were to increase by two percentage points (Guatieri, 2013). The main exceptions are Vancouver and Toronto, where house price growth in the past few years has been driven entirely by single-family homes (Figure 1.6), suggesting that *ex ante* demand has outstripped supply in these markets. Meanwhile, prices for multi-unit dwellings in these cities have flattened in recent years, given the strong supply response in the condominium sector. Land-use constraints may be a contributing factor behind this divergence; this will be discussed below.

Figure 1.6. **Prices for single-detached houses versus apartments**

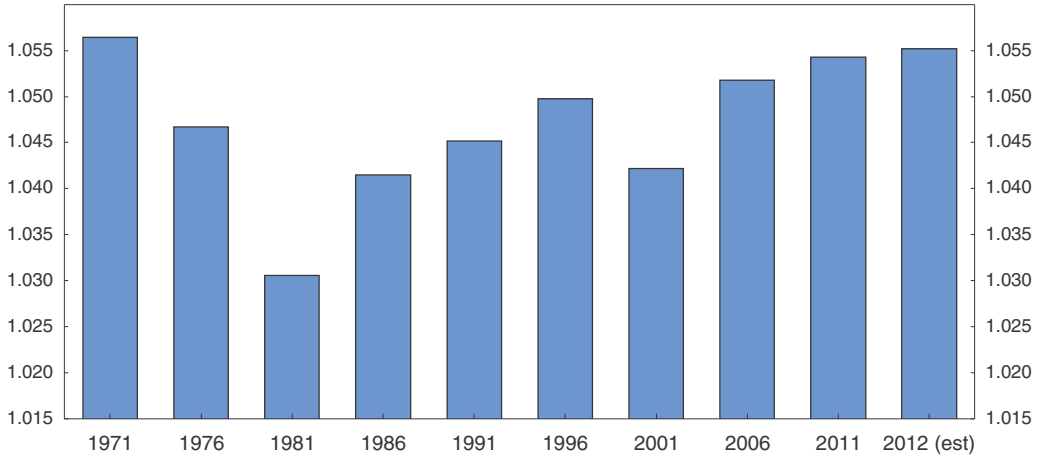
Index, January 2005 = 100

Source: Canada Real Estate Association.

StatLink http://dx.doi.org/10.1787/888933079478

Another source of concern has been the surge in residential construction as a share of GDP towards the peaks hit in previous housing booms (Figure 1.3, Panel A). Empirical estimates by the IMF (2013) concluded that by mid-2012 Canada's housing stock was 1.5% in excess supply relative to its "equilibrium" level as determined by household formation, disposable incomes, construction costs, mortgage rates and house price growth. The stock of dwellings per household has indeed increased over the 2000s and appears to be at a 40-year high (Figure 1.7). Some of this may reflect a rising demand for vacation homes or investment properties: the share of households with secondary properties was steady over 1999-2005 but grew from 16.1% in 2005 to 18.4% in 2012 (Statistics Canada, 2014).

Figure 1.7. **Dwellings per household**



Note: Dwelling stock uses Statistics Canada data until 2000 and afterwards is estimated using CMHC data on housing completions, conversions and the long-term average rate of demolitions. For the 2012 estimate, the number of households is based on Statistics Canada's estimates of population growth and assumes average household size remained constant at 2011 levels.

Source: Statistics Canada, *2011 Census of Population*.

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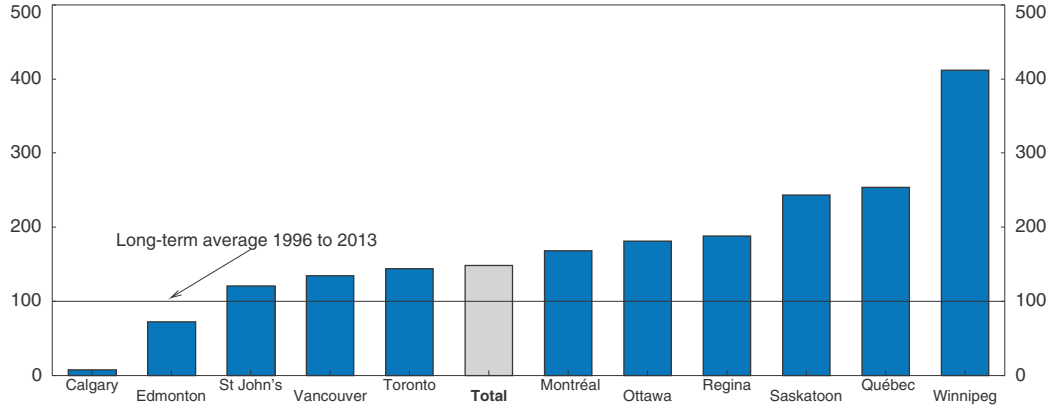
Overbuilding appears most evident in condominium markets in major cities. In cities such as Winnipeg, Québec and Saskatoon, stocks of newly completed but unsold apartments are over twice their long-term averages (Figure 1.8). In Toronto, although the inventory of unsold apartments has been at or below one month's supply for over a decade (CMHC, 2013), the number of apartments under construction spiked to a record high of over 58 000 by February 2014, about three times the long-term average. Between 2008 and 2012, condominium starts averaged 20 400 units annually, far higher than the estimated demographic requirement of 14 000-15 000 units per year (Dunning, 2013). The majority of these units are scheduled for completion in 2014-15. However, given an average completion rate of about 18 000 units per year, it is likely that capacity constraints will delay this schedule significantly (Dunning, 2013), easing downward price pressures.

Figure 1.8. **Stocks of unsold new apartments per 1 000 inhabitants relative to long-term average**

March 2014, per cent



Source: Statistics Canada.

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An excess of condominiums relative to demographic fundamentals may indicate they are increasingly demanded as investment properties, although data are lacking to confirm this. Population ageing and decreasing household size suggest that demand in the long term could increasingly favour apartment living. Furthermore, there has been a lack of investment in rental apartment buildings for many years: construction of new purpose-built rental housing trended down over the past few decades and remained flat over the 2000s. Condominiums have thus contributed an increasing share to the rental stock in all major cities and now account for 40-50% of the total rental supply in Vancouver and Toronto. Almost 30% of the entire condominium stock in Canada was being rented out in 2011.

To the extent that investment demand for condominiums reflects expectations of speculative gains, this market may be susceptible to shifts in investor sentiment. There has been much debate about the role of foreign investment driving the influx of condominiums in major cities like Vancouver and Toronto, and contributing to a rising stock of empty units. The evidence is largely anecdotal, however, given a lack of data. However, some studies that attempt to measure the degree of speculative investment in downtown Vancouver condominiums have found that, although almost half are investor-owned, perhaps only 5.5-8.5% sit empty all year round (Yan, 2009 and 2013).

Nonetheless, there are risks of a sharp price correction to the extent that demand is insufficient to absorb the huge supply of condominium units coming on stream in Toronto and given the large stock of unabsorbed units in other cities. Much of the condominium construction underway reflects demand from two to three years ago. Condominium developments typically require a majority of the units to be pre-sold before construction can begin. Conditional on a 65% presale rate, CMHC insures loans up to a maximum 85% loan-to-cost (LTC) ratio for condominium developments, but even those with only 30% presales can still obtain CMHC insurance (with lower LTC coverage). About 89% of the condominium units under construction in Toronto were pre-sold by early 2013 (CMHC, 2013). However, given the tightening of mortgage insurance regulations over the last few years, there are signs that pre-construction buyers in Toronto are facing increasing difficulties obtaining loans to finalise their deals. Buyers of pre-construction units need only pay a deposit and demonstrate that they have been "pre-approved" for a bank loan but do not need to secure financing until the sale closes upon completion two to three years later. Many of these buyers have reportedly been forced to forfeit their deposits or sell their units before completion on assignment markets at discounted prices (Pigg, 2013). These problems appear to be limited to the luxury segment, however, which is a relatively small portion of the market.

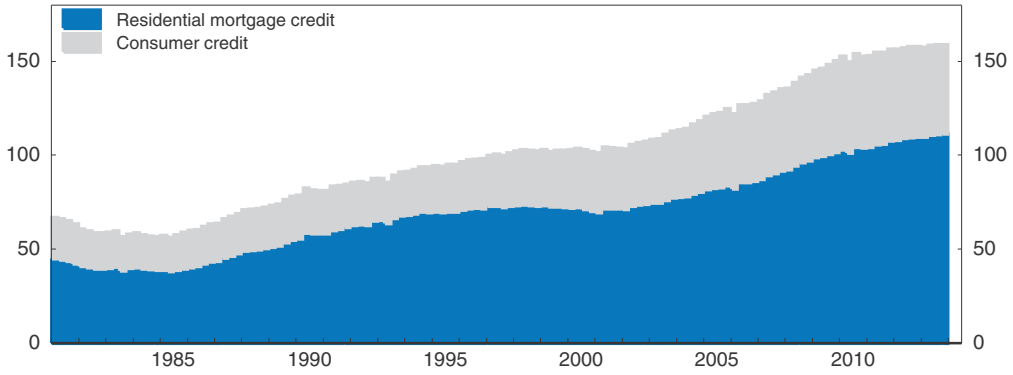
Although bubbles are difficult to identify in real time, the main vulnerabilities appear to be concentrated in the condominium segment of selected major cities. However, risks remain that a major correction in these segments could spill over into other markets, or that external triggers such as an oil price shock could have wide reaching effects on Canadian housing markets. Linkages across housing market segments are likely to exist through the banking system: Canada's five major banks hold 65% of outstanding residential mortgages and lend across the country, so major losses experienced in one market segment could instigate a more general pullback in credit supply.

High debt levels increase household vulnerabilities

Regardless of whether or not a housing price bubble exists, very high household debt levels represent a major vulnerability. Household debt began trending upwards in the mid-1980s from a level of 60% of disposable income to reach a record high of 166% by mid-2013. Residential mortgage credit has driven most of the increase over this period (Figure 1.9). A Bank of Canada study suggested that home equity extractions have accounted for much of the growth in mortgage debt since 1999, increasing from 2.2% of household disposable income to peak at 9% in 2007, before easing to 8% in 2009 (Bailliu et al., 2011). Much of this increase came from net mortgage refinancing, whereby owners increase the size or term of their mortgage while remaining in the home. Meanwhile, mortgage debt associated with the purchase of newly constructed units grew only modestly from 2.3% of disposable income in 1999 to 3.4% in 2009.

Consumer credit has also grown substantially since the mid-1990s. Secured personal lines of credit (PLCs) backed by housing assets (including home equity lines of credit, or HELOCs) have been the predominant source of expanding consumer debt relative to income since the mid-1990s (Crawford and Faruqui, 2011). Secured PLCs grew from 11% of consumer credit in 1995 to almost 50% by end-2011, reflecting rising house prices (which increased collateral available) and stronger marketing of these products since the mid-1990s (Crawford and Faruqui, 2011).

Figure 1.9. **Household debt**
As a percentage of disposable income



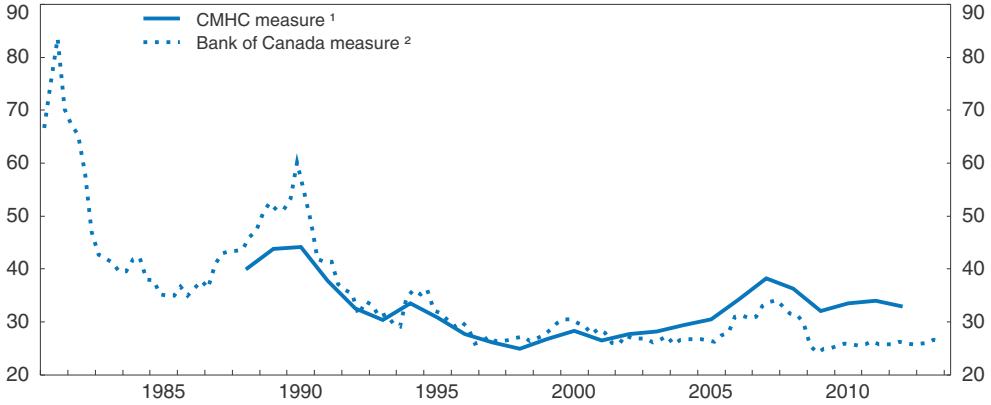
Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079535

Although growth in national house prices and mortgage credit has moderated since 2011, the household debt-to-income ratio has continued to increase. High levels of mortgage debt make households vulnerable to changes in house prices, interest rates and incomes. However, much of the debt is concentrated in wealthier households with the greatest capacity to meet debt payments: households in the top income quintile (earning over CAD 100 000 annually) hold over half of the total (Chawla and Uppal, 2012).

Mortgage debt service ratios currently remain below or near long-term averages, thanks to low interest rates (Figure 1.10). However, rising interest rates or any shock that causes a significant house price correction or job losses could place considerable strain on household and bank balance sheets. Since Canadian mortgages typically have fixed rates

Figure 1.10. **Mortgage payment affordability**
Per cent of personal disposable income per worker



1. CMHC, adapted from Statistics Canada (CANSIM) and the Canadian Real Estate Association (CREA). The monthly mortgage payment is calculated using the prevailing average Multiple Listing Service (MLS) price and the five year fixed mortgage posted rate prevailing in each period, assuming a 25% down payment and 25-year amortisation.
2. The Bank of Canada Housing Affordability Index is calculated using an average of the Royal Lepage Resale Housing Price and the New Housing Price Index, and a blended 5-year fixed and variable mortgage rate, assuming a 5% down payment and 25-year amortisation.

Source: Canada Mortgage and Housing Corporation, Bank of Canada.

StatLink http://dx.doi.org/10.1787/888933079554

of no longer than five years, monetary tightening can have a large impact on household finances compared to the United States, for example, where rates are commonly locked in for some 30 years. Bank of Canada estimates suggest that if real mortgage interest rates were at longer-term norms of 4%, affordability would deteriorate to its worst level in 16 years (Carney, 2011). Others affirm that even an interest rate hike of 2 percentage points could push 10% of indebted households into what are commonly considered unaffordable (over 40%) debt-service ratios (Alexander, 2012). However, such estimates do not take into account the possibility that interest-rate hikes might be gradual and accompanied by higher income levels, which would mitigate the impact on household balance sheets.

Furthermore, lower-income households would be more vulnerable to a deterioration in macroeconomic conditions; a study by Meh et al. (2009) examining 2005 survey data revealed that among households with mortgages, those in the bottom income quintile spent over 70% of their incomes servicing mortgage obligations. Based on 2009 survey data, Hurst (2011) found that households with incomes below CAD 50 000 were six times more likely to be spending over 40% of their incomes on debt service, compared to those with incomes of CAD 50 000-80 000. Furthermore, such lower-income households had debt-to-income ratios over 160 percentage points higher than those in the next higher income bracket. This pattern of higher debt burdens among poorer households is not unusual in advanced economies, although only a handful have such data available (Girouard et al., 2006). However, many of these households may be self-employed or seniors with strong asset positions, who fund their housing costs by depleting assets (Conference Board of Canada, 2010).

Assessing financial system risks from housing

Concerns about Canada's housing markets commonly arise from comparisons with the US situation prior to the subprime lending crisis. Canada's household debt-to-income ratio and house price growth since 2000 are approaching those experienced at the height of the US boom, when measured on a comparable basis. Although the two housing markets are similar in many respects, overly relaxed lending standards played a critical role in the US housing boom and subsequent bust (MacGee, 2009). This section assesses factors behind the Canadian housing boom and concludes that a US-style crash is unlikely to materialise.

Factors driving the strength in housing markets before and since the crisis

Credit availability improved significantly over the early 2000s due to mortgage securitisation activities by the Canada Mortgage and Housing Corporation (CMHC), a federal crown corporation (Box 1.2). In particular, the CMHC launched its Canada Mortgage

Box 1.2. **Canada's housing finance system compared to its US counterpart**

The typical residential mortgage in Canada has been a fixed-rate loan amortised over 25 years, with terms reset every six months to five years. This contrasts with the US market, where borrowers can lock in rates for 30-40 years. Similar to Canada, short-term (one to three years) variable-rate mortgages also dominate in countries such as Australia, Ireland, Spain and the United Kingdom (Lea, 2010). These differences exist mainly because much US mortgage lending is done by non-bank financial institutions that rely heavily on securitisation in the secondary market for funding. In most other countries including Canada, mortgage lending is concentrated in the large banks and funded to a great extent from retail deposits. Because the Canada Deposit Insurance Corporation

Box 1.2. **Canada's housing finance system compared to its US counterpart** *(cont.)*

guarantees retail term deposits only out to five years, attracting retail deposits beyond five years is more difficult (Kiff et al., 2010).

Mortgage insurance

Roughly 60-70% of home loans in Canada are insured against default, as compared to 15% in the United States prior to the financial crisis. Much of this difference reflects Canadian regulation, which requires federally regulated financial institutions (FRFIs) to insure all mortgages with greater than 80% loan-to-value (high-LTV) ratios. Mortgage insurance protects the lender against 100% of losses in the event that the borrower defaults, and covers the entire amortisation period. Mortgage lenders pay a premium to purchase default insurance on the entire loan – which varies according to characteristics of the loan, property and borrower – that they then charge to the borrower in the form of an upfront fee. By contrast, in the United States lenders are required to insure only high-LTV mortgages that are purchased or securitised by the two government-sponsored enterprises (GSEs), and the insurance needs to cover only the portion of the loan that exceeds 70-80% of the property value. They pay monthly premiums and can cancel the insurance once the loan balance declines below 80% of the house value.

There are three providers of mortgage default insurance in Canada: the Canada Mortgage and Housing Corporation (CMHC), a federal crown corporation, and two private firms: Genworth Financial and Canada Guaranty. CMHC is the largest provider, with about 65% of the market. The federal government fully backs CMHC-insured mortgages, while guaranteeing 90% of the value of those provided by private insurers in the event of insurer insolvency (i.e. the government would honour lender claims for privately insured mortgages in default, less 10% of the original principal amount of the mortgage and any applicable liquidation proceeds). Mortgage insurance is also required for mortgages securitised through CMHC's securitisation programmes (see below). Since 1989, lenders have been able to purchase "bulk insurance" from CMHC on portfolios of conventional low-LTV mortgages, and this is widely used. In 2014, CMHC reduced its annual issuance of portfolio insurance from CAD 11 billion to CAD 9 billion. Portfolio insurance is also available from the private insurers. In this case the lender pays the insurance premium. The two main reasons lenders buy bulk insurance are capital relief and the ability to use insured mortgages to access the National Housing Act Mortgage-Backed Securities (NHA MBS) and Canada Mortgage Bonds (CMB) programmes.

CMHC is governed by the CMHC Act, the National Housing Act (NHA), and the Financial Administration Act. Since 2012, it has been supervised by the Office of the Superintendent of Financial Institutions (OSFI), the federal financial regulator, and has recently been limited to insuring no more than CAD 600 billion of mortgages. It also provides a number of social services, such as funding affordable housing and housing for Aboriginals on and off-reserve.

Private mortgage insurers are also regulated by OSFI, and, since 2013, operate under the Protection of Residential Mortgage of Hypothecary Insurance Act, which limits their coverage to CAD 300 billion worth of mortgages outstanding. Private insurers pay a fee to benefit from the government guarantee, which up until 2013 went into a special fund. The government guarantee would have kicked in only upon the fund's depletion and covered the liabilities of private insurers only after insolvency. Since then, the fund has been eliminated, with the amounts held transferred to the regulatory capital base of the private insurers, and higher minimum capital test ratios have been applied.

Box 1.2. **Canada's housing finance system compared to its US counterpart** *(cont.)*

Mortgage securitisation

CMHC operates two permanent securitisation programmes that help to enhance the supply of low-cost mortgage funding: mortgage-backed securities launched in 1987 under the authority of the National Housing Act (NHA MBS), and the Canada Mortgage Bonds (CMBs) introduced in 2001. Issuers must meet stringent eligibility requirements and pay a fee to CMHC, which guarantees the timely payment of principal and interest for all NHA MBS and CMBs. NHA MBS are backed by pools of residential mortgages insured by CMHC under the National Housing Act or by private mortgage insurers under the Protection of Residential Mortgage or Hypothecary Insurance Act. Selling NHA MBS provides an additional source of funding for mortgage lenders, reducing their reliance on retail deposits and lowering the cost of funding. Investors in NHA MBS receive monthly cash flows from the principal and interest payments of the underlying mortgages. Because the underlying mortgages are insured, investors face little credit risk but are subject to uncertain cash flows due to prepayment and interest-rate risk. Financial institutions can sell NHA MBS either to individual investors or to the Canada Housing Trust, a special-purpose entity run by CMHC that issues non-amortising CMBs. By converting the monthly cash flows of the NHA MBS into bond-like payments (with semi-annual coupons and a final principal payment), CMBs appeal to a broader investor base and enjoy a high level of liquidity, helping to further reduce the cost of funding mortgages (Kiff et al., 2010). The CMB programme has helped expand the range of mortgage products available to households; for example, the launch of a 10-year CMB in 2008 facilitated the offering of mortgages with terms longer than five years (CMHC, 2012).

In 2007, OSFI first authorised Canadian banks to issue covered bonds to meet mortgage funding needs. Covered bonds are secured by a segregated pool of assets, primarily residential mortgages, and are not guaranteed by CMHC or the government. However, up until 2012, CMHC-insured mortgages and NHA MBS were used as collateral for the majority of covered bond issuance. Because of a general reluctance to allow FRFIs to issue secured debt that would rank ahead of depositors, OSFI limits their use to 4% of total assets. The 2012 Budget introduced a legislative framework for FRFIs issuing covered bonds, which prohibited the use of insured residential mortgages as collateral.

Differences between CMHC and the US GSEs

CMHC runs its insurance operations on a commercial basis, but unlike the US GSEs (Fannie Mae and Freddie Mac), it aims not to maximise profits but rather to "earn a reasonable rate of return within its overall public mandate". This mandate includes providing financing options to underserved markets such as multi-unit rental buildings, retirement and long-term care facilities, and rural housing. CMHC also differs from the US GSEs in that its role in housing finance is to ensure a steady availability and choice of funding options. It has no special mandate to facilitate homeownership for any particular group, whereas the GSEs were required to allocate a minimum percentage of their financing activities towards facilitating homeownership for low- or moderate-income households (CBO, 2010).

Bond (CMB) programme in 2001 through creation of the Canada Housing Trust as a special-purpose entity to buy mortgage-backed securities from banks, using the proceeds from CMB issuance. This programme let financial institutions move originated mortgages off their balance sheets, thus lowering their capital requirements and allowing them to lend more at lower costs (Walks, 2012b). An evaluation by KPMG (2008) reported that CMB

issuance between 2001 and 2006 led to the creation of almost CAD 98 billion in credit, roughly 37% of the net increase in mortgage loans outstanding over this period. This programme also accounted for most of the growth in mortgage securitisation under the National Housing Act (NHA) over the early 2000s.

Because CMHC fully guarantees both NHA MBS and CMB payments and the underlying mortgages are insured with government backing, the securitisation programmes have reduced the cost of mortgage funding dramatically. Since it is the borrower who pays for the insurance, but the lender who is repaid the full amount of the mortgage in the case of default, Canadian financial institutions face almost no risk when issuing insured mortgages (for portfolio insured loans the lender pays for the insurance). Until regulatory changes in 2010, this created incentives to insure a maximum amount of mortgages and then to repackage them into MBS that could then be moved off their balance sheets by selling them into the secondary market (Walks, 2012a).

Lending restrictions were loosened

Mortgage lending conditions eased significantly from 2003 to mid-2007, reflecting an expansion of products that became eligible for government-backed insurance (Table 1.4). In particular, CMHC began extending insurance to interest-only mortgages, and to self-employed borrowers with no income verification documents, similar to "Alt-A" mortgages in the United States. The maximum amortisation length for government-insured mortgages was also raised from 25 to 40 years. Some of these changes were motivated by increased competition from US insurance companies entering the Canadian market, which was eroding CMHC's market share. This followed the Minister of Finance's decision in 2006 to extend its government backing to more private mortgage insurers, which resulted in four US-based companies entering the market. This decision was an attempt to promote greater competition and choice in the mortgage market, to keep pace with rising house prices and demand (Mohindra, 2010). Three of these withdrew from the Canadian market in 2008 due to major losses incurred during the US housing crash.

Table 1.4. **Innovations in the mortgage insurance market from 2003-07**

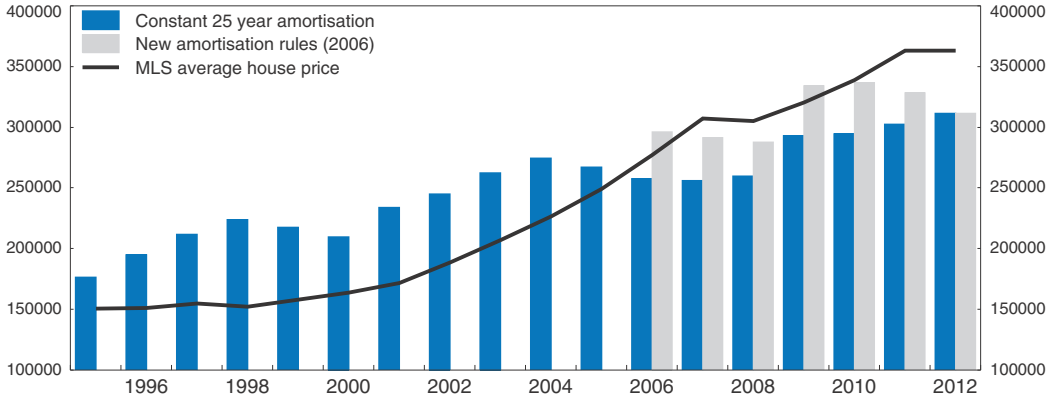
	Measure
2003	● Genworth Financial broadened the eligible sources of funds for the minimum down payment, allowing it to be borrowed.
March 2004	● CMHC "Flex Down" programme broadened the eligible sources of funds for the minimum down payment (5%), allowing it to be borrowed.
March 2006	● CMHC started to insure mortgage loans amortised up to 30 years (as a part of a pilot project).
	● Genworth announced it would insure 30- and 35-year loans.
June 2006	● CMHC started to insure mortgage loans amortised up to 35 years. CMHC started to provide insurance on interest-only payments for up to the first 10 years of a mortgage loan (for borrowers with a proven history of managing their credit).
September 2006	● Genworth announced it would offer insured 40-year mortgages [with loan-to-value (LTV) ratios up to 100%], with interest-only payments for the first 10 years.
Nov.-Dec. 2006	● CMHC started to insure mortgage loans amortised up to 40 years; CMHC started to provide insurance on mortgage loans with LTV ratios between 95% and 100% ("Flex 100").
March 2007	● CMHC started to insure mortgage loans to self-employed people without traditional third-party income verification documentation ("Self-Employed Simplified").
July 2007	● LTV limit after which a loan has to be insured increased from 75 to 80%.

Source: CMHC, Genworth, IMF (2013).

These products expanded access to homeownership to a wider range of households, while significantly increasing the average household's capacity to borrow (Figure 1.11).

Figure 1.11. **Effect of longer amortisation terms on the average household's capacity to borrow**

CAD



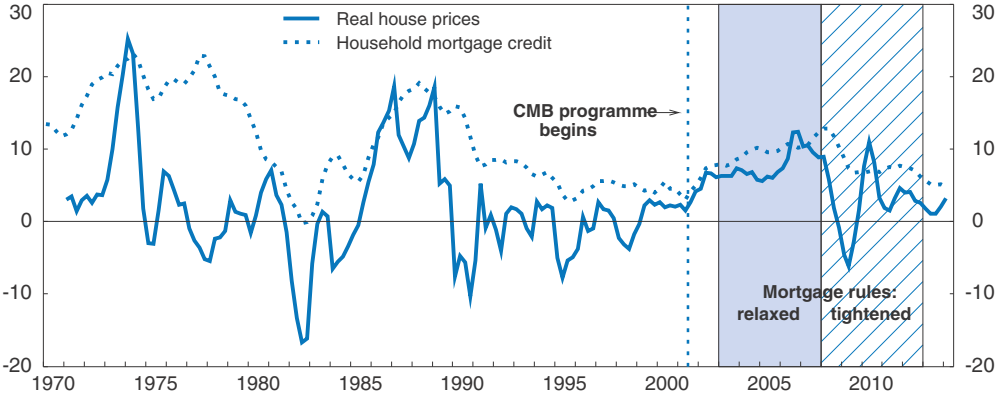
Source: Pomeroy (2013), "Speculators Beware: You Won't Get Rich Flipping Homes in the Next Decade", *CURE Policy Brief*, Issue No. 4.

StatLink http://dx.doi.org/10.1787/888933079573

Together with the CMHC's securitisation activities, they contributed to pushing up mortgage credit growth and house prices (Figure 1.12). Lengthening the amortisation terms on mortgages can adversely affect the social distribution of wealth, because it enables borrowers to take on larger debts, which bids up the price of housing for everyone, while increasing their interest payments over the lifetime of the loan (Walks, 2012a). Lenders and existing homeowners benefit from this change, at the expense of first-time homebuyers who end up paying more than otherwise to purchase the same house. The CMHC "Flex Down" programme, which allowed banks to effectively lend the down payments to borrowers (through "cash-back" mortgages), had similar effects, as banks typically recovered the amount by charging higher interest rates over the first five years of the term and restricting portability during those years.

Figure 1.12. **Real house price increases and household mortgage credit growth**

Year-on-year percentage change



Source: Teranet National Bank National Composite House Price Index from 1999 Q2; Department of Finance prior to 1999 Q2; and Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079592

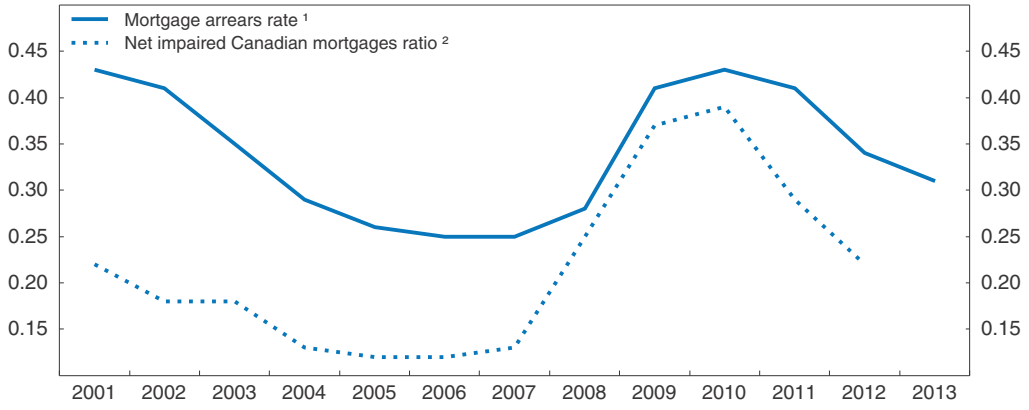
Banks are able to purchase the services of a computerised tool called Emili from CMHC, which assesses the risk of loans based on factors such as the estimated value of the home, buyer characteristics, average sales for the area and municipal property-tax assessments. Because Emili enables faster and cheaper mortgage approvals than sending an appraiser to physically look at the house, it became widely used. At the peak of the housing boom, some banks apparently relied solely upon automated assessments for a large share of their mortgages and refinancing (Robertson and Perkins, 2012). Data fed into the software can be flawed, however, as they rely heavily upon information provided by the seller, which may work towards raising the value of the home. Furthermore, physical characteristics of neighbouring homes may vary widely and provide inappropriate benchmark values. While on-site inspections can catch a lot of these flaws, biases may also exist within the appraisal industry, whereby mortgage lenders favour certain appraisers that push up the value of the property or enable a larger loan. Canadian financial institutions often keep lists of approved appraisers, a practice that has been illegal in the United States since the financial crisis (Robertson and Perkins, 2012).

Strong financial oversight and government intervention supported housing throughout the crisis

In contrast to many other OECD countries that experienced housing booms over the past decade, house prices in Canada held up well throughout the financial crisis, with the Teranet composite index declining only 8.5% from peak to trough before resuming its upward trend. Mortgage arrears remained low throughout the crisis at less than 0.5% of all mortgages and fell to 0.3% in mid-2013 (Figure 1.13). In fact, the majority of insolvent individuals filing for bankruptcy and debt restructuring in 2007-09 were tenants (Allen and Damar, 2011). This suggests that housing debt played a smaller role than unemployment in

Figure 1.13. **Mortgage arrears rates remain low**

Per cent



1. CMHC, adapted from Canadian Bankers Association by calculating the annual average mortgage arrears rate. Mortgage arrears rate is the number of mortgages in arrears as per cent of total number of mortgages, based on data from 9 banks. Arrears are defined as mortgages that are 90 days or more past due. The figure for 2013 is for June.
2. CMHC, adapted from annual reports from Bank of Montreal, Canadian Imperial Bank of Commerce, Royal Bank of Canada, TD Banking Group (as at 31 October of each year) by calculating the ratio. Impaired loans are residential mortgages that are 90 days past due, or 365 days past due if government-guaranteed, net of allowances for credit losses. The ratio is value of net impaired Canadian residential mortgages as per cent of total Canadian residential mortgages.

Source: Canada Mortgage and Housing Corporation.

StatLink http://dx.doi.org/10.1787/888933079611

driving insolvencies. As Australian, New Zealand and Norwegian housing markets also avoided busts, part of this strength may reflect the income advantage these economies have enjoyed from high commodity prices.

The resilience of Canada's housing market throughout the financial crisis is often attributed to the relatively stringent regulation and conservative lending practices of the banking system, and explicit government backing of the mortgage market (Kiff et al., 2010; Mason and Simon, 2009). In Canada, the Office of the Superintendent of Financial Institutions (OSFI) is the single regulator in charge of supervising federally regulated deposit-taking institutions (FRFIs), insurance companies and private pension plans. About 80% of outstanding residential mortgages in the country are originated by OSFI-regulated lenders (Crawford et al., 2013); another 12.5% come from credit unions and *caisses populaires,* which are provincially regulated. As mortgages originated by unregulated lenders are primarily funded by FRFIs (in which case the mortgages must meet FRFI standards, including OSFI's Guideline B-20, discussed below) or through CMHC's NHA MBS and CMB programmes (in which case the mortgages must meet the rules for government-backed insured mortgages), these mortgages are also usually subject to federal government mortgage standards. This contrasts with the fragmented regulatory structure of the United States, which is unique, given its numerous specialised regulatory agencies. Having a single financial regulator with responsibility for bank and non-bank lenders can lower the chances of regulatory capture or arbitrage, or co-ordination failure (Lea, 2010). OSFI employs a principles-based supervisory approach, which is intended to be broad-based and adaptive. It can issue guidance without need for new legislation or regulation, and has legal power to enforce compliance.

In all provinces except Alberta, bankruptcy laws provide lenders full recourse to borrowers' assets and future income in the event of default. These laws have discouraged strategic foreclosures, which are commonly believed to have played a role in the US housing crash, although recent evidence suggests this role was small (Gerardi et al., 2013). More importantly, the share of Canadian mortgage holders in negative equity positions has been negligible throughout the crisis, compared to almost one quarter in the United States at the end of 2009.

Whereas deposit-taking institutions play a dominant role in the Canadian mortgage market, they accounted for only 30% of residential loans in the United States before the crisis (Kiff, 2009). Canadian banks have been required to hold higher levels of capital than those imposed by the Basel Accord since 1997, at 7% for Tier 1 capital and 10% for total capital (compared to Basel requirements of 1% and 4%, respectively). In addition, Canadian regulations required common equity to account for at least 75% of Tier 1 capital and capped innovative instruments at 15%. It is likely that these stricter capital requirements limited banks' abilities to expand their balance sheets rapidly, while reducing the need to engage in wholesale borrowing (Ratnovski and Huang, 2009). However, an IMF study found that Canadian banks' pre-crisis simple capital ratios (i.e. total capital to total assets) and balance sheet liquidity were commensurate with their peers' in other OECD countries and that their key source of stability was instead their greater reliance on retail deposits rather than wholesale funding (Ratnovski and Huang, 2009).

Retail deposits have long been the main source of mortgage funding in Canada. Mortgage securitisation has accordingly been limited, with no more than one-fifth of residential mortgages securitised prior to the crisis, compared to about 60% in the

United States. Less than 2% of Canadian mortgages have been privately securitised, compared to 14% in the United States, although this market has virtually disappeared in both countries since the crisis (Kiff et al., 2010). It is commonly believed that increased securitisation was a major driver of the US subprime crisis. Because lenders that securitised their mortgages faced no loss in the event of default, this "originate to distribute" model reduced incentives to uphold underwriting standards and led to a deterioration in asset quality, as reflected in the growth in subprime lending. The sharp rise in delinquencies and eventually foreclosures in the United States over 2007-08 was concentrated in "non-prime" mortgages (Mayer et al., 2009). This includes loans targeted to borrowers with poor credit histories and high loan-to-value (LTV) ratios, as well as "Alt-A" mortgages provided to borrowers without full documentation of assets or income. US subprime mortgages were all privately securitised at first, but during the 2000s the GSEs steadily expanded their investments in subprime and Alt-A loans (CBO, 2010).

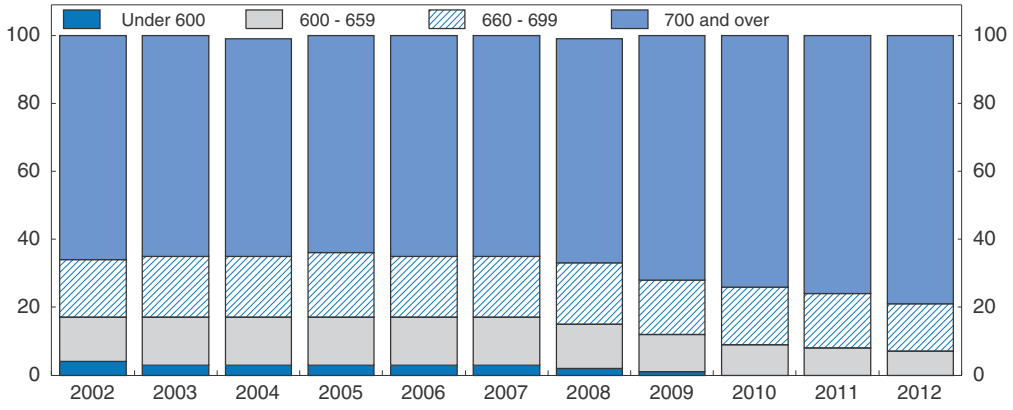
The important role of government-backed mortgage insurance in setting lending standards in Canada may have also helped limit the growth in subprime mortgages. Although such loans were available in Canada and grew rapidly in the pre-crisis years, most types of subprime mortgages were not eligible for government-backed insurance. This factor likely prevented the Canadian subprime market from expanding into the riskiest products available in the United States, such as negative-amortisation or NINJA (no income, no job, no assets) loans. In the United States such products extended credit to a new segment of homebuyers, pushing up prices beyond what could be supported by underlying incomes (Walks, 2012b). Although there is no uniform definition of a subprime loan, a commonly cited estimate suggests that prior to the financial crisis they constituted 5% of the stock of mortgages in Canada, compared to 22% in the United States (MacGee, 2009).

Even so, Canadian government-backed insurance began covering certain types of what are commonly labelled "non-prime" mortgages as from 2003, as discussed earlier and described in Table 1.4. It has been argued that Canada benefitted from being a late adopter of US mortgage-financing innovations (MacGee, 2009). Although such innovations contributed to lowering lending standards and enticing many lower-income home buyers to take on unsustainable levels of debt in the United States, there is little evidence that this occurred in Canada. This is because CMHC and the private insurers generally required higher credit scores to insure the riskier mortgage products that became available during that period (Table 1.4). Canadian credit scores generally range from 300 to 900, and a score above 660 is typically needed to qualify for prime rates. During the 2000s, the share of CMHC-insured mortgages with credit scores below 660 remained steady and below 20% (Figure 1.14). By contrast, in the United States the share of first-time homebuyers with credit scores below 620 rose from about 20% to 28% between 2003 and 2006 (Marion, 2013). Moreover, in Canada much of the growth in household debt during this period reflected net mortgage refinancing activity of existing homeowners (Bailliu et al., 2011), rather than new entrants into the ownership market. Furthermore, it appears that wealthier households accounted for the majority of new owners between 2001 and 2011: among Canadian households headed by individuals younger than 35, homeownership in the top two quintiles increased at twice the rate as in the bottom two quintiles (Crawford et al., 2013).

Despite these comparative strengths in the financial system, Canadian banks nevertheless experienced funding pressures during the financial crisis, and the government intervened directly by committing to purchase up to CAD 125 billion worth of NHA MBS from financial institutions. Beginning in October 2008, this Insured Mortgage

Figure 1.14. **Distribution of credit scores for approved high-ratio CMHC-insured mortgages**

Per cent



Source: Canada Mortgage and Housing Corporation.

StatLink http://dx.doi.org/10.1787/888933079630

Purchase Programme (IMPP) was conducted through a competitive auctioning process managed by CMHC, which ended in March 2010 with CAD 69 billion worth of NHA MBS having been purchased. CMHC estimates that the programme will have generated about CAD 2.5 billion in net revenues by the time it ends in 2014-15 (CMHC, 2012). The IMPP thus helped maintain the supply of longer-term credit throughout the crisis, at no financial cost or significant additional risk to taxpayers, since the underlying mortgages were already contingent liabilities of the federal government.

Regulations on mortgage financing have been strengthened since the crisis

The government has implemented a series of measures since 2008 to cool the housing market and contain risks to financial stability through tighter prudential regulations on government-backed mortgage insurance (Table 1.5). These include raising the minimum down payments required, bringing the maximum amortisation period on mortgages back down to 25 years (from 40), imposing maximum LTVs of 95% (80% for investment properties and mortgage refinancings), and tightening loan eligibility criteria. Government-backed insurance was withdrawn for home equity lines of credit and for home purchases above CAD 1 million.

These measures appear to have been effective: household borrowing, housing starts, home sales and house price appreciation have all moderated since mid-2012. Analysis by TD Economics (2012) reveals that the tightening of mortgage insurance rules curbed household credit growth by 2-3 percentage points on average from 2008-12 and also reduced home sales by 17% by end-2011 relative to what models would have predicted. It suggests that the shortening of amortisation terms had the largest dampening effect on housing demand, equivalent to a cumulative hike in interest rates of almost 2 percentage points. More recent analysis by the IMF (2014a) finds that the largest effect came from tightening LTV requirements for new mortgages and loan refinancing. However, while the impact on sales and credit growth has been persistent, the immediate drop in house prices after each stage of tightening has proven to be short-lived (Figure 1.12). House prices and resale activity rebounded anew in 2013, though that may reflect some temporary demand

Table 1.5. **Regulatory tightening on mortgage insurance since 2008**

	Measure
October 2008	● Maximum amortisation for new government backed insured mortgages set at 35 years. ● Maximum LTV reduced from 100 to 95%. ● Credit score floor at 600 (with some exceptions). ● New loan documentation requirements.
April 2010	● Maximum LTV for insured refinanced mortgages lowered from 95 to 90%. ● Minimum down payment on non-owner-occupied properties raised from 5 to 20%. ● More stringent eligibility criteria introduced (all borrowers required to meet the standards for a five-year fixed-rate mortgage, even if they choose a mortgage with a variable interest rate and shorter term).
Mar/April 2011	● Maximum amortisation for new government-backed insured mortgages cut from 35 to 30 years. ● Maximum LTV for refinanced mortgages lowered from 90% to 85%. ● Government-backed insurance withdrawn on non-amortising lines of credit secured by houses (HELOCs).
July 2012	● Maximum amortisation for new government-backed insured mortgages cut from 30 to 25 years. ● Maximum LTV for refinanced mortgages was lowered from 85% to 80%. ● Maximum gross mortgage debt service and total debt service ratios fixed at 39% and 44%, respectively. ● Government-backed insurance no longer available on homes with a purchase price greater than CAD 1 million.
October 2012	● Incentives or rebates from financial institutions no longer accepted as part of the down payment (i.e. "cash back" mortgages). ● Documentation and verification of income and employment status required. ● Banks prohibited from using government-backed insured mortgages as collateral for covered bond issuance.
Budget 2013	● Lenders prohibited from bulk insuring mortgages with LTVs below 80%, unless they are part of a CMHC securitisation programme. ● Lenders prohibited from using insured mortgages in any non-CMHC sponsored securitisation.
May 2014	● Government-backed insurance withdrawn for second home purchases and for self-employed individuals without third-party income validation.

Source: CMHC, Genworth, Walks (2012a), Finance Canada.

brought forward in anticipation of future mortgage rate increases, due to rising long-term bond yields over the summer.

The rule changes return mortgage finance regulations roughly back to where they were in the early 2000s, but with credit standards slightly tighter than those prevailing before the easing period began (Walks, 2012a; TD Economics, 2012). Banks appear to have reduced their risk exposures substantially: the share of CMHC-insured high-LTV mortgages going to borrowers with credit scores below 660 declined from 17% in 2007 to 7% in 2012 (Figure 1.14). The corresponding gain has gone to households with credit scores above 700. Although the changes may have made it more difficult for first-time buyers to enter the market in the short term, it is expected that the reduction in borrowing capacity should ease upward pressure on house prices and eventually lead to improvements in affordability. Furthermore, an annual report released by the Canadian Association of Accredited Mortgage Professionals suggested that first-time buyers still accounted for 57% of home purchases year-to-date in November 2013 (Dunning, 2013). This share is similar to that found over 2010-11, based on an earlier survey by Altus Group (2011), which suggested first-time buyer intentions were below the 2002-09 average.

More changes may need to be considered if vulnerabilities continue to grow via household debt rising faster than incomes. For example, maximum LTV ratios for first-time home buyers (currently at 95%) could be lowered further, as recommended by the IMF (2014a). Alternatively, to reduce household exposure to future interest rate hikes, the authorities could impose an interest rate floor on all income tests to qualify for mortgages, as suggested by Alexander (2012). This minimum could be set to the long-term average mortgage rate, which would not change the actual transaction rate but would help ensure

that borrowers do not face difficulties in making their debt payments when interest rates rise. This would, however, reduce the effectiveness of monetary policy in stimulating the economy in downturns.

In addition to these regulatory changes, in 2011 OSFI introduced a revised Minimum Capital Test (MCT) guideline for private mortgage insurers, using a risk-based formula to set minimum capital levels and defining the types of capital that could be used. That year the government also introduced a new legislative framework to formalise existing mortgage loan insurance arrangements with private insurers and CMHC. This framework included the Protection of Residential Mortgage or Hypothecary Insurance Act applied to private mortgage insurers and regulations that came into force on 1 January 2013 (Box 1.2). These regulations included minimum criteria for the designation of approved/qualified lenders and the types of loans eligible for CMHC and private insurance.

Several measures have been introduced to strengthen the governance and oversight of CMHC. In response to recommendations by the Financial Stability Board`s peer review report for the authorities to enhance disclosure and reporting of mortgage market data and developments (Financial Stability Board, 2011), CMHC began publishing quarterly financial reports in 2011 Q3. The 2012 Budget placed CMHC`s commercial activities under formal OSFI oversight and provided the Minister of Finance legislative and regulatory authority over CMHC`s securitisation programmes and any new commercial programmes. CMHC was also given an additional mandate "to ensure its commercial activities promote and contribute to the stability of the financial system, including the housing market" (Finance Canada, 2012). In practice, however, CMHC had long been targeting capital levels that were twice the MCT, and its risk-management practices had traditionally conformed to OSFI regulations. On 30 May 2014, CMHC discontinued its Second Home and Self-Employed Without 3rd Party Income Validation mortgage insurance products. As a result of changes to CMHC's mandate to contribute to the stability of the housing market, benefitting all Canadians, while effectively managing and reducing taxpayers' exposure to risk, CMHC is undertaking a review of its mortgage loan insurance business. This is the first set of changes resulting from this review. Effective 1 May 2014, CMHC increased its homeowner mortgage loan insurance premiums to reflect its increased capital targets.

In June 2012, OSFI issued a new "Guideline B-20" setting out principles for prudential residential mortgage underwriting practices by FRFIs. These build upon the Financial Stability Board's *Principles for Sound Residential Mortgage Underwriting Practices* published in 2012. The guidelines state that loan decisions should be based primarily on borrowers' demonstrated capacity to make debt payments and rely less on collateral values. To address some of the potential biases in property appraisals discussed earlier, it also advises banks to conduct in-person appraisals and not to depend on any single method for property valuation. These guidelines also recommended third-party appraisers be "independent from the mortgage acquisition, loan processing and loan decision process". In April 2014, OSFI released draft B-21 underwriting guideline for mortgage insurers. These guidelines formalise several rules that are already standard practice, including to exercise due diligence in assessing lenders' underwriting practices. They also include one new requirement for mortgage insurers to begin publicly disclosing data on their loan portfolios, including breakdowns of loan-to-value ratios, amortisation periods and delinquency rates. This is a welcome change that will help fill some gaps in the data needed to properly assess housing-market risks.

The housing finance system appears structurally sound

The relatively strong performance of the housing and banking sectors throughout the global financial crisis indicate that Canada has an effective housing finance system that has generally supported stable access to homeownership. Although insufficient regulatory oversight of mortgage insurance and lending practices during the boom period contributed to pro-cyclical increases in leverage and house prices, the authorities have since taken steps to address systemic weaknesses.

Bank loan losses have remained low, and the majority of residential mortgages are held on originating banks' books rather than securitised, which should generally incentivise banks to employ strong underwriting standards. Furthermore, since January 2011, International Financial Reporting Standards (IFRS) no longer allow off-balance-sheet treatment of mortgage assets sold through CMHC securitisation programmes and require FRFIs to keep securitised mortgages on their balance sheets. The change requires lenders to hold capital against securitised assets.

Retail deposits continue to provide the main source of mortgage financing, which was a source of stability throughout the financial crisis, as discussed above. Although it is not clear why Canadian banks depend more on retail depository funding than others, it may reflect in part the structure of the banking sector. The dominance of the six large banks that are highly profitable and face little external competition may serve to reduce pressures to expand market share and take risks (Ratnovski and Huang, 2009).

The extensive use of mortgage insurance in Canada provides some useful functions in the financial system and the economy more broadly. One is that it provides an outside review of lender practices (Lea, 2010). It can also promote stability by reducing pro-cyclicality: private insurers have incentives to rein in high-risk lending at the top of economic cycles and to ensure credit continues to flow at the bottom (Joyce and Molesky, 2009). Mortgage insurance also helps expand the availability of mortgage funding by guaranteeing loans that can then be sold into securitised pools on secondary markets. It also expands access to homeownership by transferring risks of extreme events away from lenders. This enables them to accept lower down payments without taking on additional risk, thereby allowing a greater share of the population to purchase homes. However, increasing homeownership rates may have costs, in the form of lower labour mobility, for example (see Chapter 2).

The requirement in Canada to insure all high-LTV ratio mortgages helps to promote a sustainable mortgage insurance market by limiting opportunities for adverse selection. In the absence of such a rule, lenders could choose to insure only mortgages of a certain risk group, such as those with weaker or marginal credit scores (Joyce and Molesky, 2009). Such practices could make it difficult for mortgage insurers to diversify risks and to charge affordable premiums. However, this requirement effectively necessitates some government participation in mortgage insurance provision. This is because mortgage insurance is subject to catastrophic risks due to the high correlation of house price declines in a crisis, which can prompt massive defaults. Under these conditions, the availability of private mortgage insurance can decline during a crisis when it is most needed.

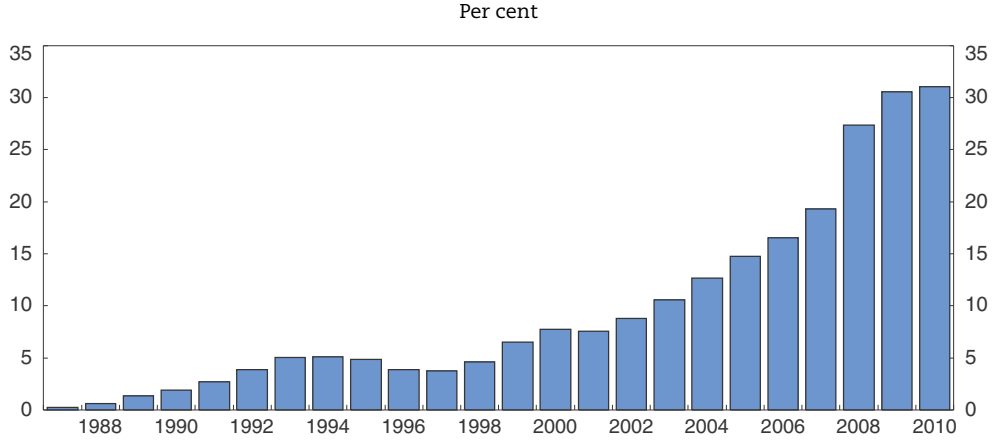
Widespread failure is not likely to occur unless pervasively weak mortgage origination standards have passed contagion from the banking sector to the insurance sector (BIS, 2013). In this regard Canada sits in a relatively favourable position, benefitting from both strong mortgage origination and insurance underwriting standards. Lenders face strong

incentives to uphold underwriting standards as a condition to maintaining their status as a CMHC-approved mortgage lender qualifying for government-backed insurance. However, this equilibrium can become unstable if regulatory deficiencies emerge, due to persistent pressures on mortgage lenders and insurers to lower their underwriting standards to increase profits. Evidence of such destabilising pressures appeared in 2011, when signs emerged that Canadian financial institutions had progressively loosened standards on mortgages and home equity loans, for example by allowing borrowers to bypass income-verification procedures (Mayeda, 2012). The release of OSFI`s B-20 Guidelines the following year addressed these slippages. However, the incentive to exploit regulatory arbitrage opportunities underscores the importance of structuring the system in a way that aligns private- with public-sector interests.

Demand for mortgage securitisation should continue to be monitored

Securitisation of government-insured mortgages has grown substantially since 2007 – with the size of NHA MBS liabilities more than doubling by 2012 (Figure 1.15). A spike in growth between 2008 and 2010 reflected government purchases of NHA MBS via the IMPP programme. NHA MBS now account for more than one-third of all residential mortgages outstanding, up from one-fifth in 2007, and constitute the largest component of the Canadian shadow banking sector (Gravelle et al., 2013). The funding cost advantage provided by the NHA MBS and CMB programmes have supported the growth of a group of small non-traditional lenders, whose funding models rely more on capital markets than retail deposits. This group consists of trust companies, non-depository specialised mortgage lenders and aggregators; the latter are often subsidiaries of foreign financial institutions that engage in purchasing insured mortgages from smaller lenders for securitisation (Bank of Canada, 2013). The top nine of these non-traditional lenders accounted for 15% of total NHA MBS issuance at end-2012, more than double their share in 2007 (Gravelle et al., 2013). In general, they have higher leverage and greater exposure to rollover and interest-rate risk, and would be most vulnerable to an external shock. Furthermore, many of these entities specialise in non-prime lending, which is estimated to

Figure 1.15. **Share of outstanding residential mortgages securitised into NHA MBS**



Note: Data are shown only up to 2010 due to changes in the accounting of NHA MBS on balance sheets after Canada's adoption of the International Financial Reporting Standards in 2011, which make data after 2010 difficult to compare with the past.
Source: Canada Mortgage and Housing Corporation.

StatLink http://dx.doi.org/10.1787/888933079649

have rebounded slightly since the crisis to account for about 7% of total residential mortgage growth (Tal, 2012).

To limit the federal government's exposure to NHA MBS, the 2013 budget prohibited the use of government-insured mortgages in securitisation programmes beyond those run by CMHC. An annual cap was introduced on the amount of NHA MBS that it guarantees, set at CAD 85 billion in 2013. Following unexpected growth in demand for the securities, with banks already issuing CAD 66 billion by July, an additional limit was imposed in August 2013 rationing no more than CAD 350 million per month to each individual lender. The 2014 budget reduced the cap further to CAD 80 billion and introduced a CAD 40 billion cap on CMBs.

Covered bond issuance has also surged since the programme was introduced, rising from CAD 2.8 billion in 2007 to CAD 66 billion by late 2012. Most of these covered bond programmes had used government-backed insured mortgages as collateral, which has been prohibited since 2012.

Because of the government's backing, growth in NHA MBS issuance entails little risk, especially because the majority of financial institutions issuing them are now subject to OSFI's B-20 guidelines for underwriting standards for mortgage insurance. Nevertheless, the growth in mortgage securitisation more generally may contribute to greater instability in the financial system by increasing its complexity and making it more difficult to properly evaluate and price risks. It also strengthens the interconnections between macroeconomic, financial-, household- and public-sector risks (Gravelle et al., 2013).

Furthermore, the growing importance of non-traditional lenders in the mortgage market may also present risks. Among the top nine non-bank issuers of NHA MBS, four are not regulated by OSFI, while another two are foreign bank branches supervised by OSFI but not subject to its capital or liquidity requirements. While non-traditional entities have funded only about 5% of total outstanding mortgages through NHA MBS over the last few years, those not regulated by OSFI accounted for the fastest growing share in 2013 (Bank of Canada, 2013). Some are regulated at the provincial level, but provincial regulators may lack the capacity and resources for rigorous supervision, and few have adopted mortgage underwriting guidelines equivalent to OSFI's B-20 (IMF, 2014a). As recommended by the IMF (2014b), greater cooperation and information sharing between OSFI and its provincial counterparts would be beneficial. Recent research on the US housing crisis suggests that regulatory gaps between banks and non-depository mortgage companies contributed to deteriorating mortgage lending standards (Demyanyk and Loutskina, 2012). This occurred because inconsistent coverage and enforcement of regulations created opportunities for bank holding companies to engage in riskier activities through their mortgage subsidiaries, which were subject to little regulation. Non-bank mortgage lenders originated about half of all mortgages in the United States before 2006 and dominated its subprime market. Although there is no evidence that this has occurred in Canada, where this sector plays a much smaller role, a closer monitoring of this rapidly growing segment is needed.

Adjustments to reduce taxpayer risks and improve competition

Canada's housing finance system is unusual in the extent of its government involvement: while mortgage insurance programmes operate in over 30 countries worldwide, among which about two thirds are government-sponsored (Blood, 2009), only a handful rely extensively on publicly provided mortgage insurance (BIS, 2013). Furthermore, in Canada the government guarantee covers 100% of CMHC-insured mortgages, not just the first 10-30% of the losses as in most other countries.

CMHC's dominant role concentrates a significant amount of risk in public finances. The government guarantee may distort bank lending in favour of residential mortgages over other types of assets, creating inefficiencies in resource allocation. It may also expose taxpayers to more risk than is necessary for a liquid and efficient market. As the US experience demonstrated, federal backing facilitates lending but can encourage actuarially risky behaviour in search of profits and subject taxpayers to excessive risks, although there are considerable differences between CMHC and the GSEs (Box 1.2).

Relatively strong prudential regulation has helped curb excessive risk taking in Canada thus far, suggesting no need for major reforms. However, minor changes such as introducing a deductible for mortgage insurance could help strengthen the financial system further by building in incentives to maintain discipline in loan screening and to control adverse-selection problems (BIS, 2013). For example, reducing insurance coverage to 80% of loan losses would retain non-negligible risk at the lender level and thus better align public and private interests at both the insurer and lender levels. However, the authorities should carefully assess a number of implications for the housing finance system: for example, impacts on borrowers through possible credit rationing and interest-rate differentiation, CMHC securitisation, capital and liquidity requirements for lenders and competition in mortgage lending.

Increasing competition in the mortgage insurance market could also help diversify financial-market risks away from CMHC and reduce potential taxpayer liabilities. Although there are two other private insurers in the market (Genworth and Canada Guaranty), the system does not provide a level playing field, given CMHC's advantage of 100% government backing in the unlikely event of capital exhaustion, compared to only 90% for its private competitors. This means that lenders can hold less capital against mortgages insured by CMHC relative to the private firms, an advantage that has limited their market shares. CMHC takes on additional risks by operating in markets not served by the private sector, such as rural properties and nursing homes, but it is not clear whether the extra costs involved offset the competitive advantage it enjoys over private insurers.

The federal government does have sizeable contingent liabilities associated with both CMHC and private mortgage insurers. Yet CMHC does regular internal stress testing and participates in periodic IMF exercise. It also subjects itself to OSFI supervision (as do the private insurers) to ensure it is acting in a safe and sound manner and had over CAD 14 billion in capital at end-2013. Like the private insurers this is more than double the OSFI requirement. The government has also taken several steps to scale back its exposure to housing markets and encourage a greater private-sector role in mortgage markets. These include setting annual caps on the amount of NHA MBS it would guarantee and introducing a "risk fee", as of January 2014, on CMHC's mortgage insurance activities. The latter requires CMHC to pay the government 3.25% of its premium income and 10 basis points on new portfolio insurance (which covers low-LTV loans) written. This exceeds the 2.25% charge on premiums that private mortgage insurers must pay to benefit from the government guarantee. For 2014, CMHC reduced the amount of portfolio insurance it would issue each year, from CAD 11 billion to CAD 9 billion. Finally, in its 2014 budget the government also announced plans to tie portfolio insurance to the use of CMHC securitisation vehicles and prohibit the use of government-backed insured mortgages as collateral in securitisation vehicles that are not sponsored by CMHC. Further moves should be pursued to gradually increase the private-sector share of the mortgage-insurance industry, including reducing the cap on the total mortgage amount CMHC can insure (currently set at

CAD 600 billion, with CAD 557 billion in force at end-2013). Eventually, if warranted by a corresponding increase in private-sector mortgage insurance activity, as well as potential house price increases, the cap on the total mortgage amount private providers can insure could be raised (currently CAD 300 billion, with CAD 164 billion in force at end-March 2013).

The government should also consider whether in the longer term it would be more efficient and transparent to separate and privatise the insurance arm of CMHC. Doing so would shift the government's role to one of guaranteeing only against catastrophic risks, where public intervention is most justified. This would not affect the government's ability to regulate minimum prudential standards for mortgage insurance and lending. Instead of using CMHC as the main lever, the government could continue to exercise this control through eligibility requirements for all insurers to benefit from the government guarantee. The focus of the publicly owned CMHC would then shift entirely towards its other functions in funding social housing, operating its securitisation programmes and providing high-quality research, analysis and data on Canada's housing markets. Given the systemic importance of CMHC, such a regime shift would need to be conducted gradually and transparently, following proper consultation with all major stakeholders. The government would need to consider measures to ensure continued provision to "underserved" markets, such as multi-unit residential and rural properties. The government would also need to carefully consider its ability to achieve its housing-finance and financial-stability objectives in the context of a potentially smaller market share for CMHC.

Affordability has worsened disproportionately for low-income households

Rising house prices relative to incomes has inevitably led to worsening affordability, especially for those in lower income brackets. Using CMHC's definition of affordability, which entails spending no more than 30% of pre-tax income on shelter costs, the 2011 National Household Survey revealed that one quarter of all households lived in unaffordable housing, up slightly from about 22% in the 1981 census (although the samples are not strictly comparable). CMHC assesses that as of 2010, 13.2% of urban households were in "core housing need", up slightly from 12.8% in 2006, but below the 1991 level of 13.6%. A household is said to be in core housing need if both its dwelling is below acceptable standards and its income is insufficient to obtain acceptable housing. Acceptable housing is defined as shelter that meets three conditions: i) sufficient bedrooms for the household type; ii) does not require major repairs; and iii) can be obtained by spending less than 30% of before-tax household income. The most expensive markets have the highest rates of core housing need: 20% of households in Vancouver and 18% in Toronto. Furthermore, core housing need is significantly worse for Aboriginal households, especially those living on reserve, affecting one third of all Aboriginal households in 2006, up from 28% in 2001.

The proportion facing affordability problems has grown significantly faster for tenant households over this period, from 30% in 1981 to 40% in 2011. Much of this increase occurred during the 1990s when real house prices were flat, which may reflect cutbacks to social housing programmes. The incidence of affordability problems among homeowner households grew much less, from 15% to 18.5%. Renters (who tend to have lower average incomes than owner occupiers) make up about one-quarter of all households living in private dwellings, but account for half of those with affordability challenges.

Social housing accounts for about 5-6% of Canada's dwelling stock and has not expanded significantly since the early 1990s, when the federal government transferred most programme delivery to provinces and territories. Much of the social housing stock is

thus ageing and in need of serious repair and maintenance. About 80% of the existing social housing stock is now administered by the provincial and territorial governments, and programmes generally target households in core housing need. With the introduction of the Affordable Housing Initiative (AHI) in 2001, the federal government shifted away from the delivery model of long-term ongoing subsidies towards up-front capital contributions, with matching funding from the provinces/territories and sometimes third parties (municipal government, private developers or the non-profit sector). This programme ended in 2011, by which time it had provided CAD 1.2 billion in federal funding to create over 52 000 new low-income units. The AHI was replaced by the Investment in Affordable Housing (IAH) framework in which the federal government has committed CAD 716 million in funding over 2011-14, again matched by provinces and territories to provide a wide range of social housing approaches. Provincial and territorial governments have full responsibility for the design and delivery of the programme, which may include new construction, renovations, rent supplements and shelter allowances. In addition to on-going funding, the federal government has made one-time investments in affordable and social housing. In 2006, CAD 1.4 billion was allocated over three years for three affordable-housing trusts. In 2009, as part of the stimulus spending following the economic downturn, the federal government invested more than CAD 2 billion over two years for new construction and the renovation of existing social housing.

The expiry of federal-provincial-territorial operating agreements on much of the public housing stock over the coming decade will challenge the viability of a considerable share of social housing units. These arrangements were established to cover operating expenses and service mortgage debts on public housing units built from the 1950s to the early 1990s. The subsidies were designed to expire once mortgages matured, as it was assumed that rental revenues would be sufficient to finance operations and capital replacement. However, as social housing has become increasingly targeted at those in need and with rents geared to income, revenues have not kept pace with increasing operating costs (Pomeroy, 2011a). One study estimated that potentially one third of existing social housing units could be at risk when the federal subsidies end (Pomeroy, 2006). While provincial and territorial governments appear willing to provide the necessary subsidies to continue operating these properties, many will face shortfalls in funding the necessary capital repairs. Initiatives by the federal government since 2009 will help address some of these needs, namely the completion in 2011 of the delivery of some CAD 2 billion in social housing investments as well as CAD 2 billion in low-cost loans for housing-related municipal infrastructure, and the extension of the IAH from 2014 to 2019. In addition, the federal government is expected to save over CAD 500 million annually by 2020 from expired subsidy arrangements (Pomeroy, 2011a); some of these savings could fund renovations and energy retrofitting of public housing projects that are in need of repair but otherwise operate on a viable basis.

There may be a shortage of affordable rental housing

Tenants in the private market have accounted for a shrinking proportion of all households at 31% in 2011, down from 40% in 1971, as homeownership rates have risen. Correspondingly, the share of rental housing in the total dwelling stock has been on a steady decline since peaking at 42% in 1972, and had contracted to 37% by 2000 when Statistics Canada stopped producing this series. Since then, new rental units have accounted for only 10% of all housing starts, roughly half their share in the early 1990s.

This trend has raised concerns about potential shortages of rental housing. Maintaining a dynamic stock of good-quality and affordable rental housing is important for supporting labour mobility and immigration as well as good social, health and educational outcomes. This decline can be explained by rising home ownership as well as substantial growth in condominium development, which is targeted at owner occupiers but has become a primary source of new rental supply in many cities. Condominium buildings compete for the same multi-residential zoned land as rental apartment buildings.

Private developers have favoured condominium development over purpose-built rental buildings because of the higher returns and lower risk involved. Condominium units can be presold, whereas purpose-built rental buildings must be fully constructed before being rented out. These buildings are longer-term investments that depend on the future appreciation of rent levels, which is subject to provincial rent-control regimes. While rent control was present in all provinces in 1975, most provinces have at least partly deregulated in this area over the past two decades and generally restrict rent increases only for existing tenancies (Pomeroy, 2011b). Currently Ontario, Quebec, British Columbia, Manitoba and Prince Edward Island), which together cover almost 80% of Canada's population, still regulate rent increases. Nevertheless, the apparent emergence of rental supply shortages, as discussed below, is not limited to provinces with rent control.

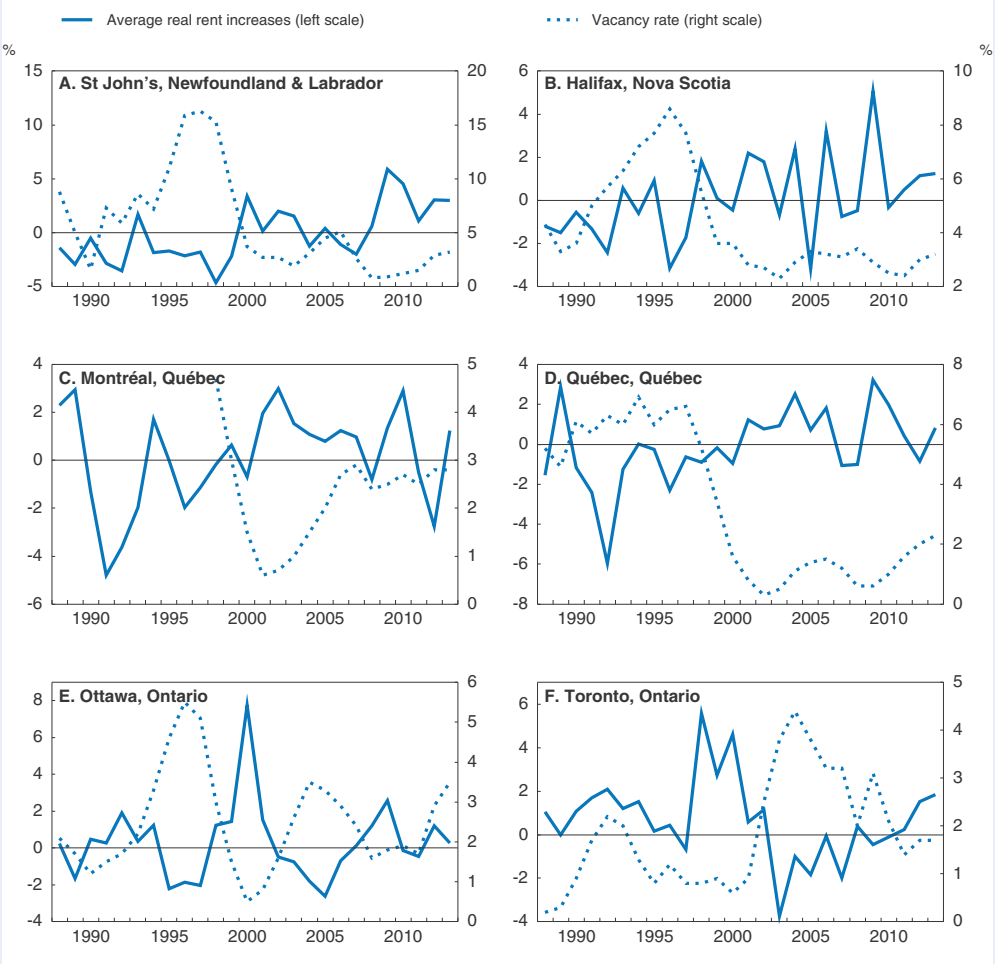
There may be several other reasons why rental building construction has fallen behind condominium development. One factor is the preferential tax treatment of owner-occupied housing, which is not subject to tax on imputed rents or capital gains upon sale, whereas investors in rental property are taxed on rental income and 50% of capital gains at their marginal income tax rate. Increasing expectations of capital gains may have made these tax biases more important over time. Perhaps most importantly, multi-unit rental buildings often face disproportionately high property tax rates relative to ownership housing. Although municipalities in some jurisdictions, such as Ontario, have discretionary authority to equalise property tax rates across the two types of housing, doing so can be politically costly. This contributes to encouraging the conversion of rental buildings into condominiums, which are taxed at a lower rate (Ontario Housing Supply Working Group, 2001). Furthermore, CMHC charges higher mortgage insurance premiums (4.5%) on 85% or more LTV loans for multi-unit rental housing compared to similar loans for owner occupiers (1.75%).

Because of these factors, condominium markets have tended to set the price for multi-residential zoned land sites in major cities, crowding out purpose-built rental production. In some cities the stock of purpose-built rental units has shrunk significantly, as older buildings are demolished and replaced with condominiums. While growth in the condominium sector has probably alleviated any lack of supply in the primary rental market, cities that have not experienced major condominium development have seen vacancy rates decline to very low levels and rents that have increased faster than CPI inflation. Based on rough approximations of the "natural" vacancy rates in 12 major cities (Box 1.3), it appears that supply shortages may have developed in the primary rental markets of Toronto, St. John's, Winnipeg, Saskatoon, Regina, Calgary and Edmonton. Although primary rental markets do not include condominium rental units, adjusting vacancy rates to incorporate this supply does not change the picture very much; in many cases it worsens it, because condominium rental vacancy rates are even lower. However, the condominium data do not include the potential supply from newly completed but unsold units, which appear very high in some cities.

Box 1.3. **Assessing local shortages in the supply of rental housing**

In private rental markets, a supply deficiency can be identified when vacancy rates decline below their equilibrium or "natural rate", which is the rate at which the market balances and the change in real rents is zero. The natural vacancy rate is likely to vary by region and over time depending on factors such as socio-demographic change, government regulations and apartment search costs. For example, rent controls exist in five provinces, which may prevent rents from responding completely to market forces. Nonetheless, in most of Canada's major cities, a negative correlation is visible between average vacancy rates and real annual rent increases (Figure 1.16), although some exceptions are in Québec City, where provincial rent controls are stricter, and Halifax.

Figure 1.16. **Average of real rent increases and vacancy rates by major cities**



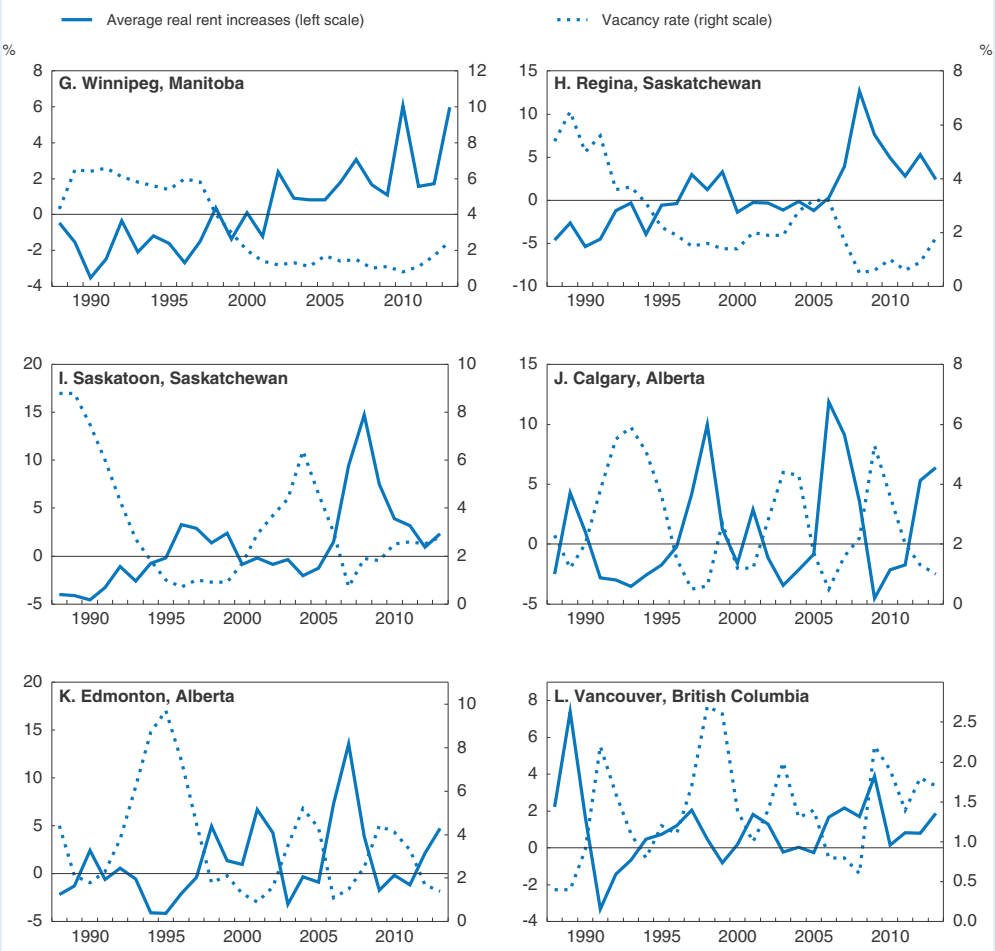
Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079668

Condominiums tend to have higher rent levels than comparable units in purpose-built rental buildings, but their contribution to the supply of high-end rental housing helps attract wealthier tenants out of older rental units, which should relieve pressure on the existing stock and benefit tenants across the income spectrum. Nonetheless, a lack of

Box 1.3. **Assessing local shortages in the supply of rental housing** *(cont.)*

Figure 1.16. **Average of real rent increases and vacancy rates by major cities** *(cont.)*



Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079668

An approximate natural rate can then be roughly identified as the level below which real rent increases are observed. For example, examining historical real rent fluctuations since 1990 suggests the natural vacancy rate may be about 2% in Calgary, Edmonton, Toronto and Ottawa, but closer to 4% in Winnipeg, 5% in St. John's, and 1% in Vancouver. This crude approximation suggests that by 2012 rental housing supply shortages may have developed in 7 of the 12 major cities across the country: Toronto, St. John's, Winnipeg, Saskatoon, Regina, Calgary and Edmonton. It should be noted that the data shown here are for the primary rental market and thus exclude rental supply from condominiums and the secondary market (e.g. basement suites) due to lack of data on these markets before 2006.

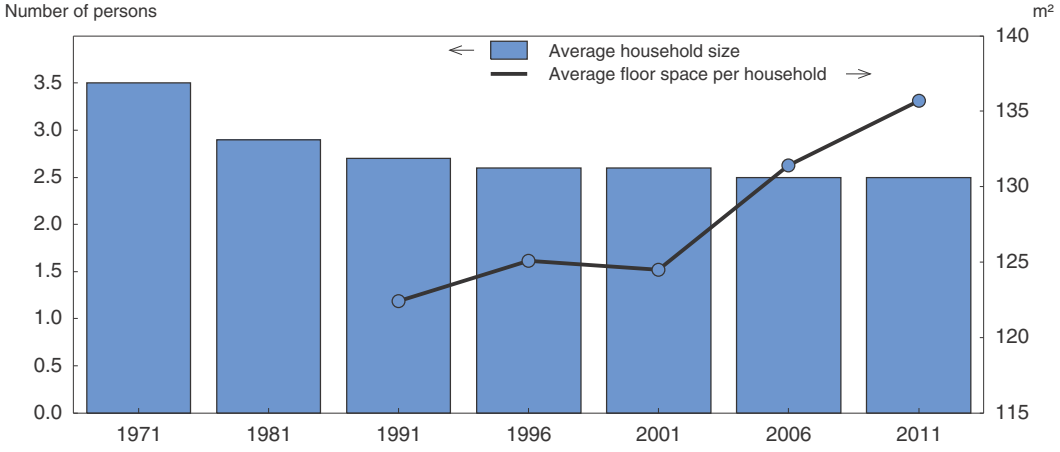
renewal in the low-cost rental stock may be contributing to shortages in units that low-income households can afford. CMHC data shows lower vacancy rates at the cheaper end of the rent range in some cities, including Calgary, Ottawa, Québec, Regina, St. John's, Saskatoon and Winnipeg.

In addition to condominiums, other dwelling types in the secondary market are also an important source of supply of rental housing. This includes all rented dwellings within structures of less than three units, such as rented houses, duplex apartments, and secondary or basement suites, although data on this segment are less reliable and their vacancy rates are unavailable. Nevertheless, data collected by CMHC suggest that the secondary market beyond condominiums constitutes about a third or more of the rental supply in cities such as Calgary, Regina and Saskatoon. However, condominium and other secondary rental dwellings represent a less secure form of housing, since individual owners may remove them from the market at any time.

Urban planning policies have contributed to very high transport emissions and social exclusion

Residential development patterns in many urban areas of Canada have traditionally relied on single-use zoning models and low-density neighbourhoods that are costly to integrate with public transit systems. The vast majority of the country's population growth has occurred in these low-density outer suburbs. Like most other OECD countries the size of built-up urban areas in Canada has been expanding outward at a faster pace than population growth (OECD, 2013b), which is commonly identified as sprawl. Sprawl involves uncontrolled expansion of urban development characterised by low density, segregated land use and insufficient infrastructure provision. Although this pattern of development has probably facilitated more rapid housing supply responses to demand pressures from population growth, it signifies a trend of each person consuming more land. Furthermore, the average size of Canadian homes has been increasing over at least the past two decades, despite the shrinkage in average household size (Figure 1.17).

Figure 1.17. **Larger houses for smaller households**



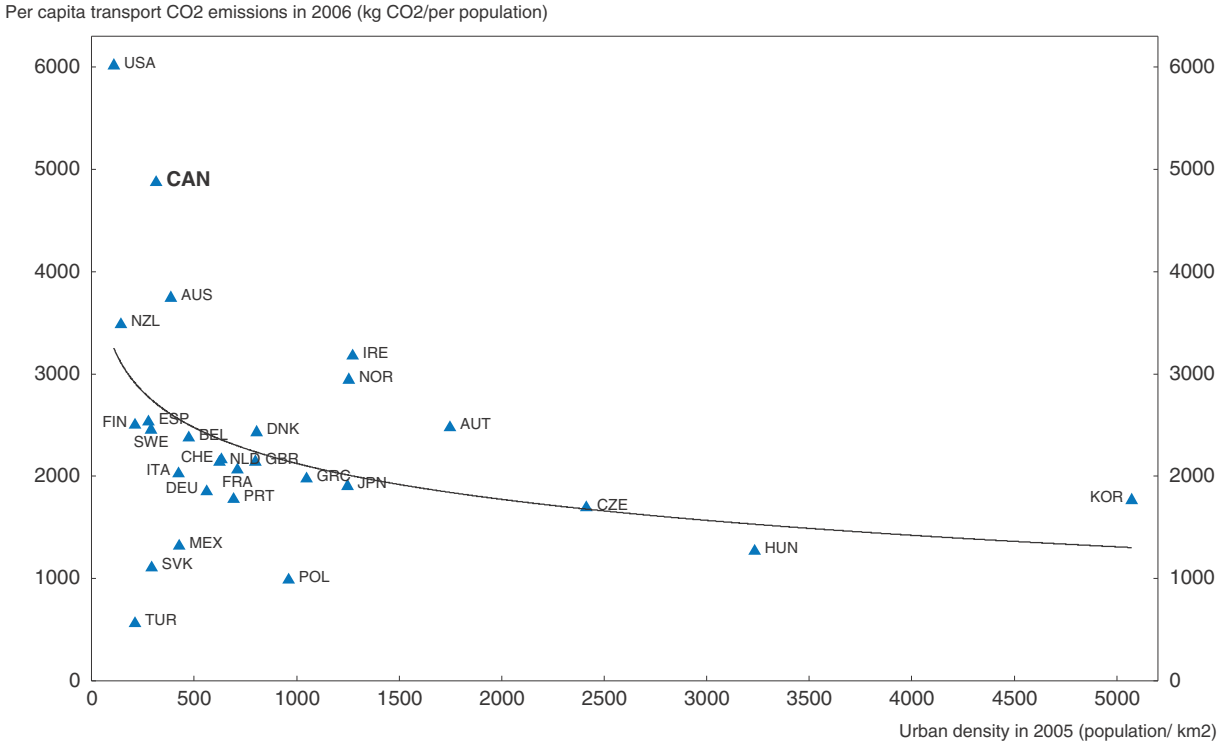
Source: Statistics Canada, Natural Resources Canada.

StatLink http://dx.doi.org/10.1787/888933079687

Building residential neighbourhoods that are separated from sources of employment and whose density is too low for public transit to be economical creates a high dependence on private automobile use. Work by the OECD (2012) shows that low-density urban areas tend to be associated with greater automobile dependency and

Figure 1.18. **CO_2 emissions per capita in transport and urban density, 2005-06**

Predominantly urban areas



Source: OECD (2012), *Compact City Policies: A Comparative Assessment.*

StatLink http://dx.doi.org/10.1787/888933079706

higher CO_2 transport emissions per capita. Indeed, road transport emissions per capita in Canada's urban areas are the second highest in the OECD and are higher than similarly dense urban areas in other OECD countries (Figure 1.18). This may in part be because Canada's automobiles tend to be less fuel efficient on average than those in European countries (IEA, 2012). A study by Gordon (2013) suggests that 93% of the population growth in Canadian census metropolitan areas between 2006 and 2011 took place in suburbs where households depend predominantly on automobiles to commute to work. Transportation accounts for almost two-thirds of the greenhouse gases directly emitted by Canadian households (Blais, 2011). The location of dwellings with respect to amenities, schools, employment opportunities and public transit, as well as the availability of cycling and walking paths, determine the distances households need to travel and the mode of transport they choose. As of 2011, almost three-quarters of commuters in Canada drove a vehicle to work, and this proportion had increased in almost all major cities since 2006, despite higher gasoline prices (Statistics Canada, 2013). Average commuting distances have also increased on average since 1996. Urban sprawl may entail other social costs, such as greater traffic congestion, higher obesity rates, reduced mobility for those unable to drive, the loss of agricultural or forestry land and social segregation.

The majority of households choose where to live based on the cost of the home (Burda, 2012), and houses tend to be priced more affordably at greater distances from the city centre. This may explain the long-term trend observed in Toronto that

households with the lowest incomes have gravitated towards suburbs with the poorest access to transit and services (Hulchanski, 2010). Reduced mobility may narrow the range of jobs that such households can access, contributing to poverty traps (Demographia, 2014). Furthermore, many households fail to account for the higher transportation costs involved with commuting from more distant suburbs. These expenses often outweigh the savings from lower house prices, especially if more than one car is needed, even before considering the time lost in traffic or environmental costs (Miller et al., 2004).

Cheaper houses at the urban fringe reflect in part policies that undercharge low-density land development relative to its true cost. This undercharging occurs in many forms. For one, building low-density housing on urban fringes typically involves higher infrastructure costs per household than developing the same number of units at higher density. This is because the costs of many key infrastructure elements, such as pipes and roads, depend on the distances covered (Thompson, 2013). Developers cover some of the infrastructure costs through "development charges", which are typically passed through to the property price, but many costs are left to the municipality. Furthermore, many municipal governments base development charges on the average cost of providing infrastructure across all neighbourhoods, rather than based on the marginal cost of new developments (Blais, 2010; Slack, 2002). As a result, lower-density housing that is more expensive to service is under-priced, at the expense of higher-density dwellings, which are overcharged.

Second, because most road use is free of charge, taxpayers have effectively subsidised long-distance car commuting and continue to do so through ongoing public expenditures on road maintenance, repair, policing and so on (Thompson, 2013). Canadian governments spend almost four times more on roads each year than on public transit, and the revenues collected from road users through fuel taxes, permit, license and other fees cover only about half of these expenditures (Thompson, 2013). Land space for parking also tends to be heavily subsidised, particularly in suburbs where shopping malls and business parks often provide large parking lots free of charge. Third, house prices in outer suburbs do not incorporate the environmental costs of longer car commuting distances, although properly pricing such externalities is difficult.

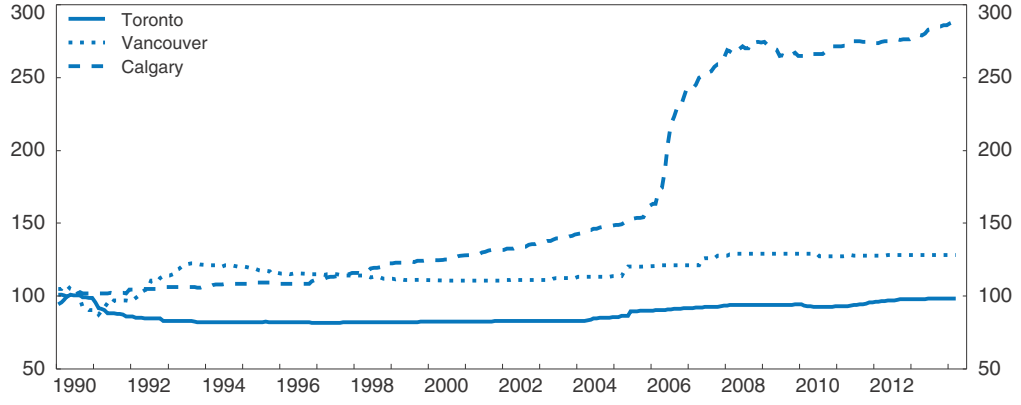
Many provinces and metropolitan areas across Canada have long recognised the economic, social and environmental costs of urban sprawl and have released regional growth plans that aim to manage development in more sustainable, compact forms. Such plans are designed to guide municipal land development, infrastructure and transport planning decisions. For example, the province of Ontario introduced the Growth Plan for the Greater Golden Horseshoe in 2006, which identifies urban growth and employment centres, densification targets and greenbelt areas of protected countryside. The Plan mandates 40% of new development to occur within existing urban boundaries, allowing for a significant amount of greenfield development. In Vancouver, efforts to achieve "compact growth" date back several decades, and land development has long been constrained by natural barriers as well as the Agricultural Land Reserve, a provincial zone of protected farmland. The 2011 Regional Growth Strategy of Metro Vancouver formally defines an urban containment boundary that will remain fixed over time and outlines plans to target growth in designated urban centres and "frequent transit development areas".

Municipal planning approaches to development vary widely across the country, however. For example, a comparative analysis of urban development patterns found that between 1991 and 2001, Vancouver accommodated 80% of residential growth within its existing urbanised area, while this share was only 44% in Toronto and 22% in Calgary, with the remainder occurring at the urban fringe (Burchfield et al., 2010). In general, these patterns appear to correspond with the emphasis each city's planning policies have placed on urban containment and how consistently these policies have been applied over time, as well as topographical differences. In particular, Calgary has few physical or policy limits on outward urban expansion.

Policies that restrict the supply of urban land can help promote more efficient and compact growth but may also push up land prices within the containment area. For example, Grimes and Liang (2007) find that Auckland's Metropolitan Urban Limits have boosted land prices 8 to 13 times above land just outside the boundaries. Indeed, land-use restrictions are often blamed for worsening affordability in major cities such as Vancouver and Toronto (Dunning, 2011; Demographia, 2014). At first glance, however, land-use restrictiveness does not appear to be the main cause of diverging land price trends across Vancouver, Toronto and Calgary since 1990 (Figure 1.19); these are mainly due to the dominant influence of oil prices on land values in Calgary. Nevertheless, there are signs Ontario's Growth Plan for the Greater Golden Horseshoe may have created expectations of future land shortages and led to land hoarding (Burda, 2013; Dunning, 2011). In certain parts of Toronto, land has become scarcer in highly desirable locations as infill opportunities become exhausted (Burda, 2013). Furthermore, densification targets in Vancouver and Toronto have probably encouraged the expansion of high-rise condominiums in downtown cores, while limiting growth in single-detached homes. In Vancouver, the share of single detached dwellings in total housing starts has declined to 20% since late 2010, compared to a long-term average of about 40%. Correspondingly, single-family house prices have increased significantly over this period, whereas condominium prices have hardly risen (Figure 1.5).

Figure 1.19. **Land prices**

New Housing Price Index, Land (1990 = 100)



Source: Statistics Canada.

StatLink http://dx.doi.org/10.1787/888933079725

Policies to promote greener and more socially inclusive residential development

Increasing the efficiency of land use through more compact development may help improve environmental and social outcomes. This should involve improving price signals to ensure that house prices better reflect the public costs incurred to service them. As discussed earlier, low-density development may contribute to higher transport emissions per capita, but these environmental externalities may be difficult to price accurately. Nevertheless, it would be worthwhile to reform development-charge regimes to ensure that developers and residents share the true cost of infrastructure provision. While this would ideally involve charging the marginal cost of each individual project, setting area-specific development charges would be easier to implement and more transparent (Thompson, 2013). This would lower the charges to developers building in established neighbourhoods with capacity for densification or near existing public transit routes. It would also involve greater use of congestion and road charging as well as higher parking fees. Such price signals would need to be combined with more integrated urban planning systems to ensure mixed land use and the sufficient provision of public transit linkages, open space, bicycle paths and sidewalks.

However, the environmental and social benefits to urban containment should be weighed against the potential costs of densification such as overcrowding, higher house prices, traffic congestion and smaller living spaces. As urban cores reach their capacity for densification, planning efforts should be directed towards improving the "employment densities" of predominantly residential suburbs (Blais, 2010) – as well as their walkability and transit connectivity – to reduce the need for long car commutes into downtown cores. For example, Metropolitan Vancouver has been moving towards such a "polycentric" system, with multiple urban centres to relieve land pressures on the downtown core.

Efforts to increase densification often meet barriers in the form of opposition from existing homeowners. In the cities of Toronto and Vancouver (as well as many US cities), municipal authorities often use "density bonusing" (called "Section 37 agreements" in Toronto and "Community Amenity Contributions" in Vancouver) to facilitate community acceptance of densification. These instruments allow developers to build above a zone's density or height restrictions in exchange for cash contributions towards various social amenities, which could include a new community centre or childcare facility, or transit improvements. These practices can help mitigate some of the negative perceptions existing residents may associate with densification by providing visible improvements in their community infrastructure. However, these policies would benefit from a more systematic and transparent approach in how they are used, as they have been criticised for being negotiated in an *ad hoc* manner and with questionable motives (Moore, 2013).

Although better price signals could correct some of the under-pricing of low-density suburban homes, housing will inevitably remain more expensive in mixed-use, walkable neighbourhoods with greater transit connectivity. To ensure that low-income households are not marginalised to suburbs with poor transit access, planning systems may need to incorporate policies to support social mix. In Canadian cities such policies commonly include controls to protect the low-cost dwelling stock, inclusionary zoning or density bonusing. In the latter case developers are permitted to exceed height restrictions in exchange for allocating a certain proportion of units to low-cost housing. Inclusionary zoning is a planning tool that requires a share of new housing to be affordable to low-income

households. However, evidence suggests that none of these tools have had much success in adding significantly to the low-cost housing stock (Conference Board of Canada, 2010).

In cities such as Toronto and Vancouver municipal governments rezoned all single-family neighbourhoods in the 2000s to allow homeowners to rent out secondary/basement suites within their properties or "laneway" houses. Laneway houses are smaller detached dwellings usually located in the backyard of a single-family lot with access to a back lane. While secondary suites existed before, many were unauthorised and illegal. Encouraging such forms of housing has been a major part of the City of Vancouver's housing affordability strategy, since their rents tend to be lower. It has increased the supply of lower-cost rental housing through a softer, less visible form of densification, while helping homeowners pay down their own mortgages and increasing the social diversity of single-family neighbourhoods. Furthermore, because many secondary suites allow access to a yard, they may be more appealing to families than conventional rental apartments. These benefits suggest it would be worthwhile for other cities facing shortages of affordable rental housing to legalise secondary suites and laneway houses in all single-family zones, although homeowner resistance has been a major obstacle to change in many municipalities across Canada. Furthermore, many have remained unauthorised and may therefore not comply with building and safety codes. Despite legalisation in many neighbourhoods, many homeowners may prefer to keep their secondary suites undeclared to avoid taxation associated with owning a rental property, including on their rental income as well as of any capital gains on the future sale of their home.

Another programme introduced by the City of Vancouver in May 2012, the Rental 100 Program, has already proven effective in stimulating a significant amount of purpose-built rental housing construction. It provides a package of incentives to developers constructing 100% rental buildings, including waivers of development charges, reduced parking requirements and speedier permit processes. However, to prevent developers from targeting the luxury-end market, the municipal government began imposing caps on the initial rents that could be charged for the units at the end of 2013; it remains to be seen how this change will affect take-up.

Policies to increase incentives for private-sector development may offer an effective and efficient way to increase the supply of affordable housing. For example, the US government provides a Low-Income Housing Tax Credit (LIHTC) to developers of affordable housing projects, which funds most US low-income housing and is often regarded as highly effective and efficient. The LIHTC provides tax credits to housing developers who then sell them on to investors in exchange for equity finance. Investors can then claim them on their tax returns each year for 10 years. Properties must be rented to households with incomes below 60% of the average income in the region, with rents set at no higher than 30% of income for a period of 30 years. The government sets annual limits on the amount spent on LIHTC, and funds are competitively allocated. It would be worth evaluating the costs and benefits of introducing such a programme in Canada. If public resources are constrained, the federal government could consider funding the programme through savings from eliminating the First-Time Home Buyers Tax Credit and Home Buyers' Plan. As mentioned earlier, research suggests that the latter programme tends to be regressive in practice (Steele, 2007).

Policy recommendations to address Canada's housing market challenges

Policies to strengthen stability in the housing finance system and reduce taxpayer exposure

- If household debt-to-income ratios continue rising, consider further regulatory measures, such as imposing a minimum interest rate floor on income tests to qualify for mortgages, to ensure that new homebuyers are able to make payments in a higher interest-rate environment.
- 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.
- Consider changes to the housing-finance framework to cover only partial loan losses, e.g. 80-90%, to retain some risk at the lender level and better align private and social interests.
- Continue to increase the private-sector share of the market by gradually reducing the cap on the Canada Mortgage and Housing Corporation's insured mortgages. In the long run, consider privatising the insurance arm of CMHC. This would allow the government to scale back its guarantee of CMHC to match the level and conditions applied to private mortgage insurers, and apply the same legislative framework of private mortgage insurers to CMHC.

Policies to improve the social and environmental impact of residential development

- As long-term federal subsidy agreements on the public housing units expire, devote some of the savings towards a renovation and energy retrofitting programme for viable social housing projects.
- Consider increasing incentives for private-sector development of affordable housing.

At the regional/municipal government level

- 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
- Remove property tax rate differentials that disadvantage multi-residential rental properties relative to owner-occupied housing.
- Continue efforts to legalise and encourage secondary suites and laneway housing in single-family residential zones.
- 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.

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Chapter 2

Overcoming skills shortages

Skills shortages have developed in certain fields and regions in recent years. Earnings premiums for people in some professions, notably health, engineering and skilled trades have increased. And vacancy rates have risen for skilled trades, with the increase being particularly large in Alberta and Saskatchewan. While reforms have been implemented to strengthen adjustment so as to overcome these shortages, there is still room to go further by improving labour market information, increasing responsiveness of the education and training system to labour market demand, making the immigration system more reactive to current labour market conditions and reducing regulatory barriers to inter-provincial labour mobility.

Skills shortages occur when employers are unable to recruit staff with the required skills at the going rate of pay (Quintini, 2011); they are macroeconomic, not to be confused with *skills mismatches*, which arise when individuals are over- or under-skilled for their jobs (Box 2.1). Such shortages set in motion adjustment mechanisms to eliminate them, notably an increase in the price of skills in short supply. This encourages employers to economise on the use of these skills and gives individuals a stronger incentive to acquire them. However, adjustment may be impeded by a variety of factors. The slower and/or less complete is adjustment, the greater will be the losses in potential production from not shifting resources to the activities affected.

Generalised shortages of people with post-secondary-education (PSE) credentials have not developed in recent years. Earnings premiums for people with PSE over those with high-school diplomas have been broadly stable since the late 1990s. This suggests that the large increase in the proportion of the labour force with PSE credentials was commensurate with the increase in the demand for such workers relative to workers with a high-school credential. Nevertheless, pressures might still exist in specific fields of study. In fact, average university-degree premiums have increased substantially for Canadian-born workers in management, health care and engineering. There has also been a regional dimension to skills shortages, with earnings premiums for people with a post-secondary certificate/diploma increasing more in Ontario and the Atlantic provinces than elsewhere. Vacancy rate data suggest that skills shortages have increased most in the skilled trades since the recession, with particularly large increases in Alberta and Saskatchewan.

The process of adjustment to overcome skills shortages has been impeded by gaps in labour-market information, barriers to increasing the supply of skills in demand through education and training, limited responsiveness of the immigration system to labour-market conditions and regulatory barriers to inter-provincial labour mobility. While there have been significant reforms in all of these areas to strengthen adjustment, there is still room to go further. This could be done by providing students with better information on expected returns to PSE, reducing numeracy and literacy barriers to PSE attainment, making the education and training system more sensitive to labour-market demand, further increasing the responsiveness of the immigration system to labour-market demand (notably by implementing the Express Entry system) and removing barriers to inter-provincial labour mobility in the regulated trades and professions and for the serially unemployed (seasonal workers).

This chapter, which complements the chapter on improving tertiary education in the 2012 *Survey*, begins by assessing the extent and nature of skills shortages in Canada. After considering the responsiveness of labour supply to such shortages, the chapter goes on to look at how adjustment could be strengthened through further measures to enhance labour-market information. In the next section, additional measures to increase the supply of skills in demand through education and training are discussed, while in the following section, further steps to make the immigration system more responsive to labour market

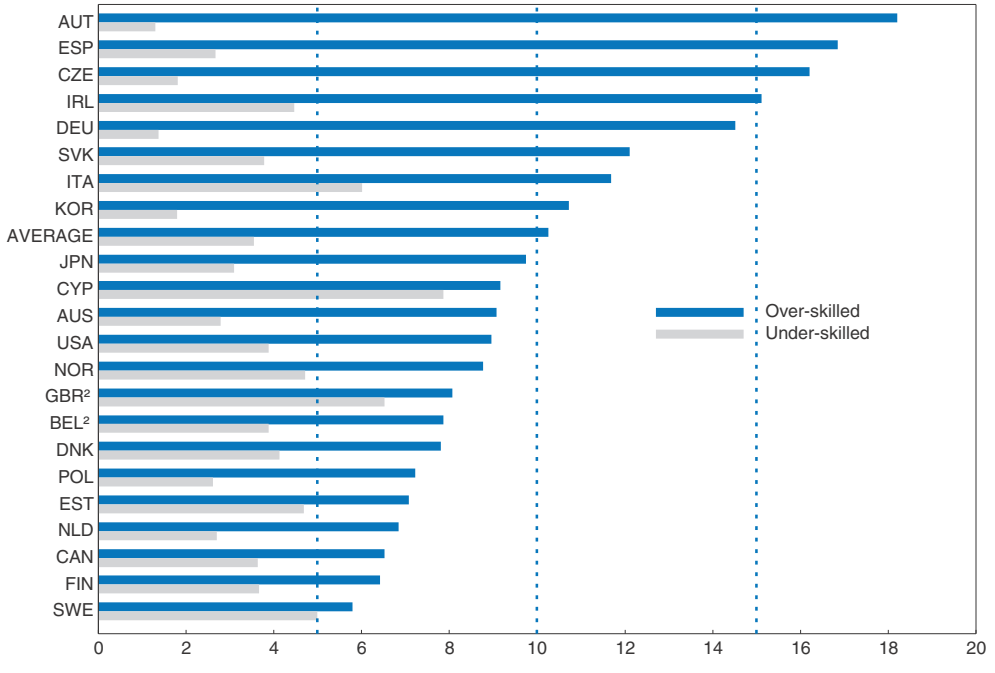
Box 2.1. **Skills mismatch is low in Canada**

Skills mismatch occurs when an individual's skills are not well aligned with those required for his or her job. If skills are less than required for the job, there is a skills deficit (skills gap) (Quintini, 2011). In the opposite case, where an individual's skills are greater than required for the job, there is skills underutilisation (over skilling). Skills mismatch means that a country is not making the best use of its previous investments in human capital. Mismatch reduces job satisfaction and wages, increases employee turnover and unemployment, and reduces GDP growth through the waste of human capital and/or a reduction in productivity (OECD, 2013).

The OECD (2013) has developed a measure of skills mismatch that shows that a relatively small proportion of Canadians are over-skilled in literacy for their current job, while the proportion who are under-skilled is near the average of countries included in the study (Figure 2.1). This measure has been developed using results from the OECD Survey of Adult Skills (PIAAC), notably responses to the questions whether individuals feel that they "have the skills to cope with more demanding duties than those they are required to perform in their current job" and whether they feel "they need additional training in order to cope well with their present duties". Workers were classified as well matched in a domain if their

Figure 2.1. **Skills mismatch in literacy in Canada is low by international comparison**

Percentage of over- and under-skilled workers[1]



1. Over-skilled workers are those whose proficiency score is higher than that corresponding to the 95th percentile of self-reported well matched workers (i.e. workers who neither feel they have the skills to perform a more demanding job nor feel the need for further training in order to be able to perform their current jobs satisfactorily) in their country and occupation. Under-skilled workers are those whose proficiency score is lower than that corresponding to the 5th percentile of self-reported well matched workers in their country and occupation.
2. Flanders only for Belgium and England, Northern Ireland only for the United Kingdom.

Source: OECD (2013), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD publishing.

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Box 2.1. **Skills mismatch is low in Canada** *(cont.)*

proficiency score in that domain was between the minimum and maximum score observed among workers who answered "no" to both questions in the same occupation and country. Workers were deemed to be over-skilled in a domain if their skills score was higher than the maximum score of self-reported well matched workers and under-skilled in a domain if their score was lower than the minimum score of self-reported well matched workers. This measure of skills mismatch is considered to be an improvement over existing indicators, as it is more robust to reporting bias and does not impose the strong assumptions needed when directly comparing skills proficiency and skills use (OECD, 2013).

A related measure is qualifications mismatch. When people have education credentials that exceed (are less than) those required for their job, they are considered to be overqualified (underqualified). A recent study (Uppal and LaRochelle-Côté, 2014) shows that there has been little change in the proportion of university graduates in Canada who are overqualified since 1991, despite a large increase in supply. The proportion of university graduates aged 25-34 who work in occupations requiring only a high-school education was 18% in 2011, virtually the same as in 1991. However, over-qualification rates were much higher among university-educated immigrants who did not have a degree from Canada or the United States (43% for women and 35% for men, compared with rates of 15-20% for men and women born in Canada and among immigrants with a university degree from Canada or the United States). Over-qualification rates were also high (about a third) for people with a university degree in the humanities. In contrast, fewer than 15% of men and women with a university degree in education, in health and related fields, and in architecture, engineering and related fields were overqualified.

demand are considered. The chapter finishes by looking at how skills shortages could be reduced by going further in lowering inter-provincial barriers to labour mobility.

Skills shortages have increased

Skills shortages reduce potential incomes while they last

When skills shortages occur, demand for the skills in question exceeds supply (supply is the short side of the market), resulting in high vacancy rates. In a market economy this situation puts upward pressure on wage rates and other conditions of employment for jobs that require these skills. This provides an incentive for workers or potential workers to acquire these skills and for former workers who already have them to return to this type of work or, if the shortage is regional, move to the location of the shortage. The rise in supply of workers with the skills in question eventually eliminates the shortage, although the new equilibrium is likely to entail a higher wage premium for jobs requiring these skills.

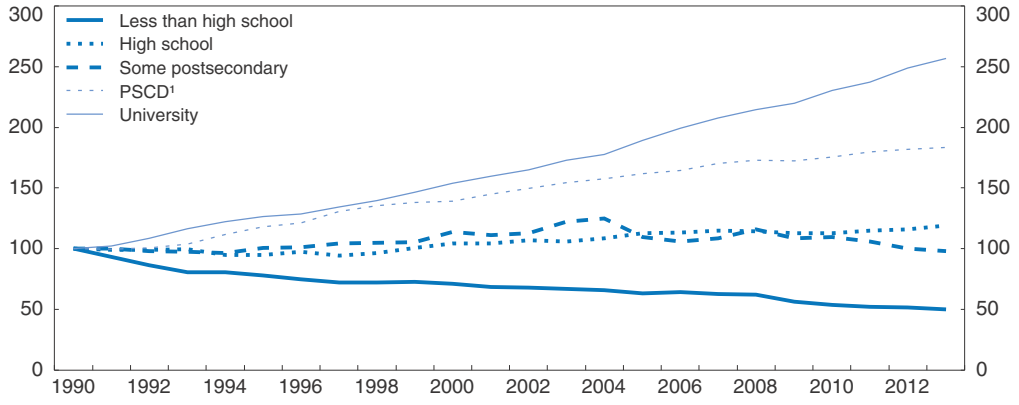
The speed and/or extent of adjustment to eliminate skills shortages may be impeded for a variety of reasons. On the demand side these include the quasi-fixed costs of hiring, training and firing new employees (Gomez and Gunderson, 2006). On the supply side they include imperfections in the market for education and training, legislative and regulatory barriers to regional and occupational mobility and disincentives to mobility from the public social safety net. Gomez and Gunderson (2006) identify a number of market imperfections that may inhibit supply and demand matching, including information imperfections and asymmetries, lags in institutional responses and a lack of incentives for educational institutions to respond to students' field-of-study preferences.

Slow or incomplete adjustment means that opportunities for some workers to earn more by acquiring skills more highly valued in the labour market than those they currently possess are lost. Moreover, if potential workers in the areas experiencing shortages are currently under-employed, earnings and national income also will be lower than they would be if adjustment were complete with these workers more fully employed. National income could be further reduced by the failure to realise natural-resource rents. As discussed below, the boom in the oil and gas sector has substantially increased shortages in the skilled trades in Alberta and Saskatchewan. The Alberta government reports that a number of resource-based investment projects have shifted elsewhere because employers could not find the skilled workers needed.

Labour demand and supply have become increasingly skills intensive. Employment growth over the past three decades has been highest for those with PSE attainment, especially a university degree, and slowest for those who have not graduated from high school (Figure 2.2).

Figure 2.2. **Employment growth has been fastest for persons with post-secondary attainment**

Index, 1990 = 100



1. Post-secondary certificate or diploma.
Source: Statistics Canada.

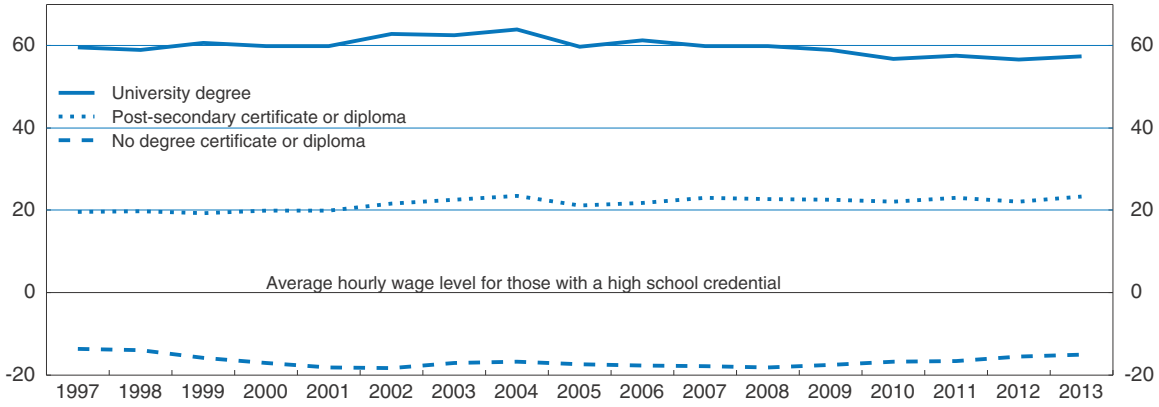
StatLink http://dx.doi.org/10.1787/888933079763

One indicator of whether or not skills upgrading has been accompanied by skills shortages is the development of earnings premiums for people with PSE over those with only high-school credentials. An increase (decrease) in this premium indicates that the demand for PSE skills relative to high-school skills has increased faster (slower) than supply, pointing to the potential presence (absence) of a skills shortage. PSE earnings premiums have been broadly stable since 1997 (the earliest year for which comparable data are available), reflecting a small increase in the premium for a post-secondary certificate/diploma and a small decrease for a university degree, suggesting that a generalised shortage of PSE skills has not developed (Figure 2.3).

However, there are indications that skills shortages have developed in certain fields and regions in recent years. Ontario and the Atlantic provinces have had the largest rises in earnings premiums at the post-secondary certificate/diploma level and the smallest declines at the university degree level (Table 2.1). In the Prairie provinces, the increase in the earnings premium for a post-secondary certificate/diploma was almost the lowest in Canada and the

Figure 2.3. **Post-secondary education earnings premiums have been stable**

Relative to earnings for a high school graduate



Source: OECD calculations using *Labour Force Survey* data from Statistics Canada.

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Table 2.1. **Regional changes in real earnings and in earnings premiums relative to high-school graduate earnings**

1997-2013, per cent

	Increase in real earnings	Increase in earnings relative to earnings for a high-school graduate
Post-secondary certificate/diploma (PSCD)		
Atlantic Provinces		2.0
Québec	6.2	1.8
Ontario	5.7	3.3
Prairie Provinces	24.4	0.5
British Columbia	10.2	0.4
Canada	10.4	1.2
University degree (UD)		
Atlantic Provinces	14.0	-0.6
Québec	2.9	-1.4
Ontario	2.0	-0.2
Prairie Provinces	15.0	-7.1
British Columbia	5.5	-3.8
Canada	5.6	-3.2
High-school diploma (HSD)		
Atlantic Provinces	14.8	-
Québec	4.4	-
Ontario	2.3	-
Prairie Provinces	23.8	-
British Columbia	9.7	-
Canada	9.0	-

Source: OECD calculations using *Labour Force Survey* data from Statistics Canada.

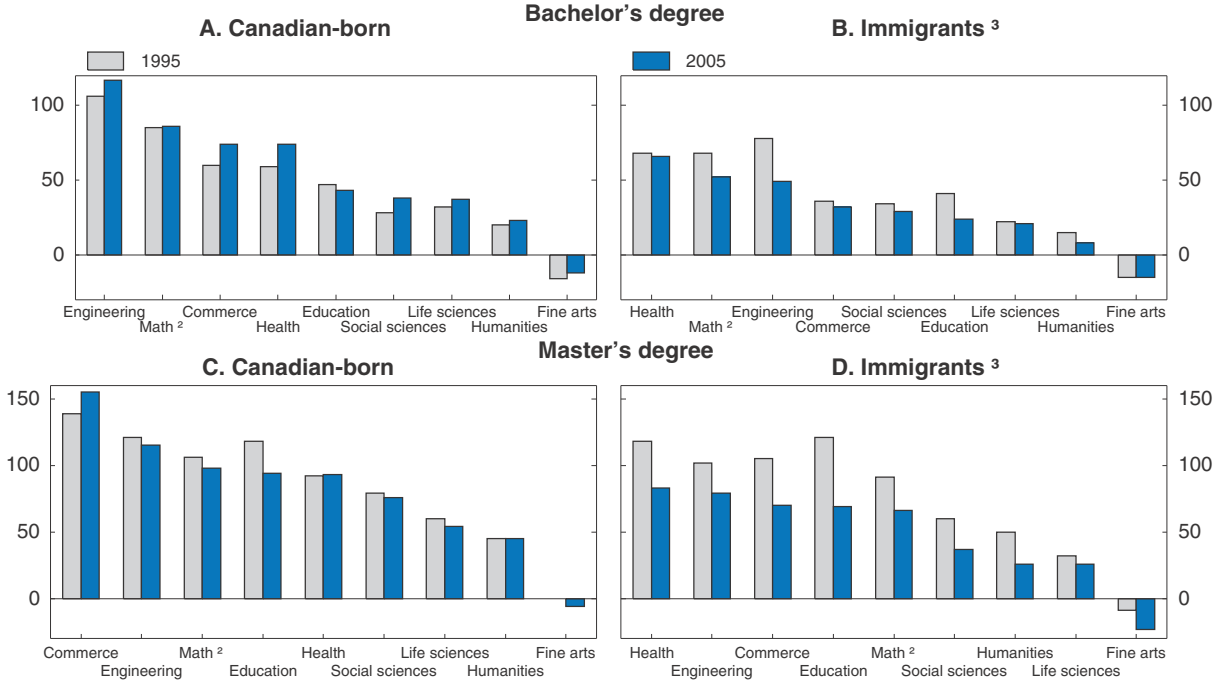
decrease for a university degree was the greatest, despite higher increases in real earnings for people with PSE credentials than elsewhere. This result reflects the fact that real earnings for people with a high-school credential rose far more than in the rest of the country. The large increases in real earnings at all levels of education attainment combined with small increases in earnings premiums suggests that the Prairie provinces have been more subject to across-the-board labour shortages than to skills shortages. And for interprovincial mobility incentives, it is real earnings differences that matter, not local skills premiums.

In most fields university degree earnings premiums have increased for the native born but have fallen for immigrants

Based on census data, university-degree premiums increased on average between 1995 and 2005 for Canadian-born workers in engineering, commerce and health care and are higher in these fields than in most others (Figure 2.4). By contrast, the corresponding earnings premiums for immigrants were stable or declined and remained much lower than for the native born, indicating that their qualifications and foreign work experience do not have the same value in the labour market. With the change in immigrant source countries since the early 1990s, foreign qualifications increasingly are not equivalent to Canadian qualifications, and immigrants often do not have adequate skills in English or French to perform well in highly skilled roles. However, this earnings gap diminishes markedly over time since arrival as immigrants improve their official-language skills, gain Canadian work experience and become qualified to local standards (Morrisette and Sultan, 2013).

Figure 2.4. **Earnings premiums for university degrees by field of study**[1]

Population aged 25-64 in the labour force, percentage gap over average earnings for high school graduates



1. Earnings are not adjusted for the number of hours worked.
2. Including computer science and physics.
3. Immigrants include both those who earned their degrees abroad and those who earned them in Canada.

Source: Internal Employment and Social Development Canada (ESDC) analysis using census data.

An alternative approach to assessing the attractiveness of investing in university education is to calculate internal rates of return. This gives a more accurate picture of the incentives faced by people considering such investments than do earnings premium data, as costs (including lost earnings while studying) and the time value of money are taken into account. Two recent studies find that internal rates of return to completing a university degree compared with remaining at the level education attainment immediately

below (e.g. a master's degree compared with a bachelor's degree) are highest for commerce, medical and, at bachelor's level, engineering degrees, confirming the pattern found for earnings premiums (Box 2.2).

Box 2.2. **An examination of incremental rates of return by field of study and degree level**

Stark (2007) estimated that rates of return (based on 1995 data) for a bachelor's degree (i.e. the extra earnings net of costs of completing a bachelor's degree instead of stopping education at the high-school diploma level) were considerably higher on average for both men and women than returns on financial investments, making a bachelor's degree a profitable investment (Table 2.2). There was, however, a wide distribution of returns. Returns were generally higher for women, owing to their assumed lower foregone earnings while studying. The highest returns were for medical degrees. For other bachelor's degrees, returns were higher for science than non-science degrees, although this did not hold for all major fields within these groups. For both genders the highest returns on non-medical bachelor's degrees were in the commerce, maths and physics, health and engineering fields. The lowest returns were on degrees in the humanities and agricultural-biological fields for men and fine arts for women.

Table 2.2. **Rates of return by field of study and degree level, 1995**

Per cent

	Bachelor's		Master's		Ph.D.	
	Men	Women	Men	Women	Men	Women
Total non-medical degrees[1]	9.9	12.1	4.1	8.6	1.3	4.3
Non-science	9.1	11.8	7.0	9.6	0.0	3.4
Education	5.4	11.3	9.4	11.4	4.0	-0.2
Fine and applied arts	*	4.4	3.5	1.3	7.9	7.7
Humanities and related	3.6	10.0	-6.0	3.8	7.4	5.1
Social science and related	10.0	11.7	*	6.2	3.6	7.8
Commerce, management business and administration	13.3	15.9	19.1	23.1	*	2.1
Science	11.5	13.5	1.2	5.2	1.7	6.0
Agricultural and biological	4.9	9.1	0.7	2.9	6.8	8.9
Engineering	13.0	13.9	-1.9	-0.7	0.9	*
Health professions	10.4	15.5	16.2	8.2	*	7.1
Math and physical science	11.9	14.6	-1.6	2.5	2.9	*
Total medical degrees	15.1	15.9				

Note: * Indicates that the programme did not converge to a solution.

1. Non-medical degrees exclude degrees in medicine, dentistry, veterinary studies and optometry but include degrees in other health professions such as nursing and physiotherapy.

Source: Stark (2007), "Which Fields Pay, Which Fields Don't", *Department of Finance Working Paper,* 2007-03.

The extra return to a master's degree (compared to stopping education at the bachelor's level) in aggregate was lower than for a bachelor's degree. Again, in aggregate and across most fields of study, returns were higher for women than for men. In contrast to the case for a bachelor's degree, the extra return to a master's degree in a non-science field exceeded the return for a science field by a substantial margin. There was even greater heterogeneity at this level than at the bachelor's level. The highest incremental returns were in the commerce field, as at the bachelor's level, and in education. Among science fields, only a degree in health yielded relatively high incremental returns. Incremental returns were negative on engineering degrees and on mathematics and physical science degrees for men.

Box 2.2. **An examination of incremental rates of return by field of study and degree level** *(cont.)*

At the aggregate level, the extra return to a Ph.D. degree was less than on a master's degree for both genders, although again there was considerable variation cross fields. As for bachelor's degrees, a Ph.D. in the sciences offered a higher incremental rate of return than in non-science fields. The highest incremental returns were in fine arts and agricultural and biological fields, all fields that offered low incremental returns at the master's level. This suggests that the motivation for obtaining a master's degree in these fields was to obtain an entry ticket to the Ph.D. programme.

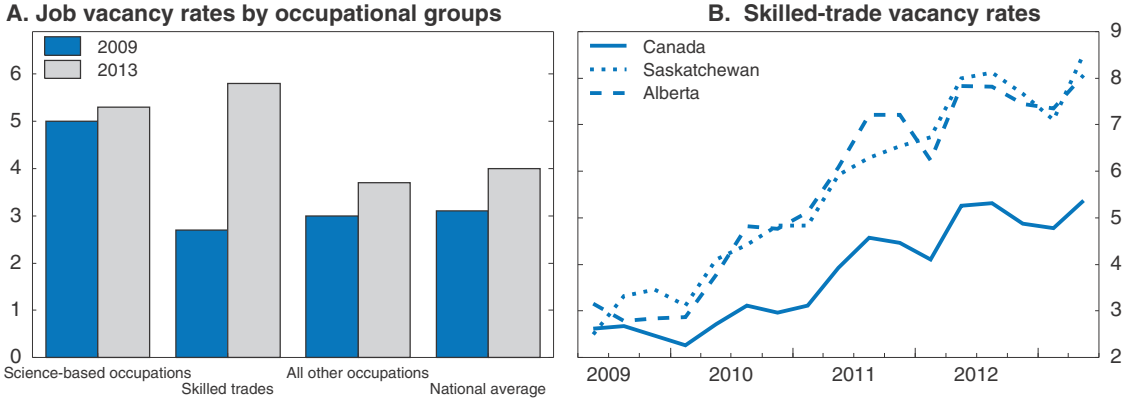
Moussaly-Sergieh (2005) found broadly similar patterns at the aggregate level using 2000 data – incremental returns were lower on higher-level degrees and for men than women. At the bachelor's level, the highest returns were on medical degrees. Engineering and commerce had high rates of return, in contrast to the humanities and biological sciences.

Skilled-trade-vacancy rates have increased, especially in Western Canada

Job-vacancy data suggest that demand for skilled tradespersons has grown faster than supply during the current business cycle. Indeed, vacancy rates in the skilled trades now exceed those in science-based occupations (e.g. engineers) (Figure 2.5). Skilled-trade vacancy rates have increased more and are higher in Alberta and Saskatchewan than in the rest of the country.

Figure 2.5. **Vacancy rates have increased most in the skilled trades in Alberta and Saskatchewan**

Per cent



Note: The job vacancy rate is the number of online job postings divided by labour demand, i.e. online postings plus employment.

Source: Finance Canada (2014), *Jobs Report: The State of the Canadian Labour Market*; and D. Burleton et al. (2013), "Jobs in Canada, Where, What and For Whom", *TD Economics Special Report*, 22 October.

StatLink http://dx.doi.org/10.1787/888933079231

A big part of the skills shortages in Alberta is in the construction sector for the energy industry. With resource projects getting underway in other parts of the country, such as LNG in British Columbia and oil and gas in the Atlantic Provinces, and further expansion of oil-sands projects to come, these shortages could become acute if promoters do not agree to phase development so that their demands for construction workers do not peak simultaneously.

Official projections point to growing shortages in mainly skilled occupations and surpluses elsewhere

The labour-market outlook by occupation over 2011-20 prepared by the Employment and Social Development Canada (ESDC) using the Canadian Occupation Projection System (COPS) indicates that, for about 60% of occupations, growth in demand (job openings) and supply (job seekers) are expected to be broadly balanced. Occupations for which excess demand is projected mostly require PSE, predominantly at the post-secondary certificate/diploma level (Table 2.3). While there are a number of occupations for which excess supply is projected that require PSE, more than half of the occupations for which excess supply is

Table 2.3. **Occupational outlook summary and their educational requirements**

		Difference between expected job openings and job seekers as annual percentage of 2010 non-student employment	Recent labour-market status	Education level[1]
NOC	**Top 15 occupations with a shortage outlook and the largest projected excess demand**			
N822	Supervisors, Mining, Oil and Gas	3.1	Shortage	B
N413	College and Other Vocational Instructors	1.8	Balance	A
N122	Administrative and Regulatory Occupations	1.7	Balance	B
N623	Insurance and Real Estate Sales Occupations	1.6	Balance	B
N825	Contractors, operators and supervisors in agriculture, horticulture and aquaculture	1.5	Balance	B
N031	Managers in health, education, social and community services	1.4	Shortage	Management
N315	Nurse Supervisors and Registered Nurses	1.2	Shortage	A
N112	Human Resources and Business Service Professionals	1.2	Shortage	A
N311	Physicians, Dentists and Veterinarians	1.1	Shortage	A
N411	Judges, Lawyers and Quebec Notaries	0.5	Shortage	A
N341	Assisting Occupations in Health Services	0.2	Shortage	C
N215	Architects , Urban Planners and Land Surveyors	0.2	Shortage	A
N626	Police Officers and Firefighters	0.1	Shortage	B
N312	Optometrists/Chiropractors/Other Health Professions	0.0	Shortage	A
N321	Medical Technologists/Technicians	0.0	Shortage	B
NOC	**Top 15 occupations with a surplus outlook and the largest projected excess supply**			
N945	Machine Operators and related in fabric, fur and Leather products manufacturing	-4.5	Surplus	C
N051	Managers in art, culture, recreation and sport	-3.3	Balance	Management
N943	Machine Operators: Pulp and Paper Products	-3.2	Surplus	C
N951	Machining, metalworking, woodworking and related machine operators	-2.7	Surplus	C
N949	Other Assembly and Related Occupations	-2.6	Surplus	C
N013	Managers in Communication (Except Broadcasting)	-2.4	Balance	Management
N843	Agriculture and Horticulture Workers	-2.1	Surplus	C
N525	Athletes, Coaches, Referees and Related Occupations	-2.0	Balance	B
N072	Facility Operation and Maintenance Managers	-1.8	Balance	Management
N729	Other Construction Trades	-1.8	Balance	B
N644	Tour and recreational guides and casino occupations	-1.6	Surplus	C
N217	Computer and information systems professionals	-1.6	Balance	A
N727	Carpenters and Cabinetmakers	-1.4	Surplus	B
N743	Other Transport Equipment Operators	-1.4	Balance	C
N948	Mechanical, Electrical and Electronics Assemblers	-1.3	Surplus	C

NOC = National Occupational Classification.

1. The National Occupational Classification (NOC) is organised into five skill categories: management occupations; skill level A, for occupations that usually require university education; skill level B for occupations that usually require college education or apprenticeship training; skill level C for occupations that usually require secondary school and/or occupation-specific training; and skill level D for occupations where on-the-job training is usually provided.

Source: HRSDC (2011), Canadian Occupational Projection System, 2011 Reference Scenario.

projected require only a high-school diploma (skill level C). None of the occupations in projected excess supply requires only the lowest level of education attainment (less than a high-school diploma, corresponding to skill level D), continuing the trend observed in the wage premium data of less unfavourable labour-market conditions for the lowest skill level than for persons with a high-school diploma.

It should be noted that these projections are intended only to highlight potential pressure points in the absence of endogenous adjustment. In reality, wages and conditions of employment will adjust in response to shortages or surpluses, encouraging employers to economise on (use more) occupations in shortage (surplus) and employees to enter (not enter or leave) occupations in shortage (surplus), thereby diminishing imbalances.

Labour supply rises in response to skills shortages, but weakly in some cases and/or with long lags

More Canadians acquire PSE credentials when expected earnings premiums for them increase. Belzil and Hansen (2006b) find that the probability of staying in education longer increases as expected PSE earnings premiums increase. This effect is lowest for high school and highest for those enrolled in university programmes (increasing the probability that they complete their degrees).

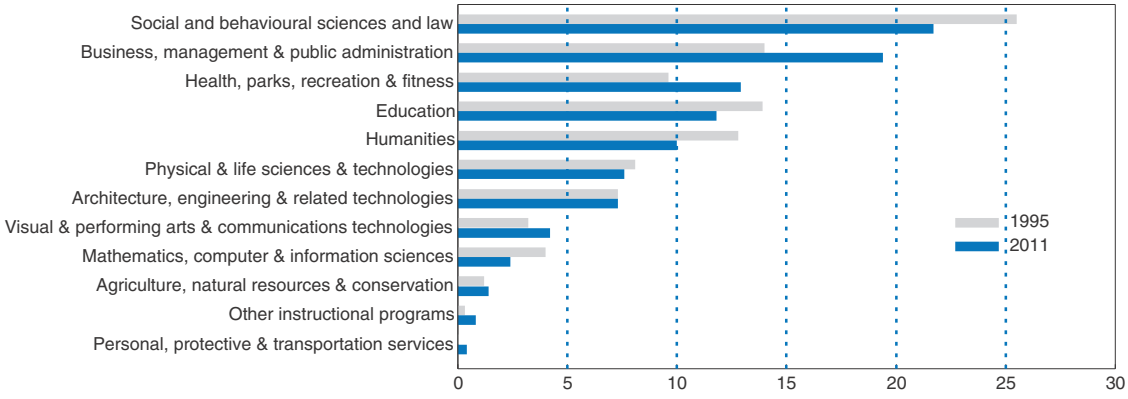
Expected earnings also affect the choice of field of university study and hence the distribution of graduates' qualifications, although the effect may not be large. Belzil and Hansen (2006b) find that an increase in expected earnings significantly increases the probability of choosing a field of study. Business studies are the most sensitive to expected earnings. Similarly, Boudarbat and Montmarquette (2006) find that university undergraduates' choice of field of study responds to differences in expected earnings, with the effect somewhat stronger for men than for women. However, they also find a significant effect of attitudinal variables on field-of-study choices, and that the strength of these effects is such that large variations in earnings across fields of study – relative to those currently observed – would be needed to substantially change students' study choices.

This finding is borne out by the apparent supply response to earnings premium patterns noted above – higher in engineering than in other fields and rising since the mid-1990s, especially if immigrants are excluded, and lower and falling in the humanities. Despite the rising pecuniary advantages of studying engineering and disadvantages of studying the humanities, the share of (first-university cycle) architecture, engineering and related graduates in total graduations has been stable, while the share of humanities graduates has declined only slightly (Figure 2.6). The share of graduates in mathematics and physical sciences also declined, despite stable above-average earnings premiums. On the other hand, there has been a very large increase in the share of management graduates, bearing out Belzil and Hansen's (2006b) finding that students in this field are highly sensitive to financial incentives.

The time needed for graduation rates to adjust to a labour-market shock may be long, at least in the natural sciences and engineering fields. Majumdar and Shimotsu (2006) find that a permanent increase in R&D expenditures (as a percentage of GDP) in Canada leads to a permanent increase in graduations in natural sciences and engineering. Under a static expectations model, 80% of the adjustment occurs within six years, whereas under a rational expectations model it takes 10 years.

Figure 2.6. **Total graduations by field of study, 1995 and 2011**

Per cent



Source: Statistics Canada and OECD calculations.

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In the trades, adjustment to eliminate skills shortages through increased training in these fields or migration is somewhat faster than for occupations requiring university degrees. Coe and Emery (2006) examine the labour-market adjustment process in eight construction trades in 20 Canadian metropolitan areas. They find no marked occupational differences in the distributions of half-lives of adjustment (i.e. the time for half of the initial wage shock to have dissipated), with median estimates for these occupations in the range of 2.3-3.0 years.

Policymakers can increase economic well-being by speeding up adjustment to eliminate skills shortages where the cost of the government intervention is less than the benefit from faster adjustment. Potential areas for action include improving labour-market information, making the post-secondary education system and immigration system more responsive to labour-market conditions and removing barriers to domestic labour mobility.

Better labour market information would improve job matching and education investment decisions

Labour market information can decrease adjustment costs

Provision of labour market information (LMI) can facilitate job matching and improve human capital investment decisions (Sharpe and Qiao, 2006). Policymakers are also reliant on LMI to help inform public investment and spending decisions. For instance, more detailed local LMI would facilitate better targeting of public monies (Advisory Panel on Labour Market Information, Drummond Report, 2009). As such information is non-excludable, there is a strong case for the government to pay for its provision (Sharpe and Qiao, 2006).

Based on an international comparison of LMI systems in five countries (Canada, the United Kingdom, Germany, the United States and Australia), Sharpe and Qiao (2006) characterise the Canadian system as excellent, having a diversified set of information providers and sources. The Advisory Panel also acknowledged that Canada has one of the best LMI systems in the world but conceded that it is always possible to do better. Indeed, the Panel pointed out that globalisation, urbanisation and Canada's shift towards an increasingly

knowledge-based economy are causing skills requirements and labour market conditions to change at an unprecedented rate, making it more important than ever to sharpen and develop the tools to monitor and predict these changes.

For students to respond to skills shortages by choosing to acquire the skills in short supply, they need to be well informed about expected returns to PSE. The provision of such information to secondary-school students can be particularly effective in encouraging them to continue their education beyond the secondary level. Yet, there are no institutional requirements to provide LMI in schools, a shortcoming which Sharpe and Qiao (2006) considered to be the main weakness of Canada's LMI system. Where guidance counselling is available, career guidance is frequently underfunded – counsellors are generally fully occupied responding to students' personal crises.

Belzil and Hansen's (2006) study raised the possibility that high-school students from families where the father has less than PSE attainment do not continue their education to the PSE level owing to poor information (including from role models) about job prospects by level of attainment. These authors found that fathers' education matters more for the probability of continuing schooling than mothers' and that the effect of having a father who has a PSE qualification is greater at the high-school level than at higher levels of education. These findings also suggest that credit constraints are not a major barrier to continuing education at the PSE level (assuming parental education and income transfers to children are correlated).

The provision of LMI to secondary-school students can be a highly cost-effective intervention to improve the quality of their PSE investment decisions. Johnson et al. (2006) carried out a two-stage experimental study of factors influencing individuals' interest in PSE in a laboratory setting. They concluded that a relatively low-cost intervention (a 90-minute presentation) could increase the probability of a target group (youth aged 18-24 years with poor understanding of the relation between education and labour market outcomes) choosing to continue education beyond the secondary level. The intervention had no effect on the probability for older people (aged over 24), who have less to gain from PSE, continuing their education beyond the secondary level, highlighting the importance of targeted measures. This study also demonstrates that laboratory methods can be used in small-scale tests to evaluate the effectiveness of different approaches to LMI before they are implemented on a large scale.

In a similar vein, Frenette (2009) found that secondary-school students who are aware that the occupation in which they wish to work requires a university degree (three-quarters are aware at age 15, rising to 84% by age 17) have much higher subsequent university attendance rates (controlling for factors such as academic performance, and parental education and income). This suggests that providing this information to secondary students could increase participation rates in PSE.

Students also need adequate LMI to guide their choices of field of study. While rich information on labour-market prospects (earnings and unemployment rates) by occupation is already available through the *Working in Canada* and *Job Bank* websites, students need information linking fields of study to occupational outcomes to make sound decisions. As things stand, labour-market prospects and hence expected returns by field of study are often unclear. Given individuals' difficulty to diversify their human capital, this also exposes them to the risk of making costly mistakes when they invest in their skills (Gomez and Gunderson, 2006). Many youths choose university studies over college or

apprenticeship training in pursuit of superior earnings prospects, even though numerous college and apprenticeship credentials yield more than many university degrees (Table 2.4). Significant enhancements in LMI will occur soon when Employment and Social Development Canada begins providing easily accessible information on the outcomes of graduates from various fields.

Table 2.4. **Earnings can be higher at the college or trades level than the bachelor's level**

Based on median earnings 5 years after graduation, 2011 adjusted to 2013 prices

Earnings for people with a college, CEGEP[1] or other non-university certificate or diploma in these fields…	**… are higher than for people with a bachelor's degree in these fields**
Security and protective services (CAD 55 975)	Business, management, marketing and related support services (CAD 54 250). Agriculture, natural resources and conservation (CAD 52 949). Physical and life sciences and technologies (CAD 52 298). Education (CAD 51 440). Social and behavioural sciences (CAD 48 920). Humanities and arts[2] (CAD 43 279).
Architecture, engineering and related technologies (CAD 52 882)	Agriculture, natural resources and conservation. Physical and life sciences and technologies. Education. Social and behavioural sciences. Humanities and arts.[2]
Mechanic and repair technologies (CAD 52 270)	Education. Social and behavioural sciences. Humanities and arts.[2]
Computer science, mathematics and statistics (CAD 47 891)	Humanities and arts.[2]
Precision production (CAD 47 472)	Humanities and arts.[2]
Construction trades (CAD 44 488)	Humanities and arts.[2]
Earnings for people with a registered apprenticeship certificate in these fields…	**… are higher than for people with a bachelor's degree in these fields**
Construction trades (CAD 57 963)	Business, management, marketing and related support services. Agriculture, natural resources and conservation. Physical and life sciences and technologies. Education. Social and behavioural sciences. Humanities and arts.[2]
Mechanic and repair technologies (CAD 55 120)	Business, management, marketing and related support services. Agriculture, natural resources and conservation. Physical and life sciences and technologies. Education. Social and behavioural sciences. Humanities and arts.[2]
Precision production (CAD 54 270)	Agriculture, natural resources and conservation. Physical and life sciences and technologies. Education. Social and behavioural sciences. Humanities and arts.[2]
Architecture, engineering, and related Technologies (CAD 50 664)	Social and behavioural sciences. Humanities and arts.[2]

1. CEGEP: Collège d'enseignement général et professionnel (Québec).
2. Humanities; and design, music, performing, fine and applied arts.

Source: Calculations by Employment and Social Development Canada, based on Statistics Canada's *2011 National Household Survey*.

There is currently no data collection method in place which would allow for the disclosure of valuable information on labour-market outcomes (other than earnings) by

institution. Yet, this is an important piece of information to guide students' decisions. Degree majors from different universities are not treated equally in the labour market. Many large employers recruit exclusively from certain schools, diminishing the value of identical degree majors from others. As this information is already collected, the direct cost of making it available would be minor. Transparency would increase pressure on those whose degree majors have a relatively low value in the labour market to improve or specialise in other fields.

More detailed vacancy and unemployment data would facilitate job matching

Job matching would be facilitated by better vacancy data. Following the recommendations of the Advisory Panel Report (2009) (Box 2.3), Statistics Canada began to collect and publish vacancy data. However, they apply only to broad industrial categories, as opposed to specific occupations, and do not provide enough information at the local level. This limits their usefulness to workers looking for a job in a new and unfamiliar labour market, to governments for selecting skilled immigrants and designing skill development policies and educational programmes, and to employers for drawing up their skill-management policies. In response to these shortcomings, the Alberta government has started developing its own LMI that aims to provide information that will inform employers on where best to go to recruit.

Assessment of the efficiency of job matching would also be enhanced by the provision of data on the intensity with which employers seek to fill vacancies. Davis et al. (2012) showed that a potential cause of the outward shift in the Beveridge curve (relating unemployment and job vacancies) in the United States in recent years was a large drop in the intensity of job recruiting, which is highly cyclical. During periods of weak demand, employers list job openings but do not actively pursue filling them – the job is only filled if a very good candidate

Box 2.3. **The main findings and recommendations of the Drummond report**

Following widespread consultations with Canadians concerned with LMI, the main messages that the Advisory Panel on Labour Market Information (Drummond Report) reported back were that:

- A job vacancy survey can be of direct aid to workers in acquiring appropriate skills or finding jobs in a new and unfamiliar labour market and to governments for skilled immigrant selection and skill development policies and education programmes.
- Canada faces challenges in education data collection. Even relatively straightforward data on colleges and degree-granting institutions, as well as data on workplace skills use are unavailable or years out of date.
- Canadians want more information on local labour markets. Very limited reliable information (other than the Census, which is not timely) is available even for fairly large cities and towns. This deficiency makes it difficult for Service Canada regional offices to meet their customers' information needs.
- There are gaps in LMI with respect to the labour-market performance or needs of certain groups, including women, youth, older workers, visible minorities, immigrants, Aboriginal peoples and the disabled.
- LMI is difficult to find and use. And
- Macroeconomic policymakers and economists need vacancy-rate data and a labour price index to help them steer the economy on a sustainable, non-inflationary track.

Box 2.3. **The main findings and recommendations of the Drummond report** *(cont.)*

The Panel made general recommendations to improve LMI in seven areas:

- **Governance:** The Forum of Labour Market Ministers (FLMM) should assume a leadership role and provide the broad strategic direction needed to manage and coordinate Canada's overall LMI system.
- **Data collection:** Statistics Canada should fill the main gaps in the national LMI system and work with the provinces/territories to fill the gaps more specific to their circumstances.
- **Data analysis and interpretation:** Governments should improve this to make sure the information is relevant, well targeted to different users and easy to understand.
- **Raising awareness and improving data dissemination:** Once a better system is in place, a major effort is required to ensure that Canadians are aware of the available LMI and its uses and that it is more easily accessible, timely and user friendly.
- **Funding:** All governments should contribute financially to the improved LMI system, and Statistics Canada should make available all basic national labour-market statistics on its website free of charge.
- **Implementation:** The FLMM should produce a follow-up implementation report.

turns up. Allowing for this factor, an outward shift in the Beveridge curve could be cyclical, rather than an indication of a structural decline in job-matching efficiency.

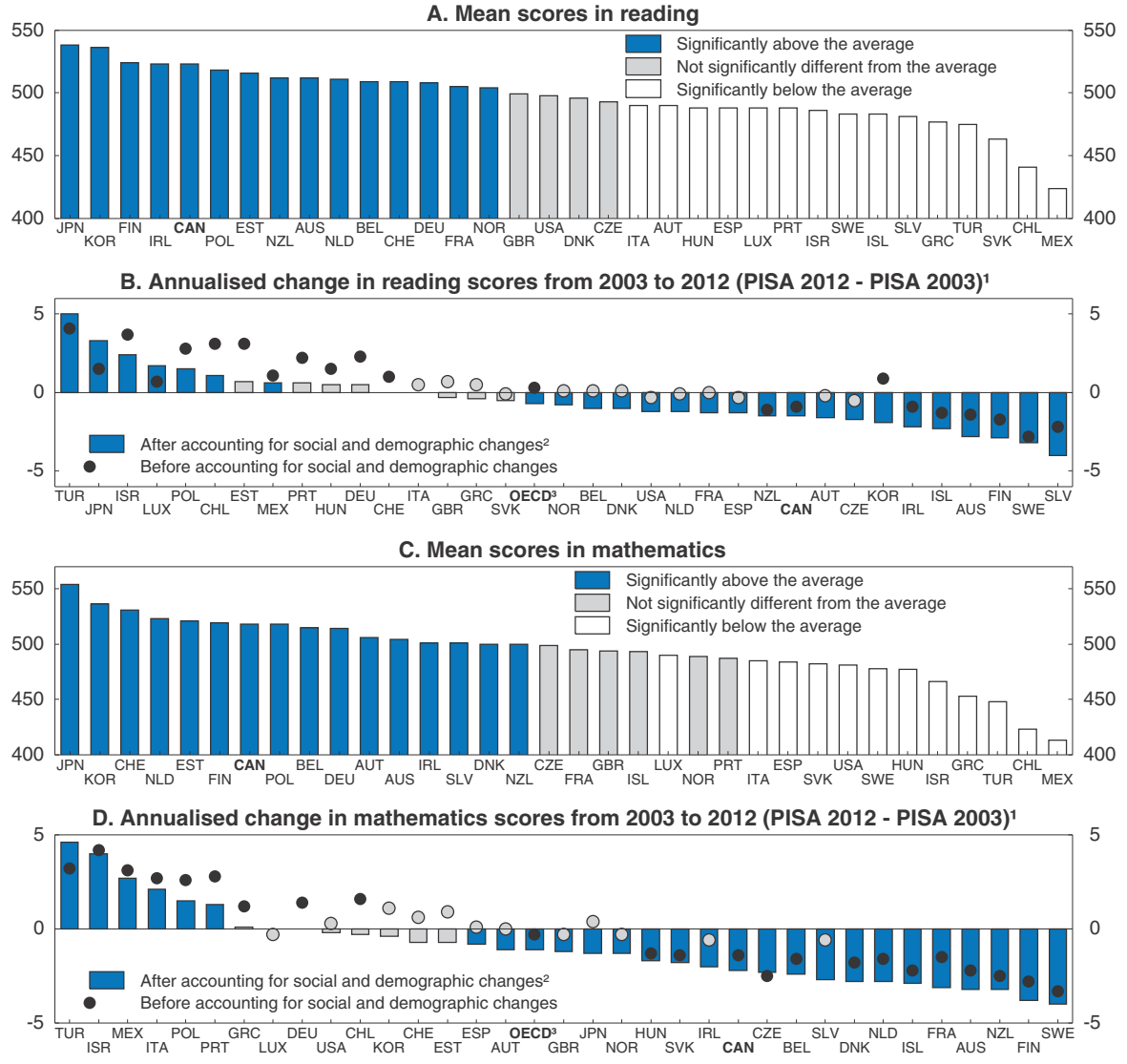
Increasing the supply of skills in demand through education and training

Strengthening literacy and numeracy skills

Strong literacy and numeracy skills are necessary to perform well in a modern, globalised information-based economy. Canadian students are strong performers in reading skills and mathematics in the PISA study, which tests these skills for 15 year-olds, although performance has deteriorated at a faster rate in mathematics than in most other OECD countries (Figure 2.7). By contrast, literacy and numeracy scores of young adults compare much less favourably. According to the OECD's recent Adult Skills Survey (PIAAC) (OECD, 2013), the average literacy score for the 16-24 age group in Canada is below the average of the 23 countries/regions that participated in the study, while the average numeracy score is not significantly different from the country/region average (Figure 2.8). Among the countries/regions that participated, Canada's rank in reading skills/literacy falls from 5th in PISA to 15th in PIAAC, while for mathematics/numeracy it falls from 7th to 16th. This worsening suggests that Canadian upper secondary and PSE contribute less to literacy and numeracy skills development than in most other countries. One factor could be that participation in university education is lower in Canada than in many other countries, reflecting the high proportion of students who study in colleges and polytechnics.

Moreover, literacy and numeracy scores for the 16-24 age group are not much higher than for the 55-65 age group. Adjusting for a variety of factors – gender, immigrant status and language ability, educational attainment, socio-economic background and type of occupation – the difference in literacy scores between these age groups in Canada is lower than in most other countries (Figure 2.9). This could reflect, an earlier "massification" of post-secondary education than in other countries, a smaller improvement in the education system than in other countries, a more limited difference in education attainment between the young and the old than in most other countries or that skills deteriorate less with age

Figure 2.7. **Canada's PISA scores in reading and mathematics skills, 2012**



1. Statistically significant values are marked in a darker tone. The annualised change is the average annual change in PISA score points. It is calculated taking into account all countries'/economies' participation in PISA. For more details, see Annex A5 of PISA 2012 results: *What students know and can do* (volume I).
2. The annualised change adjusted for demographic changes assumes that the average age and PISA index of social, cultural and economic status, as well as the percentage of female students, those with an immigrant background and those who speak a language other than the assessment at home are the same in previous assessments as those observed in 2012. For more details on the calculation of the adjusted annualised change, see Annex A5 of the PISA 2012 results.
3. OECD average 2000 considers only those countries with comparable reading scores since PISA 2000.

Source: OECD (2013), *PISA 2012 Results: What Students Know and Can Do* (volume I).

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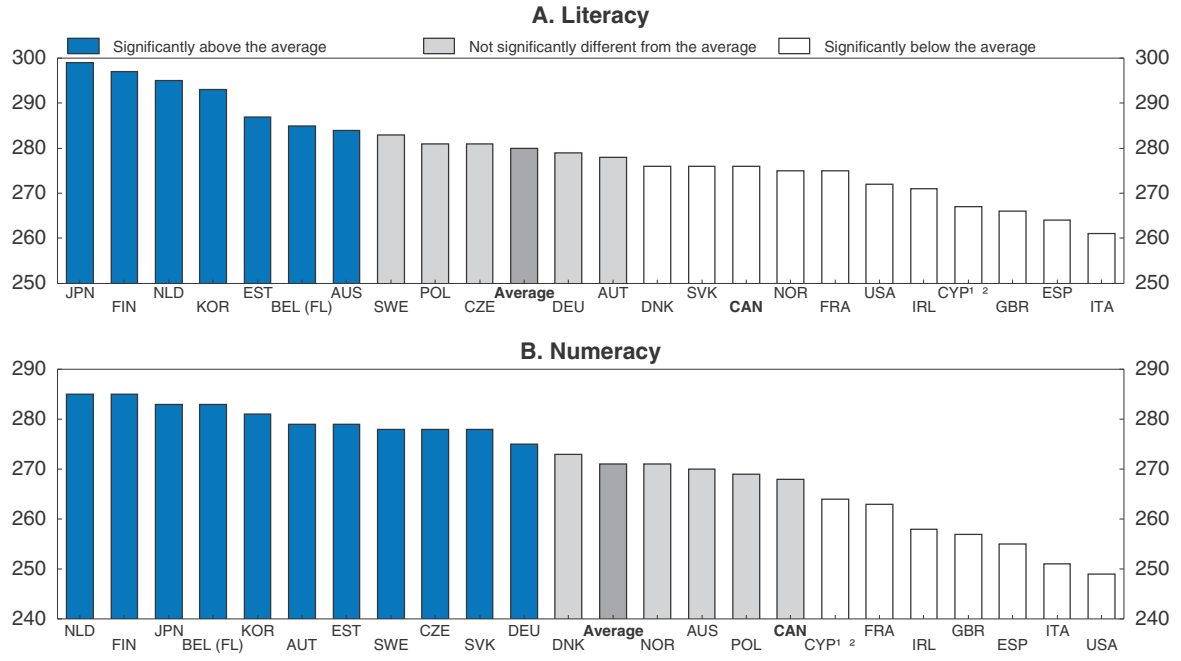
in Canada than in most other countries. Further research is required to determine the relative importance of these explanations.

These skills are also the foundation upon which technical skills acquired in PSE are built. If this foundation is weak, students may not be able to pursue studies in high paying fields, such as engineering, and/or to complete these studies. Inadequate numeracy skills

Figure 2.8. **Literacy and numeracy scores for 16-24 year-olds, 2012**

Mean proficiency scores



Note: Statistical significance at the 5% level. Literacy-related non-response (because of a lack of background information due to language difficulties, or learning or mental disabilities) is excluded from the calculation of mean scores. However, these figures present an estimate of lower-bound mean scores by attributing a very low score (85 points) to such adults.

1. *Note by Turkey:* The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".
2. *Note by all the European Union Member States of the OECD and the European Union:* The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Source: OECD (2013), *OECD Skills Outlook 2013*, Figures 2.3a and 2.7a.

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prevent many apprentices from completing the in-school part of their training, usually resulting in non-completion of the apprenticeship (see below).

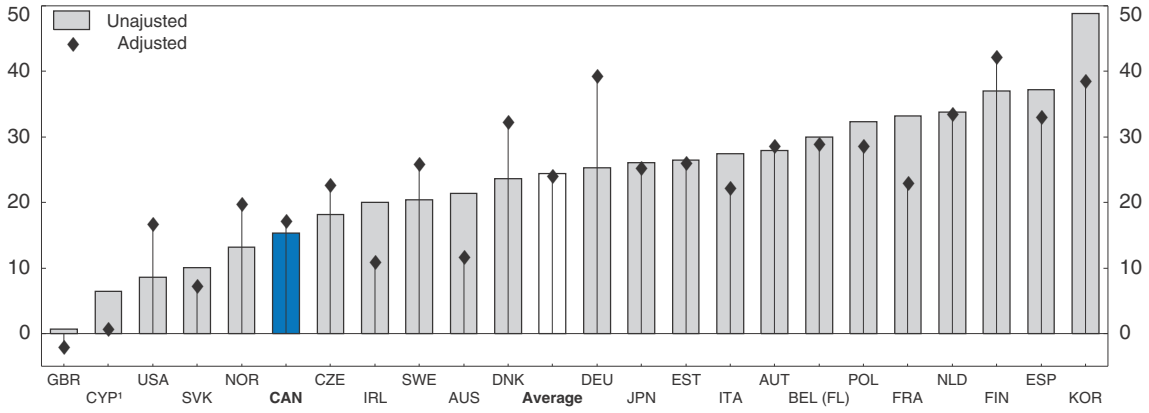
To prevent weak literacy or numeracy skills being a barrier to PSE completion in general and in certain fields in particular, PSE institutions should consider investing in remedial education to bring weaker students up to speed, as is done at the University of Chicago, despite the cost in terms of teaching resources. Upper secondary education also should be improved to ensure that fewer young adults leave the system with weak numeracy or literacy skills. To this end it could be helpful to require students to study (at least practical) mathematics and English/French until the end of secondary school. It could also be worthwhile to ensure that all secondary-school mathematics teachers have an adequate mathematics background – in Ontario, for example, this is not a requirement of the job.

Making the PSE system more responsive to labour-market demand

For students to be able to undertake studies in fields in high demand PSE institutions need to respond by making places available to satisfy students' choices. In a market-driven model, tuition fees would rise in fields in demand and fall in other fields, encouraging PSE institutions to expand study places in the former fields and shrink them in the latter. However, Canadian PSE institutions have little freedom to set tuition fees. Moreover, as it is

Figure 2.9. **Differences in literacy scores between the 16-24 and 55-65 age groups across countries, 2012**

Difference in scores in points



Note: Unadjusted differences are the differences between the two means for the two age groups. Adjusted differences are based on a regression model and take account of differences associated with other factors: gender, education, immigration and language background, socio-economic background, and type of occupation. Only the score-point differences between the two age groups are shown, which is useful for showing the relative significance of age *vis-à-vis* observed score-point differences. All adults aged 16 to 65, including the non-employed, are in the analysis. For more detailed regression results, including for each category of each variable included in the model, see table B3.17(L) in Annex B in *OECD Skills Outlook 2013*.

1. See Notes 1 and 2 in Figure 2.8.

Source: OECD (2013), *OECD Skills Outlook 2013*, Figure 3.2 (L).

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difficult in the short term to wind down one faculty so that another can be expanded, any supply response is likely to occur only with a long lag. In the meantime PSE institutions are likely to respond to a rise in student demand in certain fields by making entry more restrictive and doing the opposite in other fields, which would only make sense if there were no shortages in the occupations using the skills acquired in the fields being restricted.

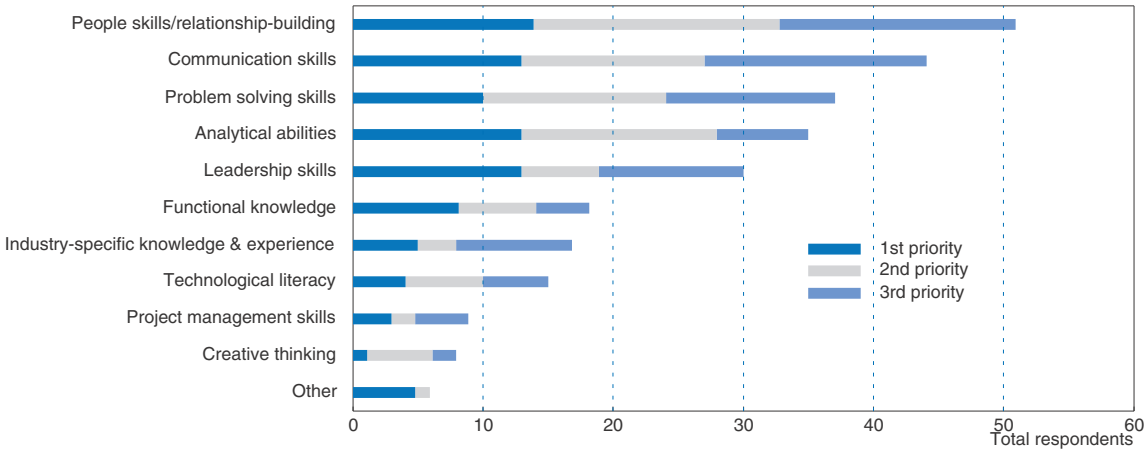
The experience of other comparable countries (Australia, New Zealand and the United Kingdom) that have endeavoured to go further in making PSE more market driven highlights the political difficulties of implementing such a model (Schwartz, 2006). Opposition to high tuition fees has been such that caps have been set at low levels, with the result that most universities charge the maximum permitted fee, resulting in no competition on price. While reforms in federal-government PSE funding have moved marginally in a "more-market" direction by shifting some funding from PSE institutions to students, this is unlikely to have a large impact on PSE institutions' supply response to students' demands.

The places to be expanded are likely to be more expensive than average if they are in science/technology/engineering/mathematics (STEM) fields. The Center for STEM Education and Innovation at American Institutes for Research (2013) finds that the full attribution cost – education and related spending per undergraduate completion – at US public four-year institutions in 2009 was USD 65 000-80 000 in most STEM fields compared with an average for all fields of USD 60 000. Engineering was much more expensive (almost USD 100 000), while mathematics and statistics were cheaper (less than USD 50 000). Universities would need larger budgets to adapt the places they make available to such a shift in demand.

Many employers would also like to see more done to equip university graduates with soft skills, which include the ability to work in teams and communication proficiency. These are very important attributes sought in entry-level hires by employers (Figure 2.10).

While there are no survey data specifically on entry-level hires, a recent large-employer survey suggests that many of them have difficulty finding new recruits with these skills (Figure 2.11). These difficulties are undoubtedly greater for entry-level hires, as soft skills are often acquired in the workplace. As recommended in the 2012 *Survey*, increasing the weight of practice-intensive programmes would be effective for developing creativity, teamwork and leadership skills (Avvisati et al., 2013). Experiential learning (such as co-op placements) during university education has proven to be highly effective in developing the soft skills valued by employers (Sattler, 2011).

Figure 2.10. **Soft skills are very important when hiring entry-level employees, 2013**



Note: Survey The Canadian Council of Chief Executives is a not-for-profit, non-partisan organisation composed of the CEOs of Canada's leading enterprises.
Source: Canadian Council of Chief Executives.

StatLink http://dx.doi.org/10.1787/888933079839

Figure 2.11. **Many employers struggle to find workers with the right skills, 2013**

Source: Canadian Council of Chief Executives.

StatLink http://dx.doi.org/10.1787/888933079858

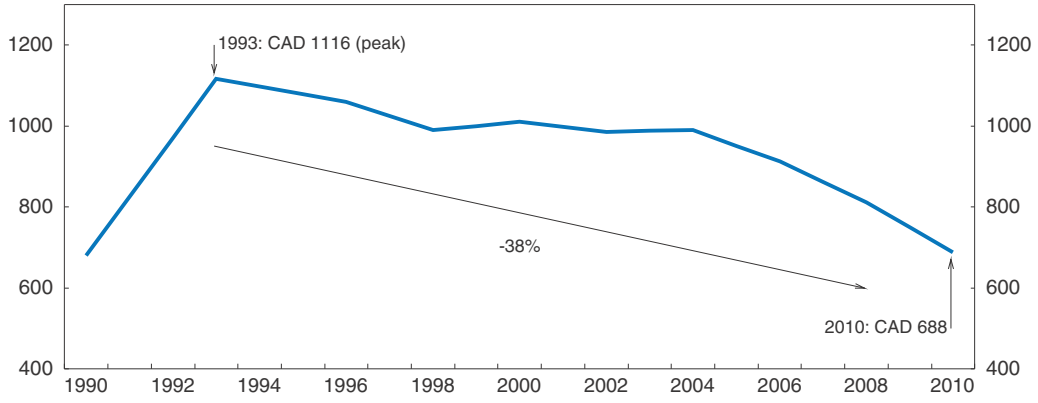
Increasing the efficiency of professional development training

Professional development training is aimed at increasing the skills of employees or potential employees. It can be particularly valuable to help workers adapt to workplace changes such as the introduction of new technology or organisational arrangements and to

equip potential workers with skills to make them more employable. Despite the increase in technological and organisational change occurring over the past two decades, expenditure on employer-sponsored training, most of which is non-formal, has been declining in Canada (Figure 2.12). Nevertheless, employer expenditure on non-formal training and the ratio of the cost of expected time spent in such training over a working life to annual salary are around the average for OECD countries, and participation in such training is above the average of countries that participated in the PIAAC study (Figure 2.13). By contrast, publicly funded training in Canada is low by international comparison (Figure 2.14). The result is that total training expenditure is comparatively low.

Figure 2.12. **Expenditure on employer-sponsored training per employee**

2010 constant CAD



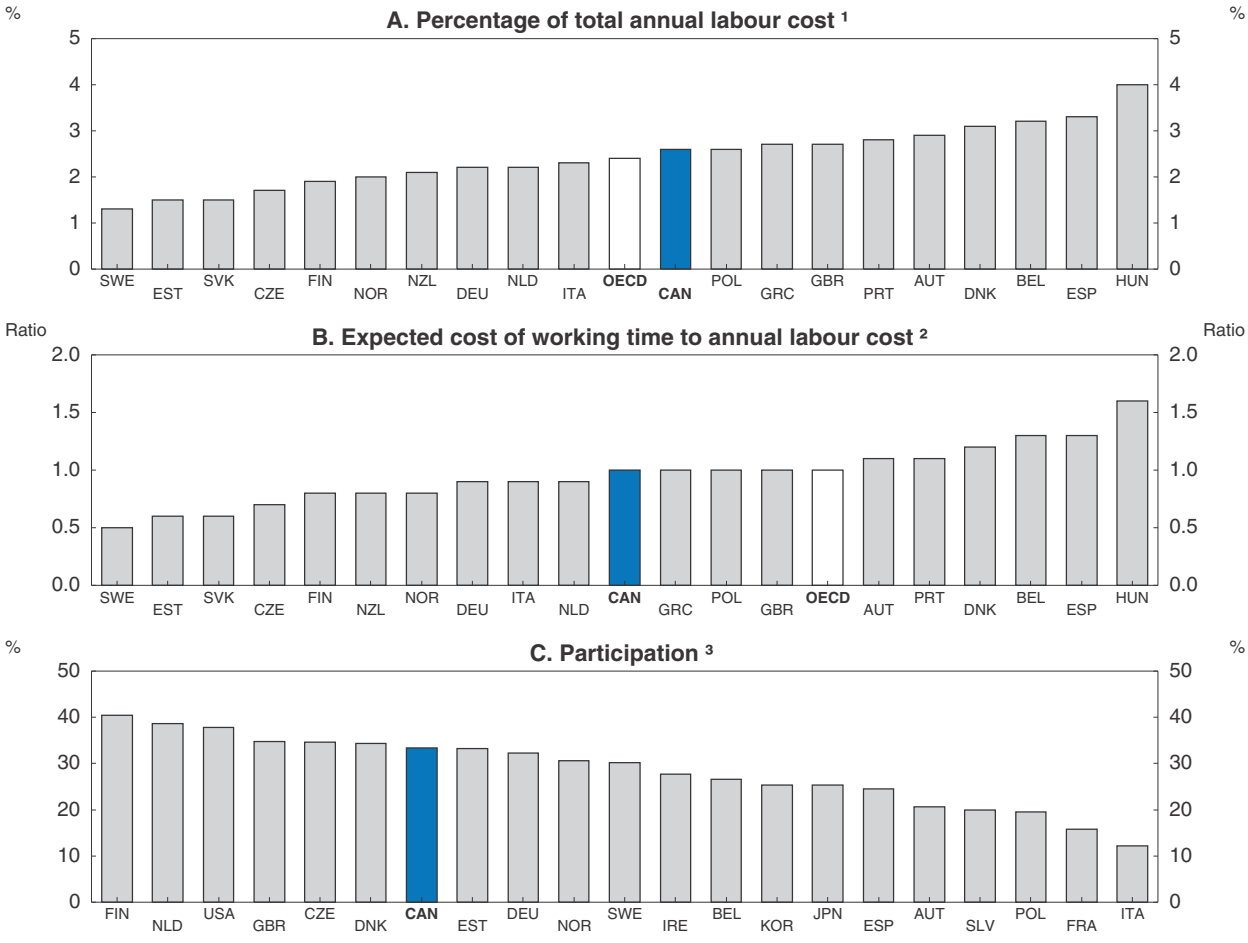
Source: Burleton, D. et al. (2013), "Jobs in Canada, Where, What and For Whom", *TD Economics Special Report*, 22 October.

StatLink http://dx.doi.org/10.1787/888933079877

The Canada Job Grant is being introduced to make public training expenditures more demand-driven to help address skills shortages. Specifically, the Grant will enable employers to make decisions about who gets training and what type of training, ensuring that training is better aligned with job opportunities and thereby helping employers to fill vacant positions. Two-thirds of the costs of the Grant will be paid by governments, and the remainder will be cost-shared by employers. Provincial/territorial governments have some flexibility as to how the government contribution is funded, be it from the new Canada Job Fund Agreements, the Labour Market Development Agreements (which is mostly used to train unemployed individuals closer to the labour market) or other provincial/territorial own-source revenues. The cost-sharing aspect is intended to bring the amount of employer-provided training closer to the socially optimal level (which is higher than the privately optimal level owing to the external benefits of training).

While provincial/territorial governments strongly support the involvement of employers in improving the skills of their current and future employees, consistent with the Grant, they expressed concern that many SME employees could miss out on Grant training because their employers do not have the means to pay their share of the total training costs (including the employee's absence) or would find the Grant administratively burdensome. Provincial/territorial governments were also concerned about potential challenges in tailoring the Grant to local circumstances. In response, the Grant is being designed to provide additional flexibility to meet the needs of small employers and

Figure 2.13. **Employer investments and participation in non-formal training**



1. Total annual labour cost of employer-sponsored non-formal education as a percentage of annual labour cost, for employed 25-64 year-olds, 2007.
2. Expected cost of working time devoted to employer-sponsored non-formal education over the working life, for employed 25-64 year-olds, 2007.
3. Participation in organised sessions for on-the-job training or training by supervisors or co-workers during the past year, 16-65 age group, 2012.

Source: OECD, *OECD Education at a Glance 2012;* and OECD *Skills Surveys*, *www.oecd.org/site/piaac/PIAAC_Background_Compendium%20_Round1_12Nov2013.xlsx.*

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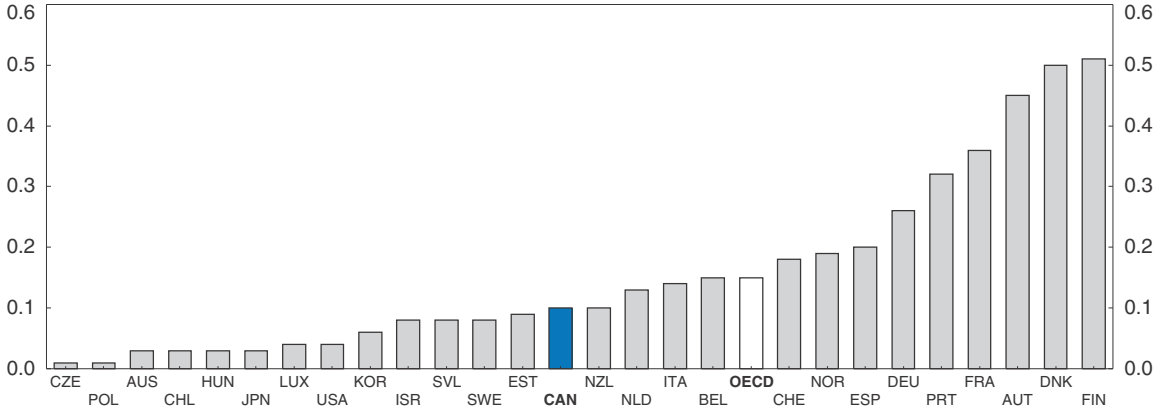
employer associations, educational institutions and labour organisations, including a commitment to minimise the administrative burden. For example, small businesses will benefit from flexible arrangements under the Canada Job Grant, such as the potential to count wages as part of the employer contribution. As part of implementation, the Grant will be reviewed in the second year to allow time to make adjustments as necessary to ensure that it is meeting the needs of employers and jobseekers.

Increasing the apprenticeship completion rate

Strong demand for tradespeople and an expansion of trades covered by the Red Seal programme, which harmonises trade certification regimes by developing common provincial standards, led to a doubling in the number of apprenticeship registrations and completions between 2000 and 2011 (Box 2.4). However, the completion rate remained at only about 50%

Figure 2.14. **Publicly funded training expenditure in international comparison**

2011, as a percentage of GDP



Source: OECD Labour Market Programme Database.

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over this period, (Canadian Chamber of Commerce, 2013). This completion-rate outcome is weaker than for university undergraduates, although the difference is undoubtedly exaggerated by the ways in which enrolment data are compiled (Laporte and Mueller, 2011). Completion rates are higher in some trades, such as electricians, where it can be necessary to be qualified to exercise the trade. Low completion rates limit the number of certified members (i.e. journeypersons) who will be available to train the next generation of apprentices.

Box 2.4. **Apprenticeship features**

Apprenticeships are workplace training programmes designed to teach students the skills needed to meet an industry standard (Canadian Chamber of Commerce, 2013). These programmes typically comprise 80-85% on-the-job training along with technical (block) training (Canadian Apprenticeship Forum, 2013). The on-the-job component requires the apprentice to accumulate the required number of hours under the supervision of the specified number of certified journeypersons. The technical component is undertaken in a college, union or private training centre or online. Once these requirements have been met, the apprentice may then take a written exam to become certified in a particular province or territory. Apprenticeships normally last from two to five years.

The lower completion rate of apprentices compared to undergraduates cannot be explained by smaller labour-market penalties for non-completion. According to one now older study (Akyeampong, 1991) apprentice non-completers earned 77% of the hourly wage of journeypersons 12 months after the termination of a programme, whereas university undergraduate non-completers earned 81% of their graduating counterparts. Moreover, apprentices were less likely to be employed in the trade in which they were apprenticed than completers (52%, compared with 96%) and to have worked fewer months in the past year (8.5, compared with 11.5). More recent evidence (Laporte and Mueller, 2012) similarly highlights the large labour-market penalty for not completing an apprenticeship programme – it shows that hourly wage rates of apprenticeship completers are about 21%

higher than those of non-completers. Among completers, those who obtained certification earn about 12% more per hour.

One of the barriers to completing is the lack of income during the in-class training component of apprenticeships. Apprentices are not paid during such training, which normally takes place in a block of eight to ten weeks once a year. While employers usually lay off apprentices just before such training so that they can claim Employment Insurance (EI) while in school, many apprentices cannot afford to live on EI during this period (Canadian Chamber of Commerce, 2013). Apprentices may also be prevented from completing the in-school component of their training by employers who are unwilling to release them for it, especially during periods of strong economic growth. Alternatively, apprentices may be prevented from completing by difficulties in maintaining their employment, and hence, in accumulating the number of hours of on-the-job training required to advance through the programme.

To reduce the financial barrier to apprentices completing their in-school training, the interest-free Canada Apprentice Loan of up to CAD 4 000 per period of technical training for apprentices in their first Red Seal trade (trades covered by the Red Seal Program) was proposed in the 2014 federal budget. Using complementary training and development programmes to support apprentices during their block courses could also help. Nova Scotia has done this with positive results. The new Canada Job Grant could also help to strengthen employers' incentives to sustain employment for apprentices and allow them to undertake their in-school training.

Barriers to completion (and to inter-provincial labour mobility) also arise when an apprentice moves between provinces. There is limited recognition of in-school training credits from other provinces (especially from pre-employment community college courses), and, because material is covered in a different order across provinces, a migrating apprentice risks being placed in a lower year of the programme, increasing the time to completion. Yet such mobility could help apprentices laid off in a depressed economic region to find employment again and hence continue to progress towards completion. The Canadian Council of Apprentices has been working on strengthening inter-provincial standards and assessment methods under the Red Seal Program to support greater harmonisation, transferability between occupations and sectors and more efficiently recognise immigrants' qualifications towards apprenticeship certification. The new format and process will be evaluated through a pilot project in 2013/14 for the Construction Electrician and Steamfitter/Pipefitter trades. The Atlantic provinces have made considerable progress towards harmonising their apprenticeship systems, resulting in the near-elimination of these barriers to mobility among them. Nova Scotia and Alberta have also made progress on mutual recognition of training hours and credits, but the problem of the order in which material is covered remains to be resolved. The best solution would be to harmonise apprenticeship programmes across all provinces and territories (there are already National Curriculum guidelines for the major trades), as is occurring in Australia. The federal government should continue to work with provinces to harmonise programmes.

Another barrier to completion in some cases is inadequate numeracy and literacy skills. This can create difficulties for both in-school and on-the-job training. Apprentices with such weaknesses need access to remedial education. To reduce the prevalence of this problem in the future, pre-apprenticeship programmes to strengthen mathematics and tool-use skills should be offered, as is already done in a number of polytechnics and

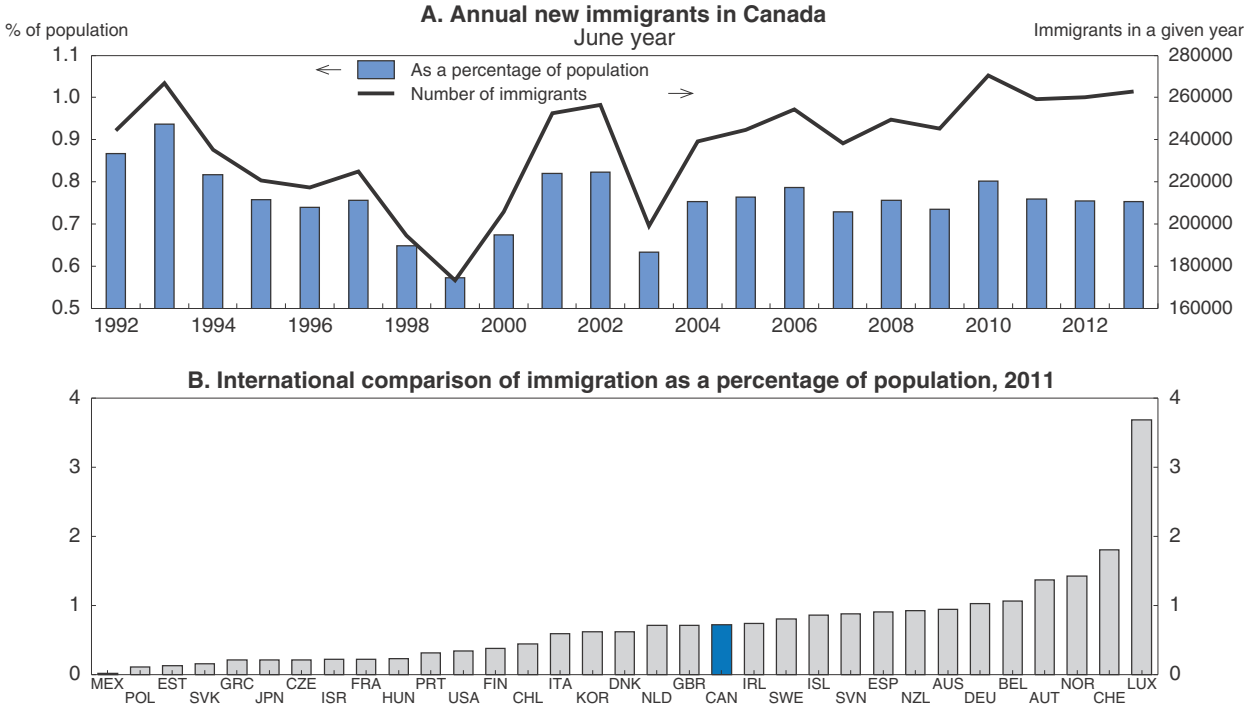
colleges (Canadian Chamber of Commerce, 2013). This would also increase the likelihood that would-be apprentices will be taken on by an employer. It could also increase the speed of adjustment to skills shortages in the trades.

Increasing education requirements and the share of in-school training in apprenticeship programmes could speed labour-market adjustment. Using data for eight construction trades in 20 Canadian metropolitan areas, Coe and Emery (2006) found that higher educational requirements to become an apprentice and increased training hours required during apprenticeship decrease adjustment time. They also found that required apprentice work hours increase the time required for adjustment. These results suggest that substituting pre-apprenticeship education and training during apprenticeship for required hours of work experience might make adjustment more rapid.

Making the immigration system more responsive to labour-market conditions

Another possible source of skills in short supply is immigration. It has been running at around the annual target level of 250 000 (0.75% of the population) over the past decade (Figure 2.15). Some 60% of immigrants are chosen on economic criteria, which is higher than in most other countries.

Figure 2.15. **Immigration is high in Canada by international comparison**



Source: Statistics Canada and OECD, *Population Database*.

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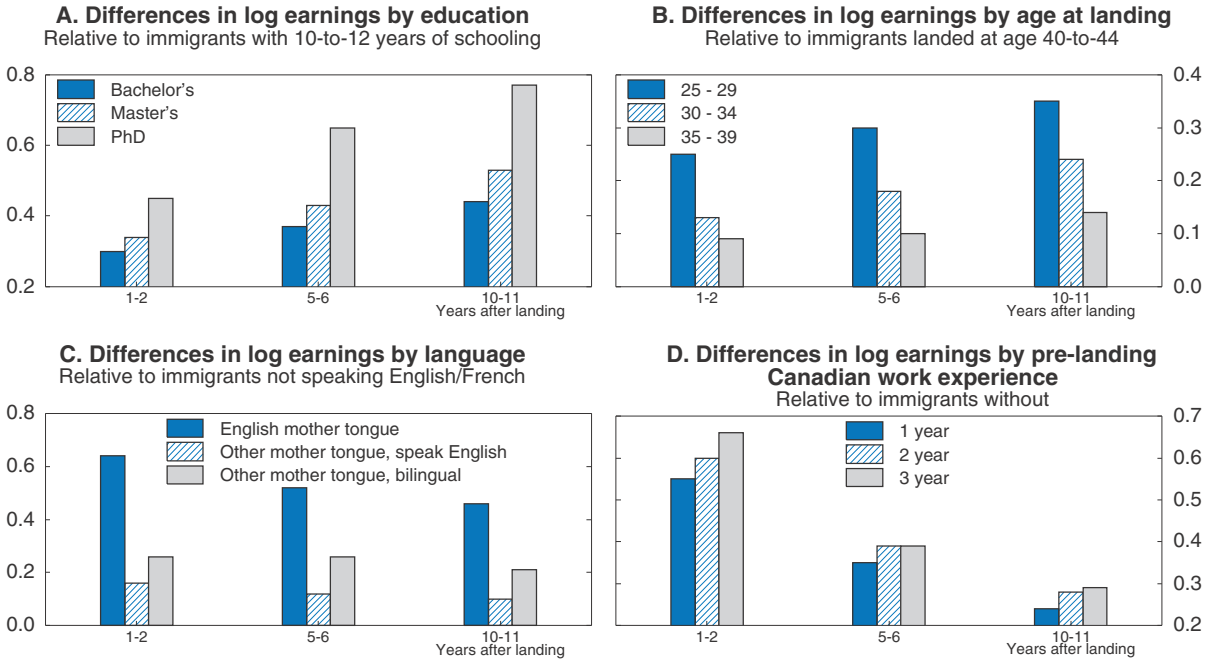
In recent decades economic immigrants have been selected largely on the basis of their level of human capital because immigrants with high levels are likely to have better labour-market outcomes. Such immigrants are better able to adapt to changes in labour-market

requirements than their less skilled counterparts and are likely to have a more favourable impact on public finances (Picot, 2013). Indeed, earnings premiums associated with higher levels of education for Principal Applicants of the Skilled Workers Class (in the Federal Skilled Worker Program (FSWP), which is the main programme for economic immigrants) grow substantially over time since arrival (Figure 2.16), as do those associated with younger age, when accumulation of human capital is more rapid. On the other hand, proficiency in the two official languages and Canadian work experience prior to becoming a permanent immigrant generate large earnings advantages, even if they diminish over time.

Figure 2.16. **Differences in earnings among immigrants with different attributes**

Principal applicants, skilled worker class, 1997-99 landing years



Source: Statistics Canada.

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The 2002 Immigration and Refugee Protection Act (IRPA) introduced changes to the FSWP that further stressed the long-term potential of economic immigrants by giving more weight to education and age. This reform also gave more weight to language and employment history, which enhance labour-market performance, especially in the short term.

A growing share of Canada's annual permanent residence admissions has come from the Provincial Nominee Program (PNP), increasing from 1% of economic immigrants when introduced in 1999 to 25% in 2012. Under the PNP provinces and territories nominate prospective immigrants to address regional economic immigration objectives. These nominees then apply to Citizenship and Immigration Canada (CIC) for permanent residence. Ministerial instructions, which allow CIC to place priority selection on particular occupations, are also driven mostly by occupational demand based on available labour market information. Other programmes introduced to respond more to current labour-market conditions include the Canadian Experience Class (CEC) introduced in 2008 to facilitate the

transition of skilled temporary residents with Canadian work and/or study experience to permanent residents (although permitted numbers are low – for example, only 200 per year for Alberta) and the newly created Federal Skilled Trades Program (FSTP), which aims specifically to reduce labour shortages in trades.

These new programmes achieved the goal of improving the economic outcomes of new immigrants at entry in the 2000s, interrupting the deterioration of recent decades. Still, relative to the Canadian born, earnings remain well below the levels of the 1970s (Picot, 2013). In the initial years after arrival, these new classes of immigrants had much higher average earnings than FSWP immigrants (Table 2.5). The earnings advantage for PNP and CEC immigrants was mainly attributable to their greater Canadian work experience prior to becoming immigrants and to pre-arranged jobs, while for FST immigrants the advantage probably resulted from strong demand in their intended occupations. However, as shown by the Statistics Canada internal analysis presented in the table below, the earnings advantage of these new categories of immigrants dissipates rapidly, so that by five or six years after arrival they no longer have an advantage over FSWP immigrants. Considering the continued rise in the earnings premium for immigrants with high human capital beyond this period (see Figure 2.16), it is likely that FSWP immigrants will have an earnings advantage over the longer run. This highlights the tension that can exist between taking immigrants whose skills are in high short-term demand and the longer-term goal of having immigrants with high long-term earnings potential.

Table 2.5. **Earnings differences among immigrant categories**

Differences in log earnings from Federal Skilled Workers Program

	Landed in 2002-04		Landed in 2009
	After 1-2 years	After 5-6 years	First full year after landing
Observed			
Federal skilled trades (derived)	0.208***	0.007	0.403***
Provincial nominees	0.370***	0.056*	0.379***
Canadian experience class	n.a.	n.a.	0.445***
Federal skilled workers	Reference	Reference	Reference
Adjusted for differences in Canadian work experience and pre-arranged jobs			
Federal skilled trades (derived)	0.220***	0.009***	0.234***
Provincial nominees	0.112***	-0.099***	0.228***
Canadian experience class	n.a.	n.a.	-0.032
Federal skilled workers	Reference	Reference	Reference

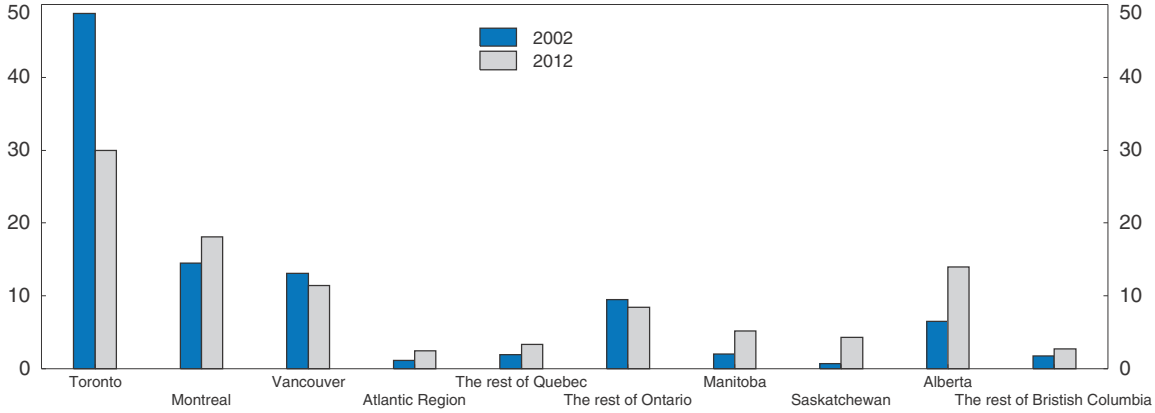
Note: * significant at $p < 0.05$; ** $p<0.01$; *** significant at $p < 0.001$

Source: Statistics Canada, *Longitudinal Immigrant Database*; internal Statistics Canada analysis.

The new programmes also contributed to an increased dispersion of new immigrants, with greater numbers heading to Prairie provinces, where labour-market conditions have been stronger than in the rest of the country (Figure 2.17). Between 2002 and 2012, the share of new immigrants going to Toronto fell from 49% to 30%, while the share going to the Prairie provinces increased by 15 percentage points. Statistics Canada analysis indicates that the PNP in particular was an important contributor to the increased regional dispersion of entering immigrants. The growing share of the PNP in Canadian economic immigration accounted for virtually the entire rising share of new immigrants going to Saskatchewan and Manitoba, and played an important role in Montreal and British Columbia outside Vancouver

Figure 2.17. **Immigrants' destinations within Canada**

Distribution of new immigrants in per cent



Source: Citizenship and Immigration Canada, *Facts and figures 2002 and 2012*.

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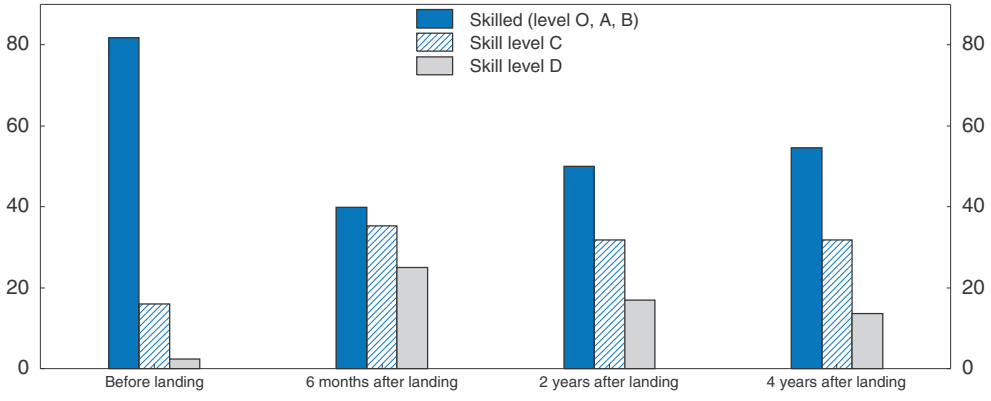
(but not Alberta). Contrasting economic and labour-market conditions in Toronto and the western provinces also contributed to the switch in immigrant destination to Calgary and Edmonton, as did the change in source regions (migrants often prefer to go where there is already an existing community from the same source country).

Integration of highly skilled immigrants, who often initially take less skilled jobs, is a major challenge (Figure 2.18). As noted above, their earnings premiums are lower than for Canadian-born workers and have not increased in fields where premiums have risen for the Canadian born. Immigrants since the early 1990s mostly derive low returns on their foreign experience and foreign education (Green and Worswick, 2009; Ferrer and Riddell, 2008). With the change in source countries since the early 1990s, many immigrants have

Figure 2.18. **Immigrants' jobs before and after arrival by skill levels**

Skill level of pre-migration jobs and post-migration jobs



Note: Immigrants who arrived in Canada during the year to 30 September 2001. Occupational skill levels as defined in the National Occupation Classification Matrix 2006. O corresponds to management occupations; A to occupations that usually require university education; B to occupations that usually require college education or apprenticeship training; C to occupations that usually require secondary education and/or occupation-specific training; and D, the lowest skill level, to occupations for which training is usually provided.

Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, Detailed information for 2005 (Wave 3).

StatLink http://dx.doi.org/10.1787/888933079269

inadequate proficiency in both of the official languages to perform well in highly skilled roles. Another factor is that education quality is often lower in the new countries of origin (Sweetman, 2004).

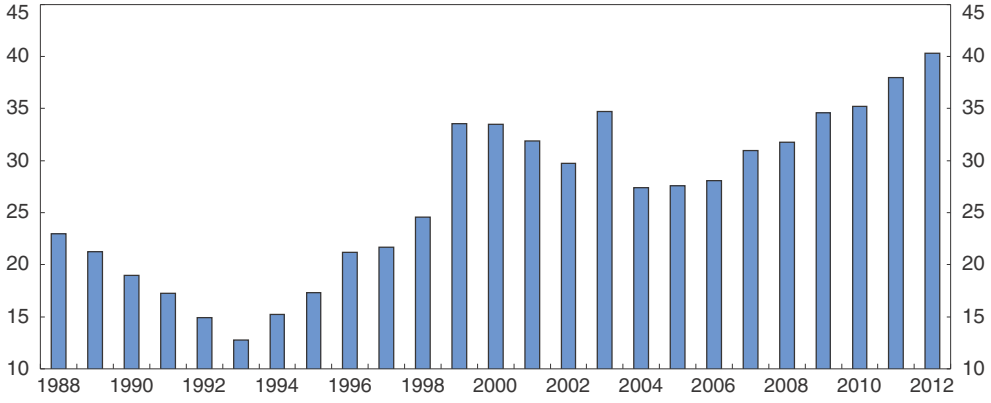
An important step to improve integration was the development of the *Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications* by the intergovernmental Forum of Labour Market Ministers (2009). The purpose of the Framework is to articulate a new, joint vision for governments to take concerted action to improve the integration of immigrants and other internationally trained workers into the Canadian labour market. It builds on a variety of programmes to facilitate integration, including: the Foreign Credential Recognition Program, which offers financial support for projects that facilitate the assessment and recognition of international credentials; the International Qualifications Network, which is an online professional community where employers, regulatory bodies, governments and organisations share best practices in foreign credentials assessment and recognition; Health Canada's Internationally Educated Health Care Professionals Initiative, which expands the assessment and integration of such people in seven priority professions; and the Canadian Immigrant Integration Program, which provides free pre-departure orientation to immigrants by providing information, planning and online support through partners in Canada. To reduce the probability that future immigrants encounter high barriers to integration the federal government introduced in May 2013 a requirement for applicants under the FSWP to supply assessments of their education credentials and proficiency in English or French. Even for immigrants who pass these assessments it will be important to maintain integration programmes, such as those funded by Labour Market Agreements: immigrants may not know technical terms in their fields in English or French and may lack understanding of cultural differences. At the same time, improvements to the FSWP points grid came into effect based on a large body of research, which has consistently shown that language proficiency and youth are two of the most important factors in the immigrants' economic success.

A major concern with the way that the economic programmes have been functioning in recent years is that it has not been possible to prioritise applications according to labour-market needs. Applications had to be processed in the order that they were received, and there was a large backlog of unprocessed applications (which by 2008 would have taken eight years to process). This meant that qualified applicants with skills in high demand could not be invited to immigrate if they were not at the head of the queue. To make the programmes more responsive to current labour-market conditions, in 2015 the federal government will introduce the Express Entry System, based on the Expression of Interest (EOI) model, following the examples of Australia and New Zealand. Individuals expressing an interest to enter Canada and meeting certain eligibility requirements will be placed in a pool and ranked on the basis of education, work experience, language ability and the requirements of the labour market. Candidates in the pool will be required to register with the national Job Bank and are directed to information on employment opportunities. They will also be encouraged to market themselves to employers through additional means. Employers can then be matched with potential immigrants from the pool to meet their labour needs, while provinces can search the pool to identify individuals for nomination. CIC will invite the best candidates, including those with in-demand skills, job offers, or provincial nominations to apply for a permanent resident visa. Express Entry candidates who are not chosen after a period of time will be removed from the pool.

The federal government began a major reform to the Temporary Foreign Worker (TFW) Program in 2013. While originally conceived to relieve short-term labour shortages in high-skilled occupations, this programme had increasingly focused on lower-skilled occupations. And it has grown phenomenally since its inception to a level that represents a large share of total immigration (Figure 2.19). In April 2013, the government announced that companies could no longer pay TFWs less than the prevailing wage rate. In June the government passed legislation establishing an application fee and giving officials more powers to inspect employers and to suspend or revoke previous approvals if they were based on false information. While there is general agreement about the need to return the scheme to its intended purpose, its increased usage may also be a consequence of insufficient progress with the current immigration system in meeting Canada's rapidly changing skilled-labour needs (Burleton et al., 2013).

Figure 2.19. **Usage of the Temporary Foreign Worker Program**

Entries as a percentage of new immigrants



Source: Citizenship and Immigration Canada, *Facts and figures 2002 and 2012*.

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While the reforms in the past decade culminating in the adoption of the Express Entry system increase the immigration system's capacity to respond to short-term skills shortages, care will need to be taken not to sacrifice the longer-term economic goals of immigration. Cyclical and structural changes and adjustments by firms and workers can reduce demand for occupations in high demand at the time of immigrant selection. Hence, if immigrants are to be selected to fill current skills shortages, it is imperative that they have the human capital necessary to adjust to economic change in the longer run (Picot, 2013). There is also much to be gained from strengthening integration of highly skilled immigrants so that they use their human capital to full capacity.

Reducing labour-mobility barriers would help ease skill shortages caused by geographic mismatches

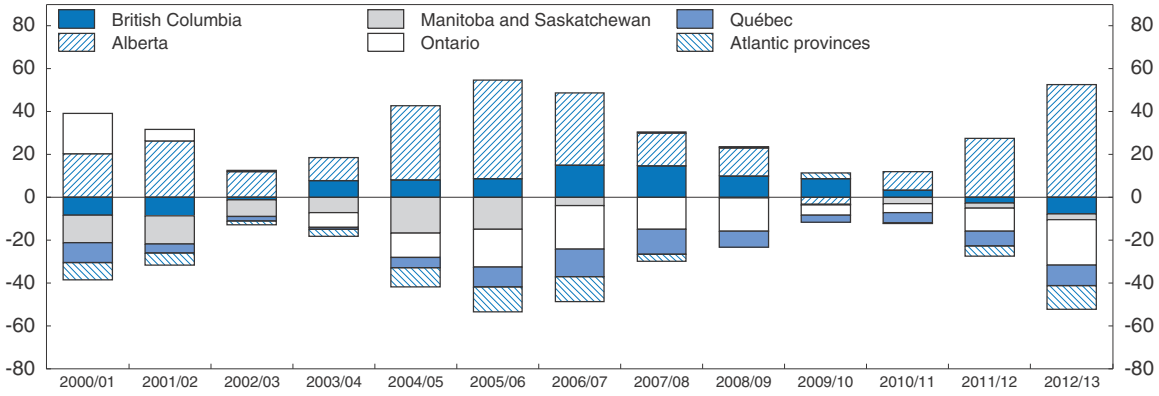
Labour mobility plays a comparatively large role in labour-market adjustment

Migration within Canada is an important labour-market adjustment mechanism. Internal migration flows are similar in Canada and the United States (Bayoumi et al., 2006). Indeed, migration flows appear to be the major long-term adjustment mechanism to sustained asymmetric labour-market shocks in Canada and the United States, but not in

euro-area countries. Bayoumi et al. (2006) also found that migration becomes a more important factor in labour-market adjustment as one moves west in Canada. An example is the way that Canadians have moved to Alberta in response to the energy-sector boom. By 2012/13, Alberta had an annual net inter-provincial migration gain of over 50 000, approaching the previous peak, while all other provinces except Saskatchewan had net outflows (Figure 2.20). It must be noted that given the large geographic area of Canada and many of its provinces, the majority of Canada's geographical labour mobility actually occurs within provincial borders – about 75% of Canada's labour flows involve movement within provinces, while the other 25% involve movement between provinces.

Figure 2.20. **Alberta has experienced large net inter-provincial immigration**

Thousands



Source: Statistics Canada.

How to read this figure: Each bar shows annual net inter-provincial migration flows by province/groups of provinces. Provinces/groups of provinces with a net inflow are shown with positive flows (e.g. Alberta and Ontario in 2000/01) while provinces/groups of provinces with net outflows are shown with negative flows (e.g. all the other provinces/groups in 2000/01). In the last two years, Alberta alone had a net inflow; Saskatchewan also had a net inflow but this is not visible in the figure because it is grouped with Manitoba, which had a larger net outflow.

StatLink http://dx.doi.org/10.1787/888933080010

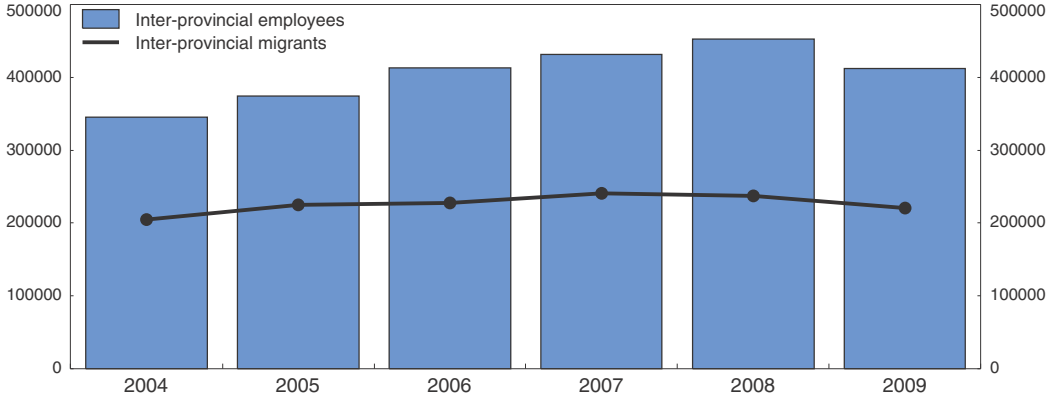
Migration flows understate the extent of inter-provincial labour mobility because there is also substantial inter-provincial employment, which is defined as individuals who commute to work in one province while maintaining their permanent residence in another (Figure 2.21). Each year, the total number of inter-provincial employees has exceeded the total number of new inter-provincial migrants – individuals who changed their province/territory of residence from one year to the next – by a wide margin. Given that about one half of inter-provincial employees in a given year are new, the flow of inter-provincial employees is comparable to that of inter-provincial migrants.

As a consequence of these flows, labour-market conditions are converging across provinces. In particular, the dispersion of employment rates has fallen steadily over the past three decades to similar rates as in the United States (Figure 2.22). This contrasts with the euro area, where the dispersion of employment rates has been increasing since 2004 to a level that is now considerably higher than in Canada.

Convergence of disposable incomes and employment rates is the main factor that underlies a decline in inter-provincial migration from about 1½ per cent of the population in the 1970s to about 1% in the mid-1990s, where the rate has broadly remained

Figure 2.21. **There are more inter-provincial employees than migrants**

Number of persons aged 18 and over



Note: Preliminary estimates for 2008 and 2009.
Source: Statistics Canada.

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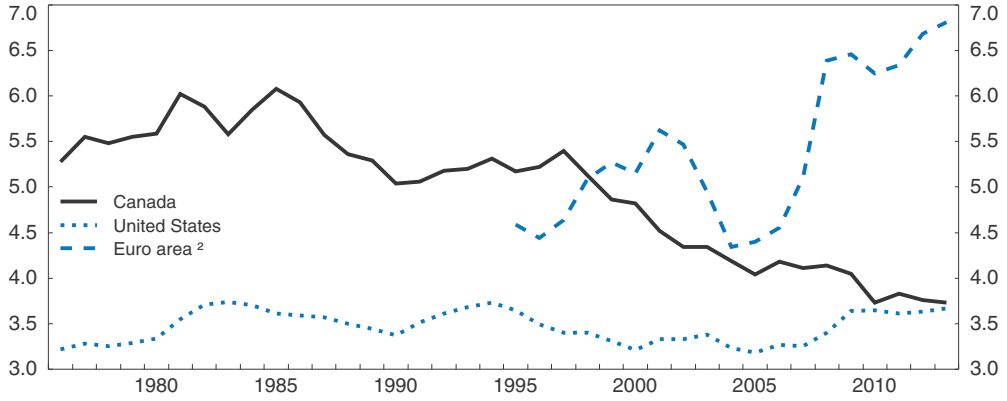
Figure 2.22. **The inter-provincial dispersion of employment rates has fallen considerably in Canada**

Mean absolute difference[1]



1. The mean absolute difference (MAD) is a dispersion measure which shows the sum of the absolute value of the difference between the employment rate of the US state/Canadian province/Euro-area country and the national average divided by the number of subnational units in the monetary union.
2. Eleven founding members (Austria, Belgium, Germany, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Spain and Portugal).

Source: Bank of Canada (2013), "Canada Works", speech given by Mark Carney, former governor (2008-13) of the Bank of Canada to the Chambre de commerce du Montréal métropolitain, in Montréal, Québec, on 21 May 2013.

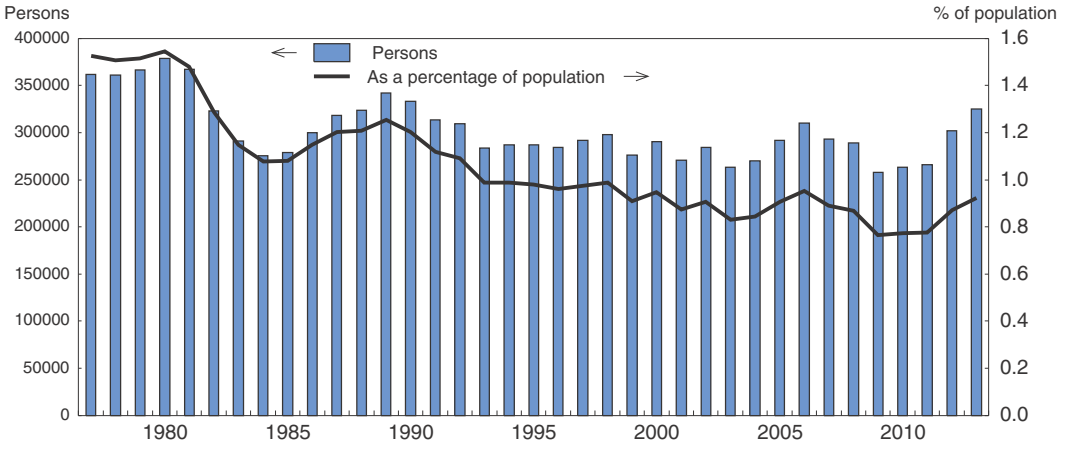
StatLink http://dx.doi.org/10.1787/888933080048

(Figure 2.23). Amirault et al. (2013) found that differences in employment rates and median household incomes help to explain Canadian migration patterns. Other important factors are population ageing and an increase in home ownership rates, which are negatively related to migration flows.

Despite the comparatively high level of geographical labour mobility and labour-market convergence that has occurred, there still appear to be inter-provincial barriers to mobility. Using sub-provincial data for economic regions, Amirault et al. (2013) found that provincial borders are negatively related to economic mobility. If barriers created by provincial borders

Figure 2.23. **Inter-provincial migration**

Total population



Source: Statistics Canada, CANSIM table 0510017.

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could be overcome, greater labour mobility would facilitate labour-market adjustment and possibly result in stronger productivity growth (Leung and Cao, 2009).

The Agreement on Internal Trade (AIT) has been made more effective

Canadian governments have taken a variety of steps over the years to reduce regulatory barriers to labour mobility across provincial borders. These barriers arise when people from one province have difficulty obtaining the professional or occupational license required to practice their profession or trade in another; approximately 20% of employment is in regulated fields (Grady and Macmillan, 2007). An important early measure was the harmonisation of qualification requirements and mutual recognition of qualifications for various Red Seal trades about 50 years ago. The Red Seal trades cover some 80% of trades qualifications. More recently, provincial governments agreed to reduce barriers to labour-market mobility more generally under the Agreement on Internal Trade (AIT), which came into force in 1995.

Initially, the AIT was not very effective. An official survey found that 35% of about 13 000 regulated workers who moved to a different province in 2004 did not have their qualifications recognised by the regulators in the destination province (Forum of Labour Market Ministers, 2005); for foreign trained workers the rejection rate was 49%. Some 8% of regulatory bodies said that they had failed to register applicants because they were not residents, and another 18% said that they had not changed regulations to accommodate all applicants who were qualified in other jurisdictions (Knox, 2010). In other words, nearly 10 years after the AIT came into force, many regulators had ignored their obligations under the original Labour Mobility Chapter, and provincial governments had not sought their compliance as they had undertaken to do.

In view of the disappointing AIT outcome, the difficulty of reaching a more effective agreement with all provinces quickly and the importance attached to inter-provincial labour mobility, British Columbia and Alberta reached their own more ambitious agreement (the Trade, Investment, and Labour Mobility Agreement, TILMA) in 2006 (Grady and Macmillan, 2007). The principal improvement in TILMA from the AIT was reciprocal recognition of workers' occupational credentials.

The AIT was strengthened in 2009, when the principle of certificate to certificate recognition was established in the new Chapter 7 (Labour Mobility). Its cornerstone is Article 706, which stipulates that any worker certified in an occupation by a regulatory authority in a province or territory will, upon application, be certified for that occupation by all other provinces or territories. Prior to the 2009 amendments, regulated workers moving from one province to another faced a wide range of barriers such as additional qualification requirements, re-examination and re-training. After the amendments, the burden of proof is in effect reversed from individual workers to regulators and is strengthened by recent AIT Dispute Resolution Panel decisions on Crane Operators (2012) and Public Accounting (2012). The decisions in these cases, brought originally by individuals, confirm both that jurisdictions cannot refuse to certify workers from other jurisdictions unless there is demonstrable evidence of risks to the public (e.g. risks to health and safety), and that differences in educational standards and length of training between jurisdictions do not, by themselves, justify restrictions on labour mobility. However, provinces and territories continue to have the right, under certain conditions, to recommend additional requirements to meet special circumstances. Where significant differences in skills, areas of knowledge or abilities exist, a government may approve an exception to full labour mobility for an occupation (i.e. maintain additional certification conditions for a worker in that occupation, even if the worker is certified elsewhere). Justification for an exception must be clearly documented, must be approved by the relevant government and must be publicly posted to comply with Chapter 7 obligations to ensure regulators and individual workers have access to the requirements in a given occupation across jurisdictions. There are currently 44 exceptions posted across 14 professions, which is low given the hundreds of regulated occupations.

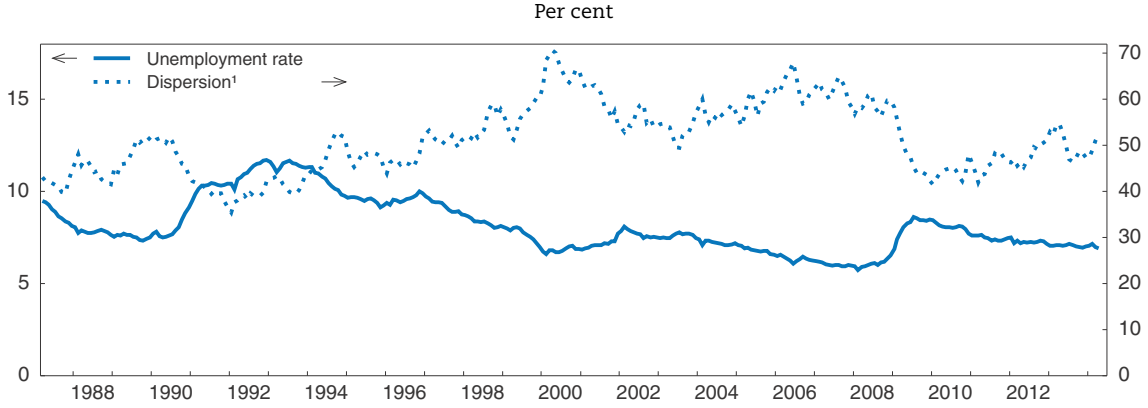
However, the fact that only two cases have ever been brought before the Panel, despite the findings reported above that many regulated workers moving province have had their qualifications rejected by the receiving province, raises doubts about the Panel's accessibility. Moreover, these cases took a long time to resolve – three years for Crane Operators and 10 years for Public Accountants. An investigation should be made to identify barriers to accessibility and how they can be reduced. Steps should also be taken to expedite cases more quickly.

Incentives for long-term EI dependence in high unemployment regions

While the regional dispersion of unemployment rates might be expected to decline in the long term as workers move from high- to low-unemployment regions, this has not occurred (Figure 2.24). This may be partly because the Employment Insurance (EI) scheme provides incentives for seasonal work in high-unemployment regions, where contribution periods to qualify are shorter and maximum benefit periods longer than elsewhere (Riddell and Kuhn, 2010). EI effectively subsidises workers to remain in seasonal jobs that would not otherwise provide an acceptable annual income for many such workers, instead of moving to full-time work elsewhere. However, some research has shown that EI receipt is not a primary factor in decisions to migrate.

The EI programme has long required claimants to conduct reasonable job search and accept a reasonable offer of suitable work to avoid EI benefit suspension. New EI rules that clarify what a reasonable job search for suitable employment means came into effect at the beginning of 2013. As benefit duration increases, claimants are required to expand their job search and reduce restrictions with regard to acceptable type of work and earnings. Those

Figure 2.24. **Unemployment and its regional dispersion**



1. The dispersion measure is the coefficient of variation (standard deviation divided by the mean) across 69 regions of Canada.

Source: Statistics Canada, CANSIM table 2820054 and OECD calculations.

StatLink http://dx.doi.org/10.1787/888933079288

claimants who make frequent use of the EI programme are subject from the beginning of their claim to more expanded job search criteria. While it is clearly too early to assess the effects of these changes, they may reduce the incidence of EI use by seasonal workers. However, the effects are likely to be greater in Ontario and Quebec, where an acceptable job offer is more likely to be forthcoming than in the rural parts of the Atlantic provinces. If the reform proves ineffective overall, it could be worth introducing experience-rated EI premiums for employers (whereby their contribution rates depend on their past record of laying off workers), as suggested in the 2008 *Survey*. Such a reform would increase contribution rates for seasonal workers, giving them a clearer signal to move to obtain year-round employment if seasonal employment does not provide an acceptable annual income. This reform could be supported by better access to training opportunities including EI support while in training for seasonal workers who want to retrain to obtain year-round employment.

Recommendations to reduce skills shortages

Key recommendations

- Build on announced new measures to provide better information on expected returns to post-secondary education to improve students' study choices.
- Strengthen the single market for labour by making the Agreement on Internal Trade Dispute Resolution Panel more accessible and expediting its procedures. In addition, continue to work with provinces and territories to harmonise training and certification requirements of all apprenticeship programmes across the country to increase completion rates and inter-provincial mobility of apprentices.
- If recent Employment-Insurance reforms do not clearly cut repeat use, adopt experience-rated premiums and enhance opportunities for seasonal workers to retrain.

Other recommendations

- 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.

Recommendations to reduce skills shortages *(cont.)*

Other recommendations

- Reduce the incidence of weak numeracy or literacy skills being a barrier to post-secondary education completion, perhaps by requiring students to study mathematics and English/French until the end of secondary school or by investing in remedial education in post-secondary education institutions.
- Increase experiential-learning components of university programmes to develop the soft skills sought by employers.
- Sustain programmes for immigrants to complement their foreign credentials and become qualified to local standards.

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