



# OECD Economic Surveys CANADA

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OVERVIEW



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# Summary

**The economy withstood the global economic crisis thanks to a timely macroeconomic policy response and a solid banking sector.** Although strong profits in the mining and oil sectors have supported business investment, employment growth slowed in the autumn and winter, and confidence weakened, largely reflecting temporary factors. The latest indicators suggest the economy is picking up, and the outlook is for continued moderate output growth and inflation in 2012-13. However, record low mortgage rates have pushed house prices up substantially in some cities, and boosted household indebtedness, which poses an increasing risk.

**Monetary policy remains appropriately accommodative given persistent global headwinds and associated risks and the withdrawal of fiscal stimulus, but it should stand ready to react to signs of a pickup in inflation.** Price pressures are evident in housing and sectors related to mineral extraction, while core inflation is running at about 2%. To moderate growth in house prices, macro-prudential measures such as stricter standards for government-backed mortgage insurance have been implemented and may have to go further. The 2012 federal budget features significant public spending cuts designed to achieve budget balance by 2015-16. Even larger efforts are being made in some provincial budgets, notably Ontario's. This tightening is necessary to reduce the debt overhang resulting from the past recession and stimulus measures, but the authorities should slow the pace of consolidation if significant downside risks to growth materialise.

**Boosting innovation can raise historically weak productivity growth to sustain living standards.** Indeed, innovation is high on the government's agenda. While Canada has made great strides in macroeconomic and structural policy settings, and its academic research is world class, the pay-off in terms of business innovation and productivity growth has not been large. Business R&D is particularly low, despite significant policy support, suggesting substantial scope for improvement. Competitive pressures, which spur innovation, have recently intensified because of the high exchange rate, but further market opening in sheltered sectors like network industries and professional services would be beneficial. Reforms are needed to improve knowledge flows to business and strengthen the process of commercialisation. Government support to R&D should focus more on sharpening incentives and raising performance; the higher current tax subsidy rate for small domestic firms should be unified at the lower large firm rate to encourage firms to attain the scale needed to adopt innovations. Savings could be used to keep capital costs in the eligible base to avoid creating distortions across different technologies.

**Improvements in tertiary education will also be critical to support socially inclusive growth in a knowledge-driven economy.** While the tertiary system generally performs well, generating high attainment among the working-age population, participation at the tertiary level will need to continue growing to maintain the supply of highly skilled labour as the population ages. Further improving equity of access by reducing non-financial barriers and increasing targeted need-based financial assistance – funded by reduced education tax credits where public finances are constrained – and by fostering a more flexible system that facilitates lifelong learning along a diverse range of student pathways is a priority. Efforts should be increased to recruit foreign tertiary students and integrate them into the workforce upon graduation. Universities make strong contributions to research, but teaching relies increasingly on large class sizes and sessional lecturers. Governments should consider greater differentiation across institutions as regards research versus teaching. Greater integration of technical, business, communications and industry training within tertiary programmes could contribute to innovation and improving graduate skills.

# Assessment and recommendations

## Overview

Canada weathered the global economic crisis well, mainly reflecting sustained growth in domestic demand, and the economy is continuing to grow despite the persistence of international turbulence, most recently stemming from the euro zone sovereign debt crisis. In Canada's case, several factors are acting in its favour. Federal fiscal plans are seen by markets as credible, favouring low borrowing costs. The banking system is sound and required no taxpayer bailouts during the 2008-09 crisis. Comparatively strong growth among emerging market economies has shifted global purchasing power to commodity exporters like Canada *via* both higher export prices and stronger currencies. Nevertheless, uncertainty regarding the global situation and risk-averse financial markets are a drag on business confidence and investment, while prolonged low interest rates could push mortgage-debt and house prices higher from already elevated levels, at least in some large cities.

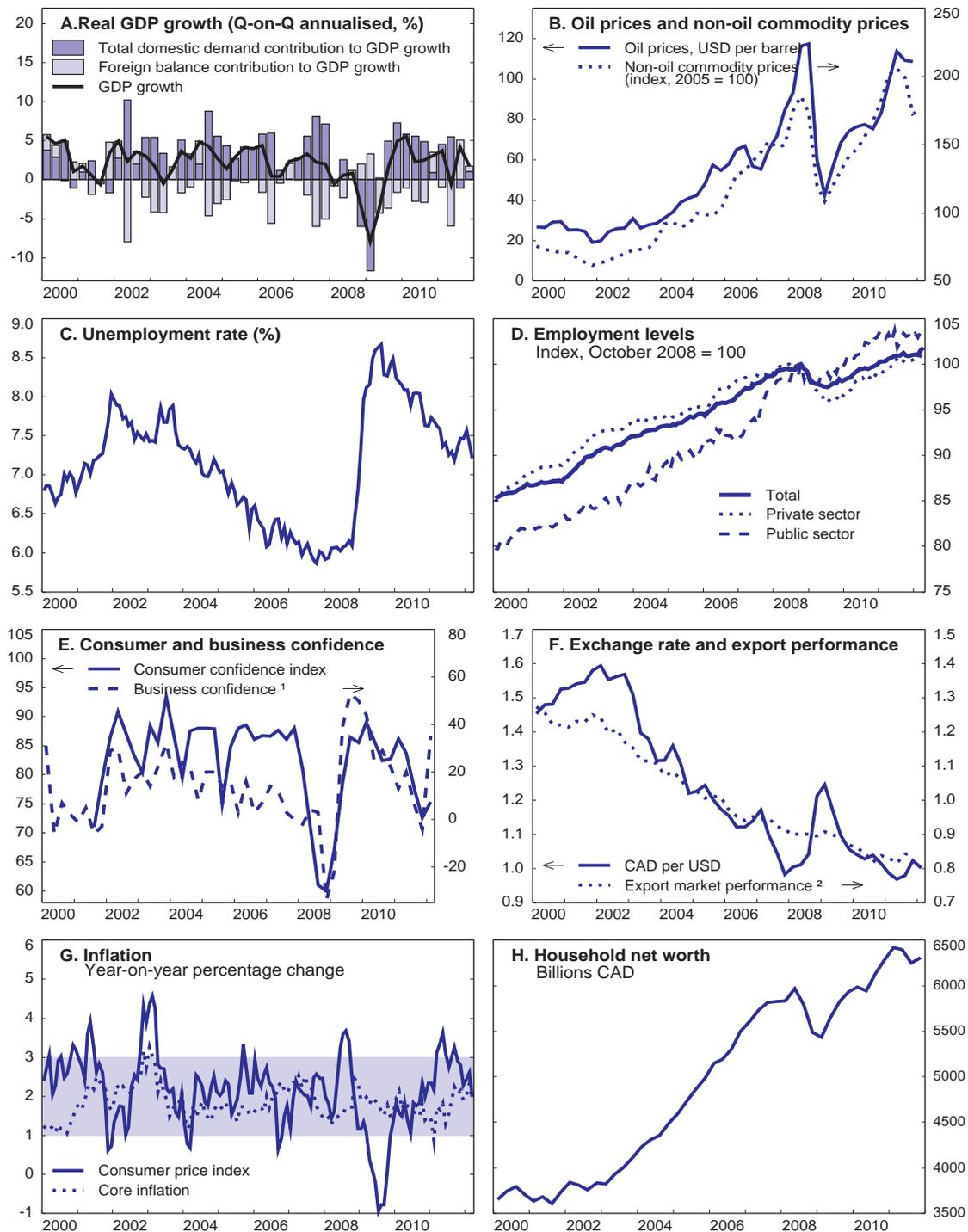
Canada enjoys strong institutions and policy credibility, but for many years its economic growth has relied mainly on increasing labour and capital inputs. By contrast, growth of multi-factor productivity (MFP) has been weak and declined further in the past decade. Innovation indicators such as business R&D and patenting rates are poor. Boosting innovation is an important and well established way of raising MFP growth, which is in turn needed to sustain rising living standards, especially as the population ages.

The overarching theme of this *Survey* is improving the policy framework for innovation, including in particular by strengthening the role of the tertiary education sector. Chapter 1 considers how to raise business innovation and concludes that increased service-sector competition and better design of public support, including less reliance on tax credits, would help. Chapter 2 considers policies to expand the supply of highly skilled workers and enhance the performance of Canada's many tertiary education institutions to better meet the economy's skill needs for innovation and growth.

## Macroeconomic developments

The Canadian economy recovered from the 2008-09 global economic crisis relatively quickly thanks to timely monetary and fiscal stimulus, a sound financial system and high commodity prices (Figure 1, Panel B). Unemployment has fallen substantially since the recession peak and is now near its long-term average rate as well as OECD estimates of its structural rate (Panel C), and real business investment and corporate profit margins have been restored to pre-crisis levels. The economic expansion experienced a soft patch in late 2011 and again early in 2012, largely reflecting temporary factors. Employment stagnated from summer 2011 for about six months, with particular weakness in the public sector (Panel D), unemployment crept up, and heightened uncertainty in global financial markets surrounding the European sovereign debt crisis eroded confidence (Panel E). But high frequency indicators and fairly easy business credit conditions point to somewhat stronger economic growth going forward.

Figure 1. Economic indicators

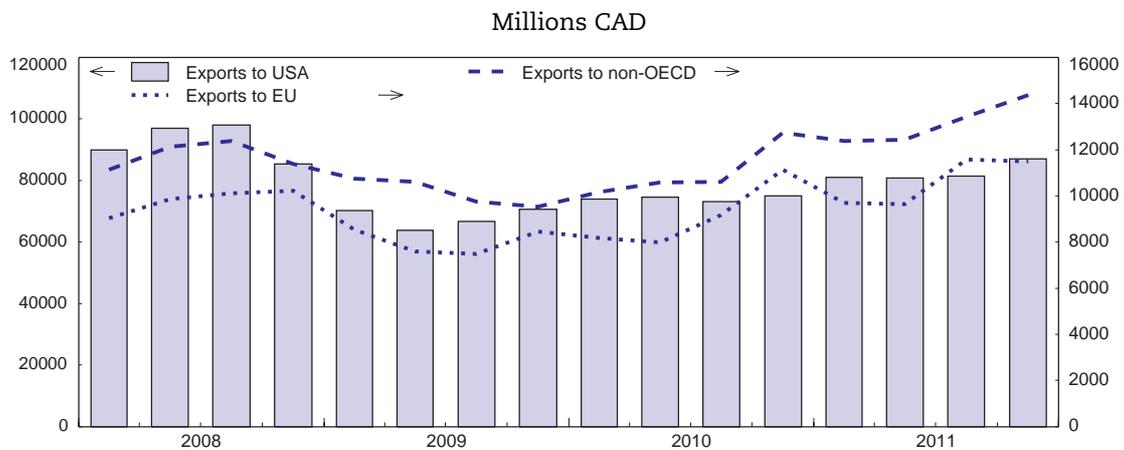


1. Measured as the percentage of firms expecting higher future sales growth over the next 12 months minus the percentage expecting less, from the Bank of Canada's Business Outlook Survey.
2. Ratio of export volumes to the size of export markets (defined as the trade-weighted average of trading partners' imports).

Source: Thomson Reuters; OECD, OECD *Economic Outlook 91* database; OECD calculations.

Merchandise exports to the United States have recovered about 75% of their decline since the 2008 peak, and those to emerging market economies have far surpassed their pre-crisis levels (Figure 2). Moreover, robust growth in emerging market economies has propelled a large part of the surge in demand for Canadian commodity exports over the past decade. Goods sold to non-OECD countries now account for almost 10% of the total value of merchandise exports, up from 5% in 2000, whereas the US share has shrunk from about 84% to 72% over the same period. The Canadian dollar has appreciated significantly in the past 10 years and remains strong both against the US dollar and on a trade-weighted basis. This appears to be largely explained by sharp increases in commodity prices, especially for energy (Cayen *et al.*, 2010). The appreciation has contributed to a worsening of the current account balance from a surplus of around 2% of GDP in the early 2000s to a deficit of near 3% of GDP in recent years.

Figure 2. Merchandise exports by region

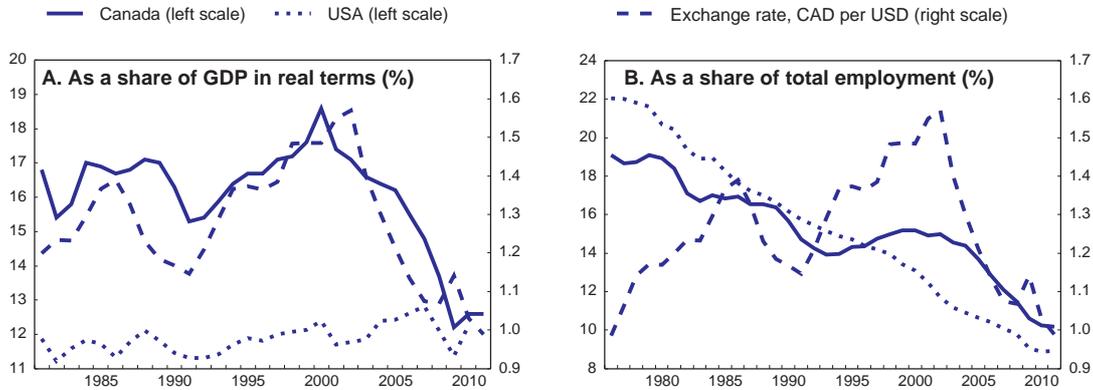


Source: Statistics Canada.

The economy continues to undergo structural adjustments due to these persistent relative price movements since the early 2000s. The export-oriented manufacturing sector had by 2011 shrunk sharply to only 12.6% of total value added, down from a peak of 18.6% in 2000. Its share of employment has also fallen substantially over the past decade (from 15.2% to 10.2%), and somewhat more than in the United States (Figure 3). Both outcomes have been clearly correlated with exchange-rate developments. Regional growth disparities – based on a real disposable income per capita measure – mirror these divergences in sectoral activity: the resource-rich provinces of Alberta, Saskatchewan, and Newfoundland and Labrador have enjoyed the largest per capita income gains during the past decade (Figure 4), whereas growth has been more sluggish in the manufacturing centre of Ontario. Much of Alberta’s strength has been attributable to population increases due to employment opportunities. Alberta remains the most affluent province, thanks to its energy wealth. Strong prices for energy and other primary commodities are likely to persist, given the gradual recovery in world growth and continuing turmoil in the Middle East.

Figure 3. **The share of manufacturing in the Canadian economy is heavily influenced by the exchange rate**

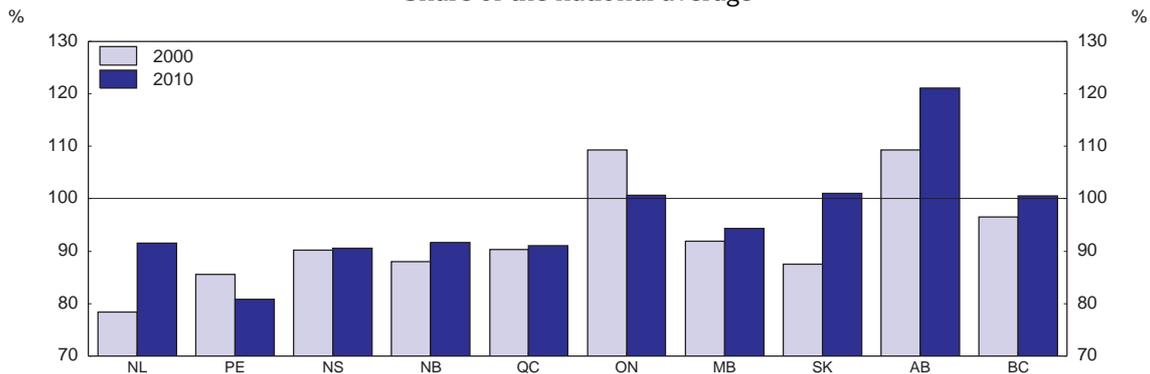
Canada versus the United States



Source: Bureau of Economic Analysis; Bureau of Labor Statistics; Statistics Canada; and OECD calculations.

Figure 4. **The shifting pattern of real per capita incomes across the provinces<sup>1</sup>**

Share of the national average



1. Nominal disposable income per capita by province deflated by the consumer price index of each province.

Source: Statistics Canada.

The short-term outlook is for relatively moderate economic growth at just above potential rates and a slight upward tilt as external demand becomes increasingly supportive (Table 1). The fragile US recovery and problems in the euro area, along with the strong Canadian dollar, will limit export growth, although high commodity prices should continue to bolster corporate profits in the energy sector, which, together with the low cost of capital, should support business investment. Planned fiscal consolidation will be beneficial for market confidence and for longer-term sustainability but could weaken domestic demand. Household net worth has declined with weak equity prices (Figure 1, Panel H), which is, along with the moderate pace of job creation and projected tighter lending conditions, likely to restrain private consumption growth. Nevertheless, private consumption and investment will continue to be the main drivers of growth.

Although strong gains in world food and energy prices, and the effect of the introduction of the Harmonized Sales Tax (HST) in Ontario and British Columbia in the third quarter of 2010, held headline year-on-year inflation near the 3% upper limit of the Bank of Canada's target range for much of 2011, inflation expectations have remained anchored at close to the 2% midpoint. Headline inflation has eased since the end of 2011, while core

inflation has edged up to around 2%, and the wedge between the two has been eliminated (Figure 1, Panel G).

Table 1. **Short-term projections**  
Annual percentage change, volume (chained 2002 Canadian dollars)

	2008	2009	2010	2011	2012	2013
<b>Demand and output</b>						
GDP at market prices	0.7	-2.8	3.2	2.5	2.2	2.6
Private consumption	3.0	0.4	3.3	2.2	2.4	2.9
Government consumption	4.4	3.6	2.4	1.2	0.2	-0.5
Gross fixed capital formation	2.0	-13.0	10.0	6.9	3.9	5.0
Public	8.1	8.6	18.2	-3.0	-7.1	-0.5
Private residential	-3.3	-7.8	10.1	2.3	3.7	2.6
Private non-residential	3.7	-20.8	7.3	13.7	7.1	7.2
Stockbuilding <sup>1</sup>	-0.2	-0.7	0.6	0.2	-0.3	0.0
Total domestic demand	2.8	-2.8	5.2	3.2	2.0	2.7
Export of goods and services	-4.7	-13.8	6.4	4.4	5.2	6.2
Imports of goods and services	1.5	-13.4	13.1	6.5	4.3	6.3
Net exports <sup>1</sup>	-2.2	0.0	-2.0	-0.8	0.2	-0.1
<b>Prices and employment</b>						
GDP deflator	4.1	-1.9	2.9	3.3	2.2	1.8
Consumer price index	2.4	0.3	1.8	2.9	2.3	2.2
Underlying price index	1.7	1.8	1.7	1.7	2.1	2.0
Total employment	1.7	-1.6	1.4	1.5	1.1	1.1
Unemployment rate	6.1	8.3	8.0	7.5	6.9	6.6
<i>Memorandum items:</i>						
General government financial balance <sup>2</sup>	-0.4	-4.9	-5.6	-4.5	-3.5	-2.4
Cyclically adjusted government primary balance <sup>2</sup>	-0.9	-3.0	-4.2	-3.7	-2.9	-2.1
General government gross debt <sup>2</sup>	71.2	82.4	84.0	83.8	84.5	81.4
General government net debt <sup>2</sup>	22.8	28.5	30.6	33.3	35.3	36.3
Short-term interest rate	3.5	0.8	0.8	1.2	1.3	2.1
Current account balance <sup>2</sup>	0.3	-3.0	-3.1	-2.8	-2.4	-2.3
Output gap (per cent of potential GDP)	1.1	-3.1	-1.5	-1.1	-1.0	-0.6

1. Contributions to changes in real GDP (percentage of real GDP in previous year).

2. As a percentage of GDP.

Source: OECD, *Economic Outlook 91*, May 2012.

## Monetary and financial-market policies

### *A delicate balancing act for monetary policy*

To support the economic recovery, the Bank of Canada has appropriately maintained a highly accommodative stance by keeping its policy rate at 1.0% since September 2010. While the Bank has indicated that some modest withdrawal of the present monetary stimulus may become appropriate, the prolonged period of low interest rates raises concerns about the risks it presents for the financial system. The stance of monetary policy in the quarters ahead will have to balance the relatively strong cyclical position of the Canadian economy, compared to the United States and most of Europe, and the income effects of the favourable terms of trade against the predominance of downside risks to activity in the short term resulting from fiscal consolidation and the strong dollar. This balance of risks, in a context of moderate inflation and apparently well anchored inflation expectations, suggests that for now policy can afford to remain supportive of activity. However, as the year 2012 wears on, and if the downside risks fail to materialise, consideration will have to be given to withdrawing more stimulus by raising policy rates. The need for such actions, conditional on continued reduction in economic slack, will increase as time goes by.

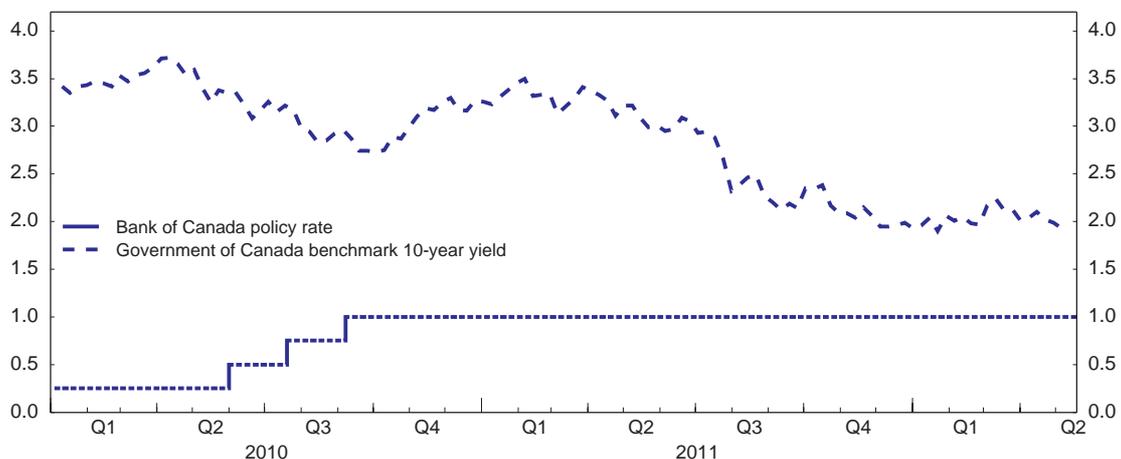
### *The inflation-targeting framework has proven effective*

At the end of 2011, the Bank of Canada together with the federal government renewed the inflation-targeting framework for an additional five years, maintaining the target at 2%. This monetary framework enjoys a high degree of credibility, and inflation has remained close to the target of 2% since 1995. Among other reasons, the 2010 OECD *Economic Survey of Canada* had argued that a significant regime shift to price-level targeting could add to market uncertainties and would thus be undesirable in the context of still rising government debt and precarious global economic prospects.

Slowing global growth and, more particularly, the European sovereign debt crisis are additional factors that have amplified risks to financial stability. Though Canadian banks have little direct exposure to the vulnerable euro area countries, a major shock could have detrimental indirect effects through lower equity prices and higher funding costs. Wholesale funding is an important component of bank funding in Canada (about 30%), though this share has decreased somewhat in recent years (Bank of Canada, 2011). Fears over credit risk may reduce access to such funding, as occurred during the 2008-09 financial crisis, and lead to a renewed tightening of credit availability. Such developments could depress economic activity and generate increasing loan losses in a negative feedback loop.

Long-term interest rates have declined markedly since spring 2011 (Figure 5), which is putting strains on institutional investors. The solvency of Canadian pension funds has been pushed towards all-time lows (Bank of Canada, 2011). Life insurance companies, which like pension funds have fixed liabilities, also suffer from low interest rates. This may result in imprudent risk-taking behaviour as financial institutions seek to boost investment returns, although reduced risk appetite in financial markets engendered by uncertainties in the global economy may act as a mitigating force. Nonetheless, greater vigilance will be needed to ensure pension reserves are sufficient to counter solvency risks.

Figure 5. **Interest rates**



Source: Statistics Canada and Bank of Canada.

### ***Housing-related debt presents risks to financial stability***

Although Canada's household indebtedness is close to the OECD average, it is high by historical standards, making households vulnerable to a possible decline in real estate prices. Growth in consumer credit has moderated since mid-2010 (Figure 6, Panel C). However, households have continued to increase borrowing at a faster pace than the rise in their disposable incomes, as they have done over the last 10 years, reflecting cheap mortgage rates and appreciating property prices. As a result, household debt has

accumulated to record levels (Panels D and E). Low interest rates are for now keeping mortgage debt-servicing affordable for most (Panel B), but the share of indebted households spending more than 40% of their income on interest payments remains above the 2000-10 average (Bank of Canada, 2011).

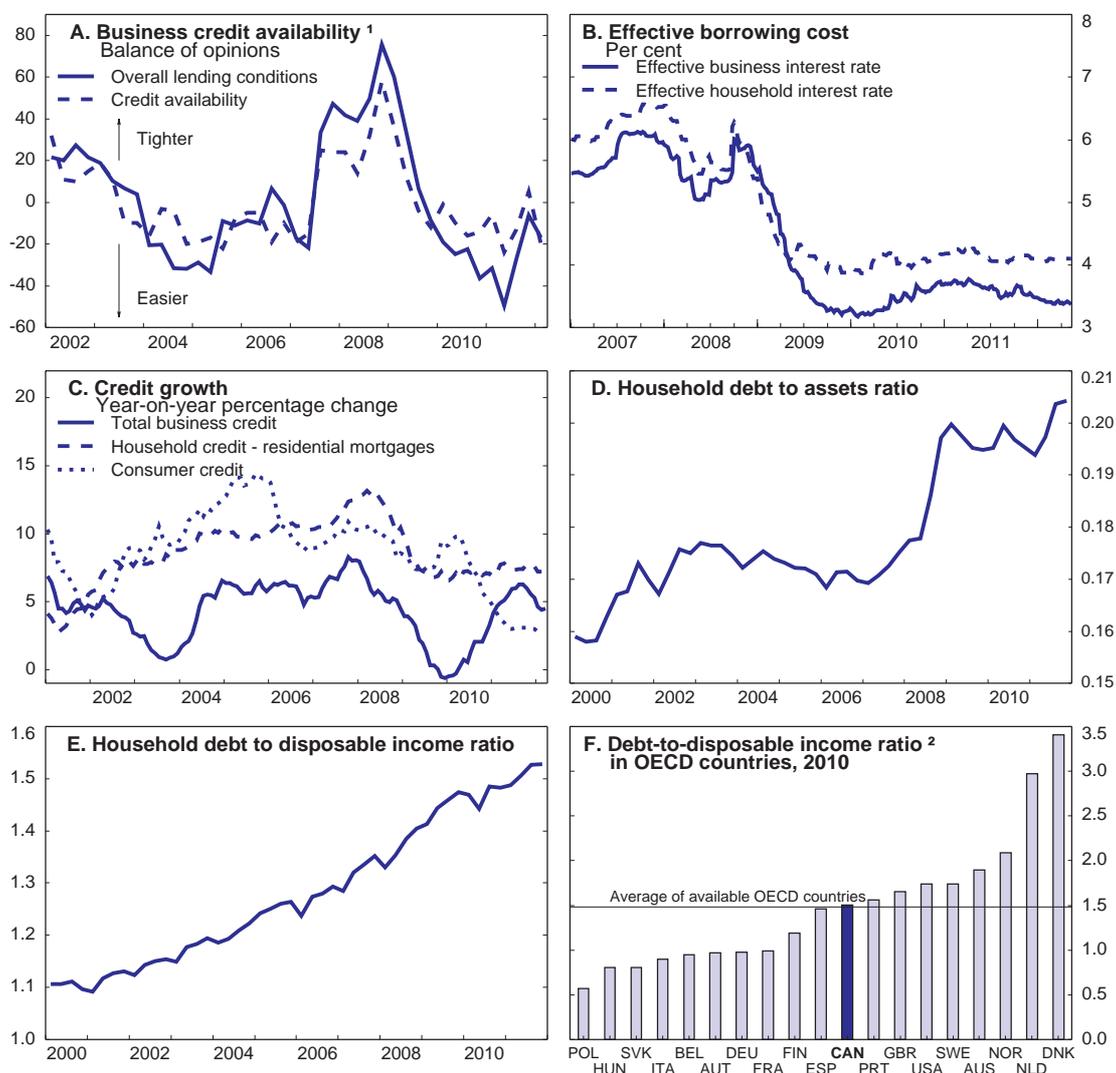
Canada experienced a significant increase in house prices in the run-up to the 2008 crisis, but unlike in many countries with a similar experience, notably the United States, Canadian house prices have continued to rise (Figure 7, Panel B). Residential investment declined only slightly as a share of output during the global financial crisis and has since rebounded to close to the pre-recession peak (Figure 7, Panel A) and looks set to rise further, at least over the short term, given the latest figures on housing starts. Indeed, the absence of a real estate collapse is an important reason for Canada's relatively good economic performance during the crisis. While there are some signs of market imbalances, they do not appear to be widespread but are concentrated in certain segments of the market (*i.e.* condominiums) and certain locations (Toronto and Vancouver). In particular, the stock of unoccupied multiple units has swelled (Figure 7, Panel F), even after accounting for increases in multiple units in the market.

Residential mortgages, including mortgage securitisations, accounted for about 52% of Canadian banks' total domestic-currency loans and asset securitisations at the end of 2011, up slightly from 48% at the end of 2007, as the former strong uptrend tapered off in recent years. While bank loan losses and non-performing loans remain low at 0.3% and 2% of the total stock, respectively, a negative shock to employment or economic growth, or an increase in interest rates, would impair households' ability to service their debts (FSB, 2012). Fortunately, the majority of mortgages are still held on originating banks' books rather than securitised, giving them strong incentives to employ sound underwriting standards.

Approximately seventy per cent of the residential mortgage market in Canada is backed by government guarantees in the case of default. Federally regulated financial institutions must purchase insurance on all mortgages with a loan-to-value (LTV) ratio above 80%, either from the Canada Mortgage and Housing Corporation (CMHC, an agency owned by the federal government) or a private insurer; and 90% of the value of privately insured mortgages is guaranteed by the federal government. Insuring high-LTV ratio mortgages through CMHC lowers their capital risk weight on banks' books from 35% to zero. If insurance is bought from a private insurer, the risk weight is only slightly higher (5%), given the 90% government guarantee. Government backing of a large portion of bank assets helped importantly to maintain the system's stability during the crisis but also implies that the public finances may be exposed in the event of a major shock to housing markets.

CMHC operates on a commercial basis with pricing set to generate commercial rates of return and to cover expected default rates. At the end of 2011, CMHC reported insurance in force totalling CAD 567 billion (34% of GDP). This makes CMHC one of Canada's largest financial institutions. Given its current legislated limit of CAD 600 billion, CMHC indicated in early 2012 that portfolio (bulk) mortgage insurance for low ratio mortgages (*i.e.* mortgages with down payments of 20% or higher) was being rationed due to unexpected requests for large amounts of coverage, a possible sign of perceived risks of substantial price declines by lenders. According to the government, this rationing should ensure that CMHC continues to operate within the limit on its mortgage insurance in force without constraining the availability of high LTV ratio mortgage insurance for qualified homebuyers.

Figure 6. Credit indicators

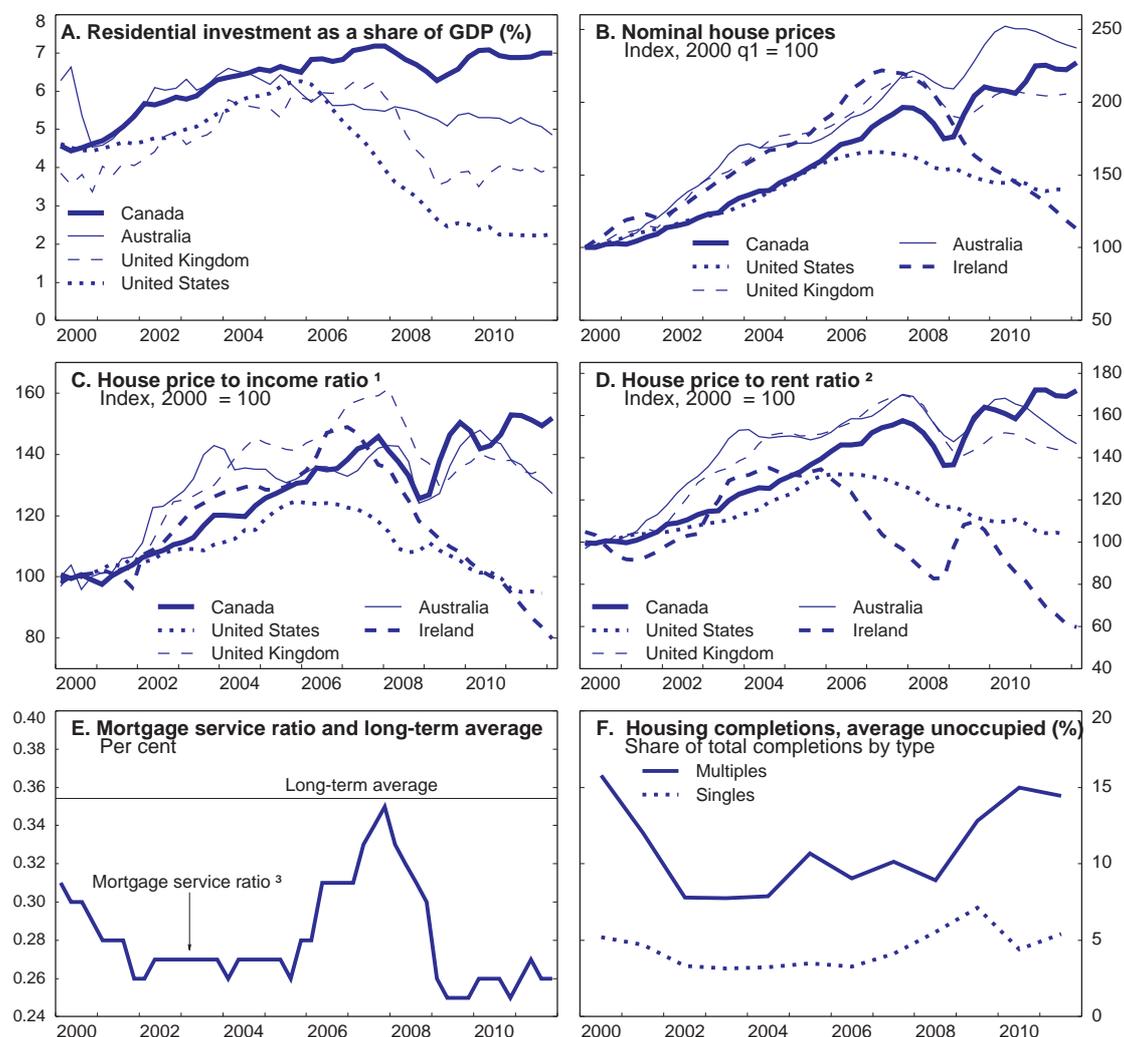


1. Percentage of financial institutions reporting tightened conditions/availability, minus percentage reporting eased conditions/availability.
2. Household and unincorporated business.

Source: Panel A : Bank of Canada, Overall lending conditions from Senior Loan Officers Survey and credit availability from Business Outlook Survey; Other panels: Statistics Canada, Cansim database; Bank of Canada; Thomson Reuters.

CMHC recently reported that almost 90% of the high-LTV borrowers insured had a high credit score, indicating a strong ability of a great majority of borrowers to manage their debt. Measures were recently announced as part of the 2012 federal budget to strengthen the governance and oversight framework of CMHC. Proposed legislative measures include authority for the Office of the Superintendent of Financial Institutions (OSFI) to review and monitor the safety and soundness of CMHC's commercial activities. This change is likely to bolster the credibility of both CMHC and Canadian prudential regulation.

Figure 7. Housing indicators



1. Nominal house prices divided by nominal disposable income per head.
2. Nominal house prices to rents.
3. The proportion of average personal disposable income per worker that goes towards mortgage payments on a quarterly basis based on current house prices and mortgage rates.

Source: Bank of Canada; CMHC, *Housing and Market Information*; Thomson Reuters; OECD, *OECD Economic Outlook 91* database; OECD calculations.

In recognition of the risks to financial stability posed by the housing sector, between October 2008 and April 2011 the federal government implemented a series of macro-prudential measures to tighten regulations of government-backed mortgage insurance. First, the maximum amortisation period for new mortgages was reduced in stages from 40 to 30 years. Maximum LTV ratios needed to qualify for government guarantees were lowered. Government-backed insurance was also withdrawn on home equity lines of credit, and requirements were imposed on minimum credit scores and loan documentation. Government-backed insurance also defines minimum qualifying interest rates which must be used in determining borrower eligibility for all variable rate loans and fixed rate loans under five years. These changes have helped to moderate household borrowing and cool the housing market. However, further measures may be needed –

possibly targeted on certain market segments – if imbalances persist. Indeed, OSFI just issued draft detailed guidelines for prudent residential mortgage underwriting by all federally regulated financial institutions.

### ***Reforms to financial supervision are in progress***

The Canadian authorities have taken welcome steps to address vulnerabilities in the financial system, while actively participating in international efforts to strengthen macro-prudential regulation through the Basel Committee on Banking Supervision of the BIS and the Financial Stability Board (FSB) of the G20. Canada's big six banks are expected to meet the Basel III requirements for a 7% common equity Tier 1 risk-adjusted capital ratio, including the capital conservation buffer, by 2013 (FSB, 2012). Canada will also implement a countercyclical capital buffer as required. Other measures include the expansion of OSFI resources for supervision and on-site inspections and implementation of regular system-wide joint stress testing by OSFI and the Bank of Canada. Accountability has been improved through revisions to the intervention and resolution regime, with recovery plans for the big six banks expected to be finalised in 2012. Implementation of Basel III requirements for minimum loss absorbency in Tier 1 capital should ensure banks fully absorb losses before taxpayers. Progress has also been made in restructuring asset-backed commercial paper and structured finance markets – which were severely impaired during the crisis – to enhance transparency and disclosure. Furthermore, regulation has been drafted to strengthen internal controls on credit rating agencies, which include procedures to identify conflicts of interest and prohibit the issuance of ratings where such conflicts exist.

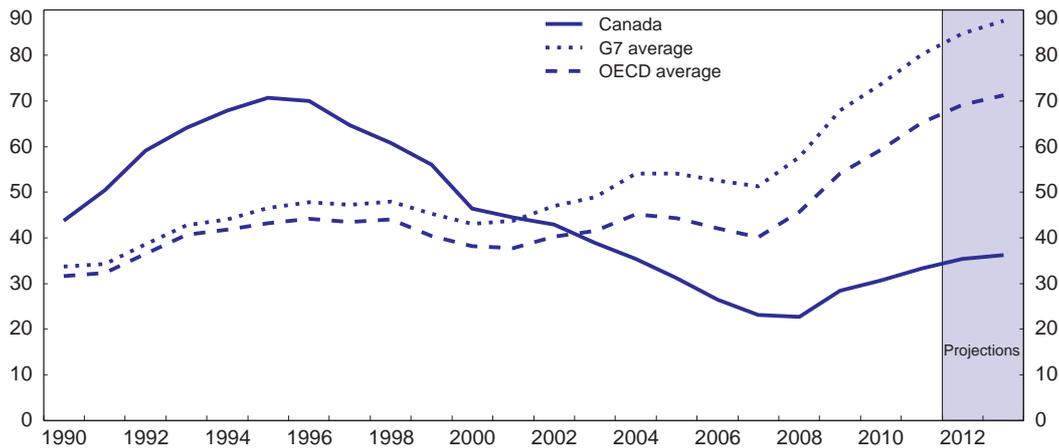
In securities markets, the federal government has made substantial efforts to create a single national securities regulator, consistent with recommendations made in the 2010 OECD *Economic Survey of Canada*. Progress was halted at the end of 2011, however, when the Supreme Court determined that the proposed legislation was not constitutionally valid under the general branch of the federal power to regulate trade and commerce. The Court also indicated that “[t]he common ground that emerges is that each level of government has jurisdiction over some aspects of the regulation of securities and each can work in collaboration with the other to carry out its responsibilities”. It recognised that federal jurisdiction could include the management of systemic risk and ensuring fair and efficient national capital markets. The federal government has since indicated that it is consulting with provinces and territories, and that a number of them have reaffirmed their interest in working on a cooperative basis towards establishing a common securities regulator. Moving in this direction would generate efficiency gains and improve the attractiveness of listing in Canada, as it would lead to a reduction in duplication and unnecessary regulatory burdens on market participants. Indeed, the “passport system”, adopted by all provinces except Ontario, has provided savings by allowing market participants to use one principal regulator for approval in all jurisdictions. However, the current structure of securities regulation remains fragmented and may imply gaps in the co-ordination of policy development and enforcement across borders, as noted by the FSB (2012).

### **Fiscal policies to support strong and inclusive long-term growth**

The economic downturn and resulting injection of stimulus (worth about 4% of GDP at the federal level) drove up gross and net government debt levels significantly. The general government balance deteriorated from a surplus of 1.4 % of GDP in 2007 to a deficit of 4.5% of GDP in 2011 (Table 1). As a result, general government gross debt expanded by about 20 percentage points of GDP to reach 85% of GDP by the end of 2011. Some of this rise was related to a non-budgetary transaction: the issuance of new federal debt to finance the acquisition of government-backed mortgage insurance bonds from the CMHC under the Insured Mortgage Purchase Program; progressive liquidation of these assets will, conversely, act to reduce the gross debt by CAD 2.4, 41.9 and 10.6 billion in 2012-13, 2013-14 and 2014-15, respectively. While the gross debt-to-GDP ratio is projected to fall to around three

quarters of the OECD average, net debt as a share of GDP may remain a little more than half of the OECD average by 2013 (Figure 8). This reflects the existence of relatively large general government financial assets: as at end 2011, the federal government held assets amounting to 15% of GDP; provincial and local governments; 35% of GDP; and the Canada/Quebec Pension Plan, 11% of GDP. Over 40% of total government financial asset holdings were claims largely in the form of equity and loans to commercial Crown corporations (e.g. CMHC, Farm Credit Canada and Business Development Bank of Canada).

Figure 8. Net government debt as per cent of GDP



Source: OECD, *OECD Economic Outlook 91* database.

### ***Federal fiscal consolidation is underway***

The federal government has begun to eliminate its deficit and expects to return to a balanced budget or better by 2015-16, based on reasonable economic assumptions (growth averaging 2.3% per year) and protected by CAD 3 billion in annual downward revenue adjustments to account for negative risks (Table 2). The result is that its projection for the federal net debt-to-GDP ratio peaks at 33.9% in 2012-13 and then falls by some six percentage points in the following four fiscal years. The speed of this consolidation is reasonable unless serious downside risks to growth materialise. If they do, Canada's low indebtedness and well earned reputation for fiscal probity allow it room to respond by slowing the pace of consolidation as needed.

The deficit-elimination strategy outlined in the 2012 budget continues to rely largely on spending cuts (some 82% of the cumulative savings of CAD 58.6 billion over seven years in the three latest budgets), without raising tax rates or cutting transfers to individuals or other levels of government. This involves curbing direct programme spending from 7.3% of GDP in 2010-11 to 5.5% in 2016-17, through near-zero increases in real terms for the five-year planning period) including unwinding stimulus measures. Departmental budgets will be cut by a total of some CAD 21 billion in the next five years culminating in CAD 5.2 billion in 2015-16. This represents 1.9% of total programme spending and will reduce federal employment by 19 200 (about 4.8% of the total, compared to 14.4% realised in the 1990s downsizing episode). The budget also proposed raising the retirement age to 65 for new federal employees as of 2013 and boosting the employee share of pension contributions to 50%.

Revenues are expected to rise by around 4.7% per year, only slightly faster than GDP. Part of the increase is cyclical, and part results from the semi-automatic increase in employers' and employees' Employment Insurance contribution rates that is required to balance that account following the recession-induced deficit incurred in recent years, even

though the government decided to slow the uptrend in such rates (at a budgetary cost of CAD 2.6 billion over five years).

Table 2. **The 2012 federal budget outlook**

CAD billions

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
<b>Budgetary revenues</b>	<b>237.1</b>	<b>248.0</b>	<b>255.0</b>	<b>270.4</b>	<b>285.5</b>	<b>300.0</b>	<b>312.5</b>
Per cent change	-2.1	1.0	1.4	1.7	1.8	3.1	2.6
Per cent of GDP	14.6	14.4	14.3	14.6	14.7	14.8	14.8
<b>Total expenditures</b>	<b>270.5</b>	<b>272.9</b>	<b>276.1</b>	<b>280.6</b>	<b>286.9</b>	<b>296.6</b>	<b>304.7</b>
Per cent change	-1.3	0.9	1.2	1.6	2.2	3.4	2.7
Per cent of GDP	16.7	15.9	15.5	15.1	14.8	14.6	14.4
<i>of which:</i>							
Major transfers to persons	68.1	68.5	72.2	75.5	78.1	81.0	84.0
Major transfers to other levels of government	53.0	56.9	58.4	60.3	62.8	65.6	68.5
Direct programme expenses	118.5	116.5	114.7	113.7	113.0	115.1	116.1
<i>of which:</i>							
Operating expenses	77.2	77.6	76.8	76.5	76.7	79.2	80.0
Public debt charges	30.9	31.0	30.8	31.1	33.0	34.9	36.1
<b>Budgetary balance</b>	<b>-33.4</b>	<b>-24.9</b>	<b>-21.1</b>	<b>-10.2</b>	<b>-1.3</b>	<b>3.4</b>	<b>7.8</b>
Per cent of GDP	-2.1	-1.4	-1.2	-0.5	-0.1	0.2	0.4
<b>Federal debt<sup>1</sup></b>	<b>550.3</b>	<b>581.3</b>	<b>602.4</b>	<b>612.5</b>	<b>613.9</b>	<b>610.4</b>	<b>602.6</b>
Per cent of GDP	33.9	33.8	33.9	33.0	31.6	30.1	28.5

1. This measure of debt is the federal government's accumulated deficit, which is a measure of its net worth, as it includes the value of federal non-financial as well as financial assets.

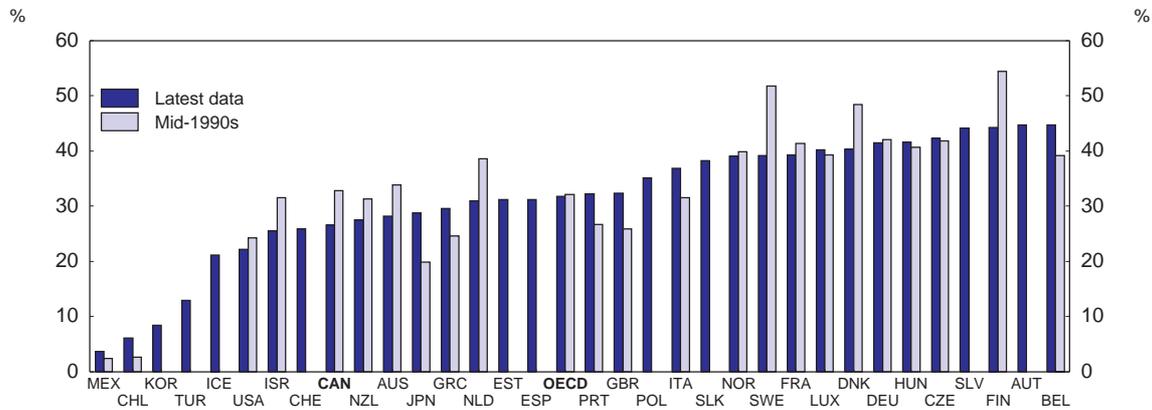
Source: Government of Canada, Budget 2012 and Finance Canada updates.

The focus on achieving consolidation largely on the spending side is appropriate. Studies have shown that fiscal consolidation tends to be more effective when expenditure restraint is used rather than measures to raise government revenues (Guichard *et al.*, 2007). Nevertheless, care will need to be taken to ensure that adequate social supports remain in place for vulnerable segments of society. At the aggregate level, the Gini coefficient suggests that market income inequality rose from the mid-1990s to the early 2000s and has remained relatively unchanged since then. While these inequalities are partially offset through the redistributive role of the tax and benefit system, OECD (2011c) finds that this effect has declined through time with roughly one-quarter of market income inequality being offset by redistribution, down from about one-third in the mid-1990s (Figure 9). And relative to its OECD counterparts, Canada's tax and benefit system is less redistributive. This is mainly due to the reduced role of means-tested benefits and transfers, and an increased emphasis on in-work incentives, rather than changes to the income tax system. The result is that after-tax, after-transfer income has become much more unequal, with, for example, the top 1% accounting for 10% of all income in 2007, up from only 6 to 7% up to the mid-1990s. Nevertheless, the share of Canadians living below the nation's low-income cut-off has fallen sharply, such that basic needs are being met for most.

Eliminating untargeted and ineffective tax expenditures should be considered as a way to expand fiscal space at both federal and provincial levels, while improving the efficiency and fairness of the tax system, as recommended in the chapter on taxation in the 2008 *OECD Economic Survey of Canada*. The federal government reports over 150 tax expenditure items, though its definition of what constitutes a tax expenditure is quite broad. These include beneficial tax credits for pension savings plans and the like, but also measures which tend to benefit wealthier households, such as the deduction for employee stock options, and favoured investors, such as flow-through shares for mining firms. The

2012 federal budget seeks to make a few changes in this vein that would save approximately CAD 2 billion in the next five years, primarily on the corporate side.

Figure 9. **Share of market-based income inequality offset by the tax and transfer system in OECD countries**



1. Difference between pre- and post-tax and transfer Gini coefficients as a share of the pre-tax and transfer Gini coefficient for the entire population in per cent.

Source: OECD.stat, Income distribution database.

### ***Promoting longer-term sustainability and inclusive growth***

Long-term demographic trends imply lower per capita GDP growth and increased spending pressure for health care, social services and income support for the elderly. The first pillar of the pension system – Old Age Security (OAS) and the Guaranteed Income Supplement (GIS) – is not likely to pose as significant a fiscal problem as in some other OECD countries, but spending, at 4½ per cent of GDP, is nevertheless projected to rise in the coming decades to 6¼ per cent of GDP (Whitehouse, 2010). The rationale behind the federal government’s decision in the recent budget to programme a gradual rise in the eligibility age for OAS and GIS benefits to 67 between 2023 and 2029 was to ensure that social programmes remain sustainable over the long term and reflect demographic realities. The policy change also introduced the option to defer take-up of the OAS pension for up to five years and receive a higher, actuarially adjusted, pension. This option will be available starting in July 2013, and the adjusted pension will be calculated on an actuarially neutral basis. It is clear that Canadians are being encouraged to work longer and save more themselves for their retirement.

Provincial governments face a more difficult task. Some face large structural deficits and still rising net debt to GDP ratios that will require resolute reforms to overcome (Table 3). While most intend to balance their budgets over the next several years, relying entirely on spending control, concerns over the Ontario government’s debt levels prompted a downward revision to the outlook for its credit rating at the end of 2011. Given lacklustre growth prospects, the government-appointed Commission on the Reform of Ontario’s Public Services (2012) reported that maintaining current fiscal policies could drive net debt to 51% of provincial GDP by 2017-18. It went on to identify 362 potential savings.

The Ontario government responded to the report in its 2012 budget with CAD 22 billion in deficit reduction over the next three years, about 80% of which would be achieved through spending restraint. Much of that will rely on wage freezes for civil servants, doctors and teachers, along with delaying the planned cut in corporate tax, freezing social assistance rates and slowing the rate of investment. The deficit – 2.4% of provincial GDP in 2011-12 – will be eliminated only in 2017-18 (and even that relies on spending increases

being held below 1% per year in the final two years of the planning horizon), but Ontario's net debt is expected to peak at 41.6% of its GDP in 2014-15 before falling back.

Table 3. **Aggregate provincial and territorial fiscal indicators**

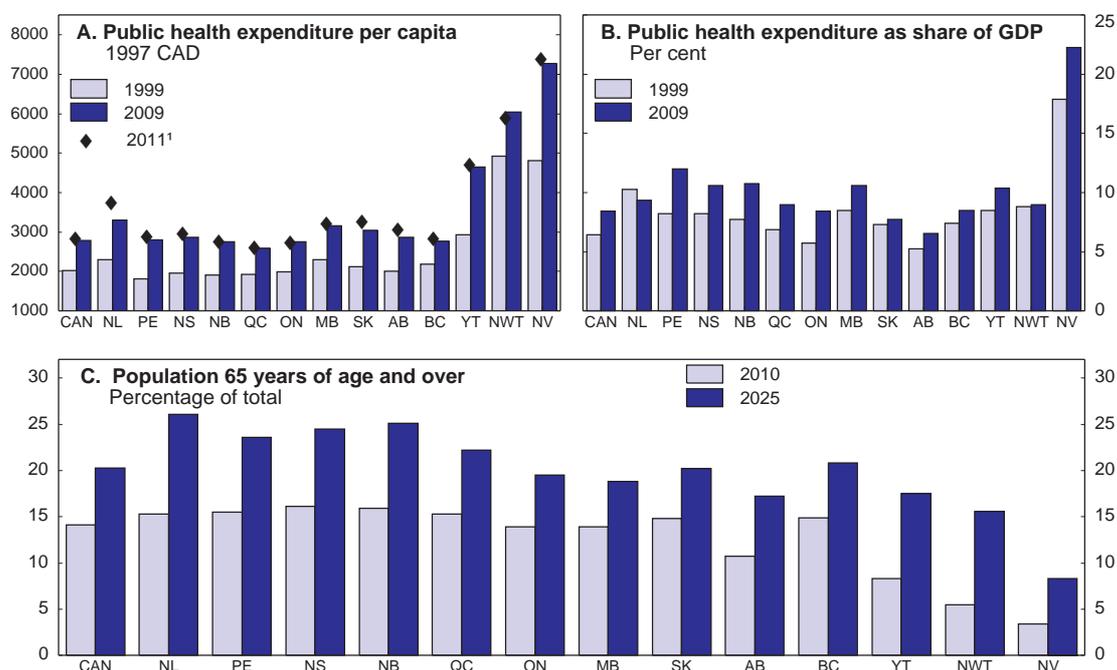
2012 budget estimates (Provincial public accounts basis)					
	Actual		Forecast		
	2010-11	2011-12	2012-13	2013-14	2014-15
Billions CAD					
<b>Revenue</b>	<b>299</b>	<b>310</b>	<b>320</b>	<b>334</b>	<b>349</b>
<i>of which:</i>					
Total own-source revenue	231	244	254	n.a.	n.a.
Federal transfers	68	66	65	n.a.	n.a.
<b>Expenditure</b>	<b>322</b>	<b>332</b>	<b>339</b>	<b>345</b>	<b>352</b>
Other factors	2	-1	-1	-1	-1
Surplus/Deficit(-) <sup>1</sup>	-21	-23	-19	-12	-4
Net debt	435	480	517	504	521
Per cent of GDP					
Total own-source revenue	14.2	14.2	13.9	N.A.	N.A.
Federal transfers	4.2	3.9	3.6	N.A.	N.A.
Total revenue	18.4	18.0	17.6	17.6	17.6
Total expenditure	19.8	19.3	18.7	18.2	17.7
Surplus/Deficit(-) <sup>1</sup>	-1.3	-1.3	-1.1	-0.6	-0.2
Net debt	26.8	27.9	28.5	n.a.	n.a.
<i>Memorandum items:</i>					
GDP (billions CAD) <sup>2</sup>	1 625	1 719	1 818	1 899	1 985
Annual per cent change <sup>2</sup>		5.8	5.7	4.4	4.5

1. Surplus/deficit is not equal to revenue minus expenditure because of small other factors not reported in the table.
2. Average private sector forecast surveyed by the Department of Finance Canada for 2012 budget.

*Source:* Finance Canada and OECD calculations.

Provinces also face substantial longer-term challenges because they are responsible for health spending, which already accounts for a sizeable share of provincial output (Figure 10) and nearly half of provincial government spending. Containing these costs in the years ahead will not be easy. The federal government recently announced plans to continue its payments to provinces for health care – the Canada Health Transfer (CHT) – past the expiry date of current legislation on 31 March 2014 (Box 1). From 2014-15 to 2016-17, the CHT will continue to grow at its current rate of 6% annually. However, this pace could not have been sustained in the longer term. Hence, beginning in 2017-18, the CHT will rise in line with a three-year moving average of nominal GDP growth, with a minimum guaranteed increase of 3% annually. The Parliamentary Budget Office (PBO) estimates that the new formula could reduce the federal share of provincial and territorial health spending from 20.4% in 2010-11 to an average of 13.8% over the 25-year period starting in 2036 under a scenario where average health care spending growth (at more than 5% per year) is assumed to outpace nominal GDP increases over the period (Matier, 2012).

Figure 10. Health-care expense indicators



1. CIHI projections.

Source: CIHI (2011), *National Health Expenditure Trends, 1975 to 2011* and Statistics Canada.

**Box 1. Federal government's major transfers to provinces and territories**

The federal government provides financial support to provincial and territorial governments primarily through four transfer programmes: the Canada Health Transfer (CHT), the Canada Social Transfer (CST), the Equalization Program and the Territorial Formula Financing (TFF). In 2012-13, these transfers amount to CAD 59 billion or 24 per cent of the federal government's total programme spending.

**Canada Health Transfer**

The CHT is the largest federal transfer programme to provinces and territories. The CHT is composed of an equal per capita cash and tax point transfer. Provinces and territories must fulfil the conditions stipulated in the Canada Health Act to receive the full federal CHT cash contribution.

In 2007, the federal government amended the legislation such that the cash transfer component of the CHT be distributed on an equal per capita basis starting in 2014-15. In the 2012 budget, the federal government confirmed that it will provide protection such that no jurisdiction receives less than its 2013-14 CHT cash allocation in subsequent years as a result of the move to equal per capita cash transfers.

In December 2011, the federal government announced that the CHT will continue to grow at 6% annually until 2016-17. Starting in 2017-18, the CHT will grow in line with a three-year moving average of nominal GDP growth, with funding guaranteed to increase by at least 3% per year.

**Canada Social Transfer**

The CST is a federal block transfer to provinces and territories in support of tertiary education, programmes for children and other social programmes. These funds are transferred

on an equal per capita basis, and provincial and territorial governments have the responsibility to design and deliver programmes, and are accountable to their citizens and legislatures for outcomes achieved and dollars spent. In order to receive their full contribution under the CST, provinces and territories must not impose minimum residency requirements for receiving social assistance.

Total CST levels are legislated to grow by 3% annually until 2013-14. In December 2011, the federal government announced that the CST will continue to grow at its current rate in 2014-15 and beyond.

#### ***Equalization Program***

The Equalization Program addresses fiscal disparities across provinces. Equalization payments allow less prosperous provincial governments to provide their residents with public services that are reasonably comparable to those provided in other provinces at reasonably comparable levels of taxation.

Equalization entitlements are determined by measuring a province's ability to raise revenues if it were to impose national average tax rates (commonly referred to as fiscal capacity). Before any adjustments, a province's per capita Equalization entitlement is equal to the amount by which its fiscal capacity is below the average fiscal capacity of all provinces (known as the 10-province standard). In order to provide provinces with a net fiscal benefit from their natural resources, the calculation does not fully take their revenues from this source into account but limits this benefit to ensure fairness among provinces. The Equalization formula ensures that the transfer grows consistently with a three-year moving average of nominal GDP growth.

#### ***Territorial Formula Financing***

The Territorial Formula Financing (TFF) programme enables the three territorial governments to provide a range of public programmes and services to their residents that are comparable to those offered by provincial governments with comparable levels of taxation. TFF is based on the difference between a proxy of the territory's expenditure requirements (known as the Gross Expenditure Base) and the territory's capacity to raise its own revenues.

The move to a transparent, stable and ultimately less generous formula for the CHT hardens the budget constraint for provincial and territorial governments. They will have to respond by slowing health-care outlays: Ontario, for example, is aiming to limit its annual average health-care expense growth to 2.1% between 2011-12 and 2014-15, about a third of the ten-year historical average. At the same time, greater budget predictability enhances provincial and territorial governments' ability to manage and invest in their health-care systems, while respecting the *Canada Health Act* as the sole condition for receipt of the CHT. Provincial and territorial governments are required to uphold the five principles of the *Canada Health Act*: universality, comprehensiveness, portability, accessibility and public administration, as well as provisions relating to prohibiting extra billing and user charges

Planned changes to the CHT are also likely to widen regional inequalities. Currently, the CHT is allocated to provinces based on population and includes both cash and tax point transfers. The inclusion of corporate and personal income tax point transfers from the federal government to provincial and territorial governments in 1977 provided an implicit interprovincial redistributive element. The 2007 budget announced that, starting from 2014, the CHT will be allocated to provinces based on population through a cash transfer exclusively. Since per-capita health spending is on average six times higher for Canadians over the age 65 than for others this favours provinces with younger populations, at the expense of those which are ageing more quickly, such as British Columbia, Québec and the Atlantic provinces (Figure 10, Panel C). The federal equalisation system is designed to deal with regional disparities directly or indirectly, and the pressures due to widening health-care cost disparities may eventually require this system to be enriched.

Strengthening the fiscal framework through well designed and transparent fiscal rules can help achieve consolidation goals and long-term sustainability at all levels of government, as discussed in OECD (2010a). Establishing a target debt-GDP ratio would anchor fiscal policy in the long term and help to prevent divergences over time (25% had been adopted in 2004). Multi-year indicative budgeting would increase transparency and improve planning, and a spending ceiling would provide a transparent mechanism to enforce the fiscal path. The PBO could be usefully charged with evaluating budgets and budget outcomes relative to the path chosen by the government.

**Box 2. Recommendations for macroeconomic and financial policies**

***Priority recommendations:***

- Maintain the current level of interest rates for the time being in light of good inflation outcomes and significant downside risks to the global economy. Tightening may well become necessary late this year, so long as downside risks do not materialise by then.
- Continue to closely monitor developments and risks in housing markets and household debt. If imbalances continue to widen, the government should respond with further tightening of macro-prudential measures.
- Implement fiscal consolidation plans as budgeted, but slow the pace of tightening should economic prospects weaken significantly. Implement the rise in the pension age as planned. 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. Eliminate inefficient tax expenditures, especially those that are regressive, such as those for stock options.

***Other recommendations:***

- Strengthen the fiscal framework by adopting a long-term debt ratio target with associated multi-year budgeting and spending ceilings.
- Improve securities market regulation by implementing as comprehensive a securities regulator as possible, consistent with the Supreme Court decision.

**Canada’s key long-term challenge is to boost productivity growth**

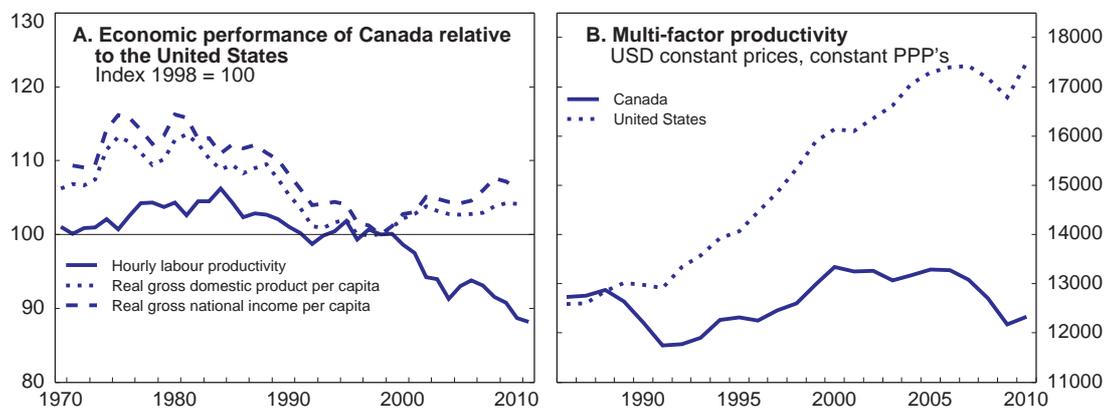
Over the past few decades, multifactor productivity (MFP) in Canada has been stagnant, and it has even fallen since 2002 (Figure 11). Per capita income growth has nevertheless held up thanks to increasing factor utilisation and, since 2003, robust terms-of-trade gains. Regarding the former, and reflecting earlier tax and benefit reforms, female participation has risen strongly, and the share of the population working is now 4 percentage points higher in Canada than in the United States. Capital intensity is also slightly higher in Canada, although it is heavily weighted toward engineering structures to the detriment of machinery and equipment, particularly, in the form of information and communication technologies (ICT). The composition of output can also affect measured productivity, but weak productivity appears to be spread widely across sectors and therefore controlling for composition still leaves most of the puzzle to be explained (Chapter 1).

MFP is a “black box” residual, but as an empirical matter it captures the main sources of rising living standards over the long term. There is some evidence that it is the product of investments in human capital and innovation (Jones, 2002; Jaumotte and Pain, 2005; Hall *et al*, 2010). Indeed, MFP growth is sometimes used as a direct measure of innovation (National Economic Council, 2011). Canada’s expert panel on business innovation concluded that the long-term average growth of MFP is the best comprehensive indicator of innovation, the latter defined to include advances arising from not only science and

technology (R&D), but also improvements in business models and processes of all kinds (CCA, 2009). Intensified innovation should, therefore, boost MFP growth.

Figure 11. **Productivity in Canada relative to the United States**

Total economy



Source: Centre for the Study of Living Standards (2011), *Aggregate Income and Productivity Trends, Canada vs. United States* – [www.csls.ca/data/ipt1.asp](http://www.csls.ca/data/ipt1.asp); calculations from Johansson, A. *et al.* (2012), “Long-term growth scenarios”, *OECD Economics Department Working Paper*, forthcoming; OECD *Annual National Accounts database*.

### Fostering business innovation

Innovation is an exceedingly complex, lengthy and risky process. It can be promoted by multiple enabling factors in the broader economy and society itself. Efficient resource allocation, characterised by the fluid entry and growth of innovative firms and exit of less productive ones, magnifies the benefits of innovation (OECD, 2012a). Canada possesses many of these assets, notably macroeconomic stability, a good regulatory framework and a well educated workforce. However, disadvantages include uneven (though relatively low) capital taxation, limited capital markets for funding innovation, insufficiently strong competitive pressures in certain sectors, and weak “connective tissue” that links research to commercialisation. Also, with relatively abundant labour and low relative labour costs, at least until recently, Canadian firms have been under less pressure to innovate than firms in other countries. One result is very low business R&D (BERD) by OECD standards (Figure 12). Government policies in support of R&D investment and regarding aspects of tertiary education should be re-examined, particularly in light of weak commercialisation of ideas.

### *Taxation is becoming more competitive internationally*

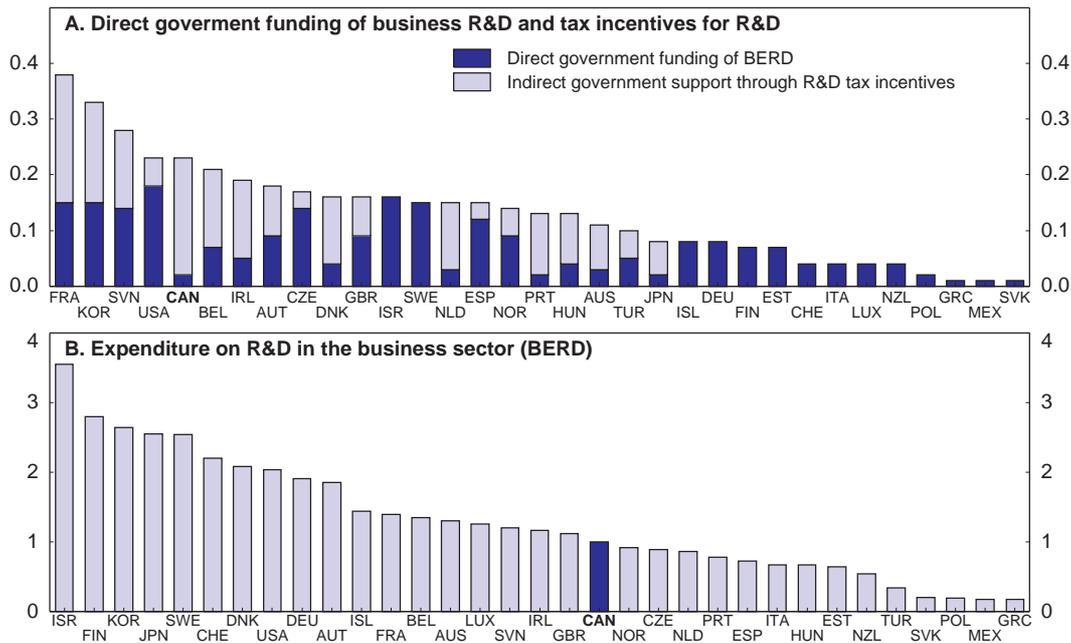
Cutting corporate income tax (CIT) rates increases the returns to innovation (as to any investment). A lower capital gains tax supports venture capital (VC), since VC investors' returns take that form. Canada's statutory CIT rate has become one of the lowest in the G7, whereas it had been the highest only a few years ago. This should stimulate business innovation in Canada, including by attracting more foreign firms and the technological and managerial know-how that they often bring.

However, marginal effective tax rates on capital remain uneven. Tax breaks to manufacturing and natural resources (abstracting from oil and gas royalties) penalise services, which are a critical emerging area for the knowledge economy. The small business deduction for Canadian controlled private corporations (CCPCs) provides tax relief to SMEs that is phased out as a corporation grows in size. Indeed, small firms account for a substantially larger share of employment in Canada than in the United States. While the tiny population of innovative start-ups are responsible for a disproportionate amount of

breakthrough innovations and net job creation, not all small firms are young, and MFP growth appears to be concentrated at the medium-sized range (ICP, 2012). The reduction in the general federal CIT rate will serve to reduce the disparity in treatment of large and small firms, and to that extent should encourage small innovative firms to expand sales, enter foreign markets and attain the scale needed for successful innovation, competitiveness and high MFP growth.

Figure 12. **Fiscal support and business R&D investment, 2009<sup>1</sup>**

As a percentage of GDP



1. Or latest available year.

Source: OECD, *OECD Science, Technology and Industry Scoreboard 2011*.

***Innovation support is being rebalanced toward private-sector needs***

Support for innovation ranks very high on the list of government priorities, and it has been appropriately protected from the 2012 budget cuts. The federal government supports research in Canada mainly via the National Research Council (NRC) and the three granting councils for the natural, social and health sciences. The 2007 federal science and technology strategy identified four areas of public research focus (energy, environment, health sciences and ICT) and called for an expansion of human capital in STEM subjects (science, technology, engineering and mathematics), backed up by increased funding to public research in all subsequent budgets. To increase the effectiveness of public research, the strategy expanded public-private partnerships, notably in the framework of the networks of centres of excellence. In its recent budget the federal government also refocused the NRC on business-oriented research. The government has commissioned three major reports covering areas of: competition policy (Competition Policy Review Panel, 2008); business innovation strategy (Council of Canadian Academies, 2009); and R&D policy (Independent Panel on Federal Support to R&D, 2011, also known as the Jenkins panel). Many of the recommendations put forward by these reports have been or will be appropriately implemented.

The main federal R&D support programme is the Scientific Research and Experimental Development (SR&ED) tax credit, which is supplemented by provincial credits. SR&ED is one of the most expensive tax expenditures in Canada: CAD 3.6 billion from the federal government and CAD 1.5 billion from the provinces and territories in 2011. The R&D tax subsidy rate (which includes programmes other than SR&ED) is among the highest in the OECD (Figure 12). By contrast, grants are very low.

While this policy mix importantly avoids the need to “pick winners”, it is potentially poorly targeted. Even though there is preliminary evidence that tax credits stimulate R&D spending (Lester, 2012), other research suggests that, in the case of level-based credits, much of that may not be incremental, insofar as large firms doing R&D anyway also apply for tax relief (Baghana and Mohnen, 2009). Furthermore, the blunt instrument of tax credits may not always direct resources to areas with the highest social spillovers. These considerations suggest that innovation might be encouraged more effectively, and risks better balanced, by reducing the importance of tax expenditures and relying more on grants.

For small CCPCs, the tax credit is almost double that for large firms. The rate of subsidisation of small CCPCs can go up to 70% including provincial credits and various direct grants (IPFSRD, 2011), which may result in a very high marginal effective tax rate on income when the firm’s income passes CAD 500 000, the level at which the tax credit on its R&D is reduced. The small CCPC credit is furthermore refundable up to a limit so long as the firm generates no cash flow. There are substantial fixed compliance costs involved in qualifying for the credits, however.

The Jenkins panel recommended streamlining the SR&ED, notably for small- and medium-sized firms, and using the fiscal savings to boost direct grants to the Industrial Research Assistance Program (IRAP), a large grant programme that provides advice in addition to funding, mostly to small innovating firms (IPFSRD, 2011). The 2012 budget made a number of changes to the SR&ED that will be fully effective by 2014. Capital will be removed from the SR&ED expenditure base for *all* firms. Eligibility for overhead and contract costs is being progressively tightened and administration will be further simplified. The regular (large firm) subsidy rate will be reduced from 20% to 15% in line with the decline in the general CIT rate, while the small firm rate subsidy remains unchanged at 35%. Funding to small and medium-sized businesses through IRAP is being doubled immediately. The proposed rebalancing of business innovation support needs to be carefully implemented and evaluated.

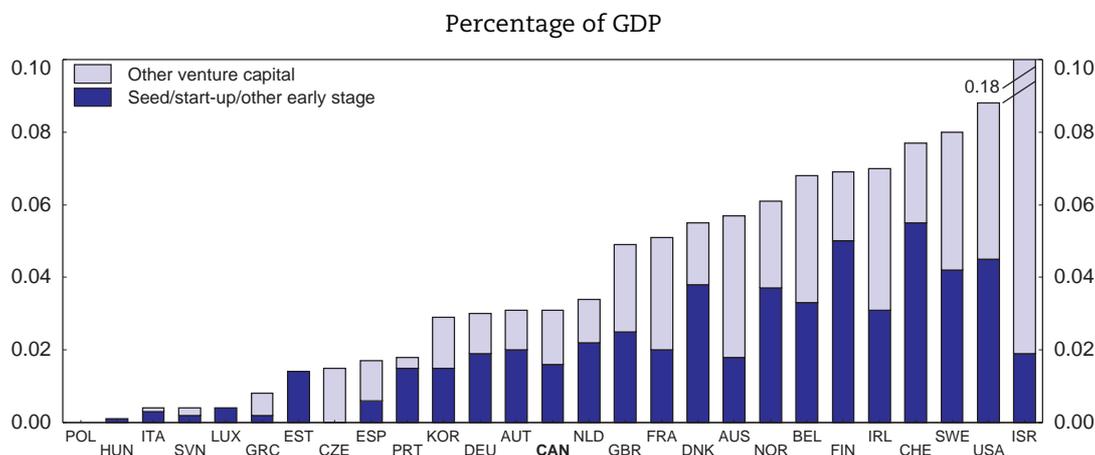
The policy rationale for the enhanced refundable credit is to internalise the positive externalities of R&D performed by CCPCs and to compensate for their constrained access to finance. However, the generosity of the subsidy could result in the allocation of too many resources to small firms. The current level of the SR&ED subsidy for large firms appears to be justified by externalities, net of costs (Parsons and Phillips, 2007). Instead of reducing the SR&ED rate for large firms, it would have been preferable to reduce the differential by lowering the small firm rate toward the large-firm level, while maintaining a broad base, inclusive of capital, to avoid creating distortions in favour of small and/or labour-intensive firms.

### ***Do financial markets allocate funds to innovation effectively?***

A well functioning financial system is important for allocating capital to firms and sectors, while pricing risk efficiently. VC and private equity segments of the capital market specialise in innovative start-ups and other high-risk ventures. They rely on close monitoring to reduce informational asymmetries and on buoyant public equity markets for lucrative exit opportunities. Canada’s VC market is only about one-third as large relative to GDP as in the United States, though still higher than in a fair number of other OECD countries (Figure 13). Institutional investors (such as pension funds) have shied away from the VC market segment but are sorely needed to provide it with depth. The lack of a single

securities regulator has been identified as giving rise to high transaction costs, inconsistent reporting and accountability standards, and patchy enforcement (FSB, 2012; OECD, 2010a). Greater cross-provincial harmonisation and consistency in securities market regulation would help to deepen capital markets and improve resource allocation across the country.

Figure 13. Venture capital investment, 2009



Source: OECD, *OECD Science, Technology and Industry Scoreboard 2011*.

VC investments are encouraged through the income tax system, in large part through the so-called Labour-Sponsored Venture Capital Corporations (LSVCCs). Indeed, some 50% of the VC market is publicly funded, compared with less than 5% in the United States. However, a large portion of this investment is directed to regional development rather than small firm growth. Canadian enterprises supported by private, as opposed to public, VC appear to have superior performance in terms of value creation and innovation intensity overall. More worrying is evidence of crowding out of private projects by public VC (Brander *et al.*, 2008). Such crowding out, particularly by LSVCCs, has diminished the returns of private VC funds and played a key role in driving pension funds and other furnishers of capital to private funds to the sidelines (MacIntosh, 2012). Following Ontario's lead, federal and provincial tax credits to retail investors in these funds should be phased out.

Stimulating the VC market will prove a challenge, especially as returns have been fairly low and the global financial crisis sharply cut investors' appetite for risk in the United States as well as Canada. Government could help through co-investment funds in which private partners make the investment decisions. Following the recommendation of the Jenkins panel to leverage greater private capital and expertise by means of such co-funding, the 2012 budget boosted direct funding to the VC market significantly. However, the risk remains that these funds will remain forever dependent on public support.

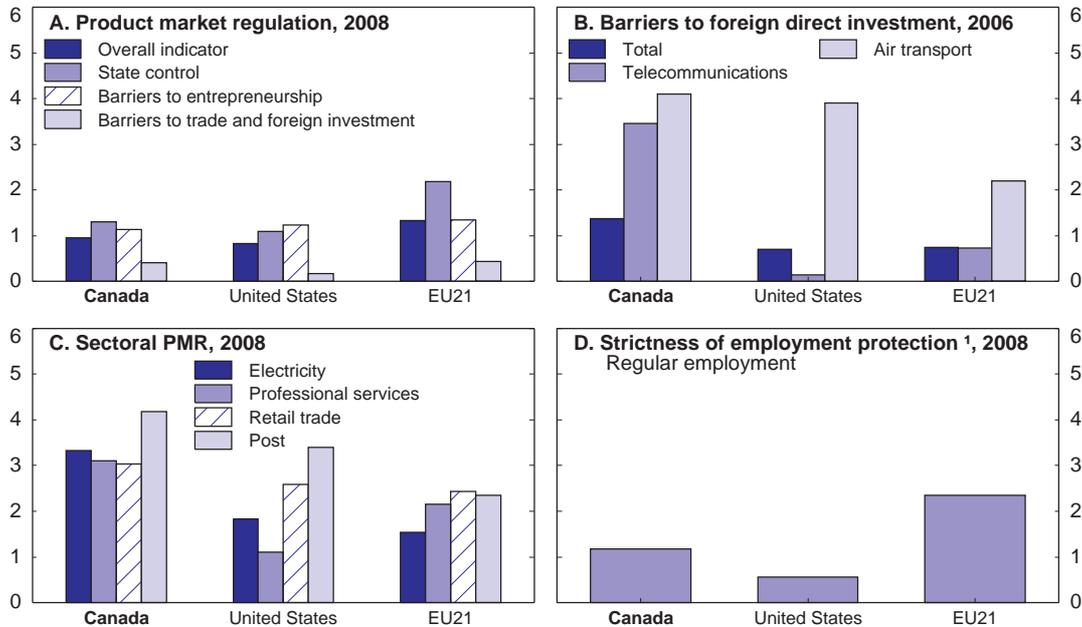
***Is competition providing the necessary spur to innovation?***

Vigorous competition is a key motivator of innovation, as firms are driven to innovate to stay in business (CCA, 2009; Sharpe, 2010). Competitive behaviour is nurtured by openness to trade and foreign direct investment internationally and by low barriers to entry and exit in product and labour markets at home. Conversely, firms that are sheltered from competitive pressures may earn sufficient rents to survive without innovating, even if that condemns them to remain small. Canada's product-market policy settings are largely in line with OECD best practice. Barriers to entry, as captured by the OECD's Product Market Regulation (PMR) indicators, are among the lowest in the OECD (Figure 14, Panel A).

Employment protection is also moderate, which facilitates firm entry and organisational innovation (Panel D).

Figure 14. Product and labour market regulation indicators

Index scale of 0-6 from least to most restrictive



1. The OECD indicators of employment protection are synthetic indicators of the strictness of regulation on dismissals and the use of temporary contracts.

Source: Panels A and C: OECD, OECD.stat – Market regulation database; Panel B: Koyama and Golub (2006), “OECD’s FDI regulatory restrictiveness index: revision and extension to more economies”, *OECD Economics Department Working Paper*, No. 525; Panel D: OECD.stat – *Employment protection database*.

Yet, there are residual impediments to competition. In 2011, the OECD’s *Going for Growth* (OECD, 2011a) identified Canada’s network sectors and professional services as offering ample scope for regulatory improvement (Figure 14, Panels B and C). There are signs that some of these barriers are being recognised and tackled:

- OECD work shows that infrastructure sectors are critical to translating the benefits of innovation, notably in ICT, into generalised productivity gains, and so rigidities there may reduce efficiency in all sectors (Conway and Nicoletti, 2007). The government is, encouragingly, committed to sustaining competition in telecoms, and foreign-investment restrictions have begun to be eased. New competitors have emerged in the wireless telephony market. The government has also implemented the competition policy recommendations of *Compete to Win* (CPRP, 2008). Competition authority powers of monitoring and enforcement against cartel-like behaviour and abuses of dominant market positions have been strengthened, and merger and acquisitions notifications and review procedures have been streamlined.
- Differences in provincial certification requirements for regulated professions that prevent their mutual recognition create barriers to the interprovincial mobility of workers in these occupations. Professional services such as architecture, engineering, and various other businesses and skilled trades include skills

necessary for many intangible investments. The 2009 amendments to the Agreement on Internal Trade (AIT, Chapter 7) have resulted in principle in the recognition of certified workers across provinces and territories and encouraged the adoption of common inter-provincial standards that facilitate mobility. Implementation of the Chapter is still ongoing.

- In health care, one of the fastest growing sectors, representing 10% of the economy, rigid prohibitions on private entry hamper innovation (OECD, 2010a). In the wake of relaxations on the restrictions on provinces in this area, they have formed an interprovincial body on health-care innovation and should seize the opportunity to foster it.

As a relatively small market, Canada's ability to reap the benefits to innovation of both scale and competition requires fully exploiting international trade opportunities. Canada has dismantled most merchandise trade barriers (except in dairy and poultry products; see the chapter on agriculture in the 2008 *Economic Survey of Canada* (OECD, 2008)). NAFTA resulted in sharp increases in US-Canada trade and investment. The impact of increased continental competition on Canada's productivity growth is less clear, although the weak Canadian dollar until recent years may have induced Canadian firms to delay or avoid restructuring (Rubin and Lester, 1999). Bilateral FTAs are now being pursued with EU and Pacific partners, a welcome development. Success in expanding and diversifying trade linkages will also depend on investing heavily in transport infrastructure (McMillan, 2011). The recent federal budget, in fact, proposes significant streamlining of regulatory approvals for major infrastructure projects such as oil pipelines.

Barriers to FDI are mainly in the form of ownership restrictions or regulatory discretion over mergers and acquisitions in specific sectors. The more general "net benefit test" has long been thought to have insignificant disincentive effects. However, its recent first-time use by the government to deny proposed investments in certain sectors (aerospace and potash) and subject others to questionable scrutiny (Target), relatively low thresholds for review in sheltered sectors (culture), and a lack of transparency in the review process, could have a dissuasive effect on future FDI and on openness to Canadian companies abroad (Bergevin and Schwanen, 2011). The federal government recently announced that targeted improvements to the administration of the *Investment Canada Act* will be introduced to enhance transparency while preserving investor confidentiality.

Canada has undergone much structural reform over the years, and pressing forward with remaining issues may be correspondingly difficult. A competitiveness council, as recommended by the Competition Policy Review Panel (2008), or else a national innovation council, as recommended by the Jenkins Panel (IPFSRD, 2011), could catalyse reform efforts, as the Productivity Commission did in Australia and most recently in New Zealand.

### ***Is there a commercialisation gap?***

The OECD Innovation Strategy accords a key role to new, young and entrepreneurial firms as exploiting opportunities neglected by more established companies (OECD, 2010b). Risk-taking is a defining characteristic of entrepreneurs. According to the 2009 Survey of Innovation and Business Strategy (SIBS) the risks and uncertainty of innovation outputs are the main impediments to undertaking it. Case studies have pointed to commercial failure as the most frequent cause of exit of innovative start-ups, which tend to be led by technically, rather than managerially, skilled people (Barber and Crelinsten, 2009). More generally, an apparently high degree of risk aversion in doing business, rooted in a fear of failure is one characterisation of Canadian social attitudes toward commerce. These attitudes are partly confirmed by surveys, which also point to a greater dependence on government help than on market opportunities for commercial success (Deloitte Research, 2011). The best way to stimulate willingness to take risk may be to boost competitive pressures and openness, as discussed above, and to complement this by enhanced attention to management training and diversity at all educational levels. More

tertiary education in general is also needed (Chapter 2): Canada still lags in attainment of university degrees, whereas highly educated persons are much more likely to be owners of high-growth innovative firms (ICP, 2012).

Subsidies received by small Canadian-owned firms may be one way of targeting funding on the commercialisation gap. However, they are generally inefficient (IPFSRD, 2011). Business grant programmes have rarely been evaluated or culled, which has led to a proliferation of small and fragmented schemes at both federal and provincial levels. This points to the need to consolidate programmes and improve business access to them. It will be important to guard against the risks of “picking winners”, especially as innovation support is being rebalanced toward more grants and strategic use of procurement, for example by ensuring competitive and open awards with safeguards against capture, *e.g.* by support of general-purpose rather than specific technologies.

### ***Innovation can also help reduce the costs of avoiding environmental degradation***

Green innovation displays positive externalities common to all forms of innovation but also reduces the negative externalities of environmental degradation (air and water pollution, climate change, biodiversity loss, etc.) and will in any case be needed if Canada is to transition to a low-carbon economy. The OECD Innovation Strategy (2010b) concludes that such policies can succeed only if a price is put on such environmental externalities, ideally in this case through a carbon tax or an emissions trading scheme. Such pricing corrects for externalities and can also be a source of government revenue. British Columbia, Québec and Alberta have moved a small way towards carbon pricing, and Alberta is also subsidising innovative technologies like carbon capture and storage, but this appears to require higher prices on carbon to be profitable.

The federal government has accorded substantial funding to clean energy projects and sustainable agriculture via genomics but is not prepared to impose generalised carbon pricing so long as the US government is uncommitted, given the very close economic linkages. It also provides direct support for green innovation to the private sector, for example by innovative procurement and by leadership in standards setting, which may also help create a critical mass of market demand. Other OECD governments have used schemes such as feed-in tariffs to motivate green commercial innovations, though with mixed success and sometimes heavy costs. The 2012 federal budget provided funding for several environmental initiatives and also proposed to speed up environmental assessment procedures for natural resource exploitation. This reinforces the need to balance environmental and economic growth objectives through price incentives.

#### **Box 3. Recommendations for macroeconomic and financial policies**

##### ***Priority recommendations:***

- Fulfil commitments to fully open telecoms, and fully implement Chapter 7 (Labour Mobility) of the Agreement on Internal Trade (AIT) to ensure interprovincial mobility of regulated professions and skilled trades. Ease ownership restrictions in other network sectors, such as banking, broadcasting, culture, post and air transport.
- Further improve targeting of government support for business R&D by shifting funding at the margin away from the scientific research and experimental development (SR&ED) tax subsidies by lowering the refundable small firm rate toward the large firm rate. Use savings to reinstate capital costs in the eligible base and scale up direct grants.
- Subject the Industrial Research Assistance Programme (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 it nears the commercialisation stage associated with private benefits.

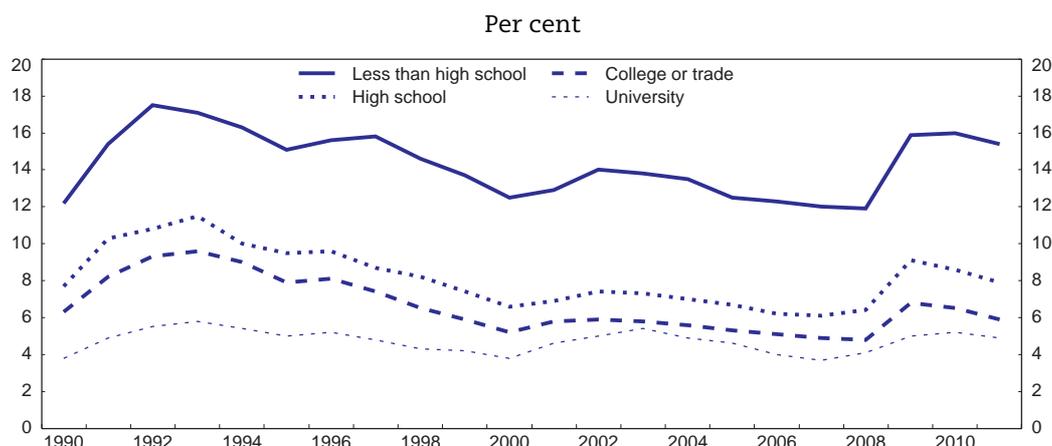
**Other recommendations:**

- Wind down public support to VC markets while attracting private funding and management through risk sharing. Phase out tax credits to labour sponsored venture capital corporations (LSVCCs).
- Encourage tertiary education institutions to include training in entrepreneurship and business skills in their science-based programmes.
- Encourage green innovation through demand-pull instruments, such as pricing of environmental externalities, notably in the areas of carbon emissions and water quality.

### Strengthening higher education

Investing in education can bring substantial economic and social benefits, including higher wages and job satisfaction, fewer periods of unemployment, and improved health and quality of life. Wider benefits of a skilled workforce include higher productivity, innovation and economic growth, and stronger communities with greater civic engagement and social cohesion. In general, the less educated have faced more job loss, especially during downturns, than those with more credentials (Figure 15). Over time, educational disadvantages can thus translate into greater economic hardship and higher risks of poverty.

Figure 15. Unemployment rate by education level



Source: Statistics Canada, *Labour Force Survey*.

Educational attainment is a key driver of economic performance. From the perspective that human capital is an input into the production function, it interacts with physical capital to affect the *level* of output (Lucas, 1988; Mankiw *et al.*, 1992). High-quality basic education is needed as a foundation for strong human capital acquisition. However, for growth and, especially, innovative growth, the high level of skills obtained in tertiary education is key (Nelson and Phelps, 1966; Aghion and Howitt, 2009). Hence, investments in advanced education would therefore generate the highest returns in the form of faster aggregate labour and multi-factor productivity gains (Coulombe and Tremblay, 2009a).

Empirical evidence supports a significant impact of educational attainment on growth in Canada. Coulombe and Tremblay (2001) find that about half of the difference in relative per capita income growth across provinces can be explained by differences in educational

attainment. The skills acquired by one extra year of schooling are found to raise per capita income by about 5% (Coulombe and Tremblay, 2007). These results are similar to the 6% impact found in studies of OECD countries as a whole (Santiago *et al.*, 2008). However, while education levels may provide a good indicator of human capital (so long as attainment is not primarily a screening mechanism), it is the actual skills and knowledge acquired that matter for productivity. Therefore improving the quality of education may be at least as important as increasing attainment rates (Coulombe and Tremblay, 2009a).

### ***Tertiary education attainment needs to continue to expand to meet long-term requirements***

Canada boasts a highly educated population by international standards, thanks to a diverse range of tertiary education institutions consisting of universities, community colleges, polytechnics, university-colleges, and private career colleges. Compared to other countries, the country has a large college (non-university tertiary) sector. Colleges differ from universities in that their programmes tend to be shorter in length and emphasise practical, technical and occupational training for the labour market. While colleges typically grant diplomas and certificates rather than degrees, a small but growing subset of “polytechnic” institutes has emerged that grants baccalaureate degrees and differentiates itself by its focus on applied research for industry. Meanwhile, university-colleges exist mainly in western provinces and provide primarily teaching-focussed undergraduate programmes.

Long-term demographic trends suggest that tertiary education participation rates will need to continue rising to maintain the supply of skilled labour. The rapidly changing needs of a knowledge-based economy and imminent retirement of the baby-boom cohort are likely to create a widening demand for workers with tertiary attainment as well as management skills. Meanwhile, a shrinking youth population implies that growth in the supply of skilled labour will require encouraging participation in tertiary education for currently under-represented groups such as those from low-income families with no history of higher education, mature students and Aboriginal students.

Given the continually evolving skills demanded by a knowledge-based economy, the tertiary sector will need to provide more flexible entry points and pathways for students seeking to upgrade their skills throughout their careers (OECD, 2011b). Education is a responsibility of the provinces and territories (although the federal government plays an important funding role). The provinces have a well functioning co-ordinating body, the Council of Ministers of Education, Canada (CMEC). The provincial educational systems have undergone rapid but differentiated growth, giving rise to a plethora of different types of institutions to meet the labour market’s increasingly diverse needs.

While this differentiation is a strength, it can hinder mobility for students wishing to transfer credits across institutions and thus limit pathways to human capital accumulation. Although studies suggest that the system already accommodates a considerable amount of student movement (Finnie *et al.*, 2012), provincial systems vary widely in the ease with which credits can be transferred across institutions. Providing more flexible access will thus require further co-ordination to facilitate credit transfer both inter-provincially and across different types of institutions within provinces. Inter-provincial transfer agreements have been established among western provinces and among Atlantic provinces, which can serve as models for others. Ontario has also announced significant funding to set up a framework to guide the credit transfer system toward a web-based portal. And the CMEC Working Group on Credit Transfer aims to develop a pan-Canadian system over time.

University participation rates in Canada vary to a large extent with socio-economic status, and factors such as parental education levels play an important role. The combination of fairly modest tuition fees and the student loan system is generally successful at eliminating much of the influence of parental income on tertiary participation, as evidenced by Canada’s high level of intergenerational mobility relative to other OECD

countries (Causa and Johansson, 2009). However, it is not sufficient to completely level the playing field as far as financing is concerned. Individuals from disadvantaged backgrounds may be more debt-averse and sensitive to changes in the cost of education (Carmichael and Finnie, 2008; Palameta and Voyer, 2010), suggesting that an effective grant system, in addition to loans, is important for lowering access barriers for these students. Ontario has also responded by offering lower tuition to students from less affluent backgrounds. Equality of access could be improved by increasing the transparency of the grant application process, while stepping up efforts to deliver information to low-income families at an early stage to help them understand the benefits of higher education and their options to finance it, as Ontario and British Columbia are doing with the Life After High School project. Expanded grants to disadvantaged students could be funded by reducing education tax credits, which are not means tested.

### ***Immigration may be an under-utilised source of skilled labour***

Immigration can provide an important source of knowledge diffusion while improving labour-supply flexibility; it is likely to become increasingly important as the workforce ages. Over the past three decades the labour market outcomes of immigrants to Canada have declined (Picot and Sweetman, 2012). Many recent arrivals have had difficulty finding employment, and their average earnings have gone down over time, particularly among men. Research has shown that there is no single explanation for this earnings decline, pointing instead to a number of factors such as a shift in source countries, weak language skills and the high-tech bust of the early 2000s. Moreover, immigrants may also encounter difficulties with employers not recognising their foreign credentials, even if they have been admitted through Canada's points-based immigration system. In recognition of these challenges, the Canadian government has made changes to the country's immigration policies and put greater emphasis on criteria such as language skills proven to lead to better immigrant outcomes. Canadian governments have also launched several initiatives in recent years to provide employers with guidelines for assessing foreign credentials and hiring internationally trained workers.

As immigrants who study in Canada have better labour-market outcomes than those who study abroad (Rollin, 2011), this Survey recommends that a greater share of immigration should come from foreigners studying at Canadian tertiary institutions (TEIs). Canadian governments have made welcome progress in this direction over the past few years. In 2008, Citizenship and Immigration Canada introduced the Canadian Experience Class, which facilitates the attainment of permanent resident status for foreign students who have studied at a Canadian TEI and following graduation have acquired at least one year of full-time (or full-time equivalent) skilled work experience within the last two years. Moreover, international students enrolled in a PhD programme in Canada, and who have completed at least two years of study towards a PhD, have been since November 2011 eligible to apply for permanent residence. Several provinces also have the Provincial Nomination Program to fast-track permanent residency for international graduates, often conditional on having a full-time job offer in their field of study. Preliminary results suggest these programmes are helping to improve labour-market outcomes for recently arrived immigrants (Sweetman and Warman, 2009).

### ***Strengthening skills for innovation***

Innovation draws upon a wide range of competences, including subject-specific skills, thinking and creativity skills, and social and communications skills (OECD, 2011d). Improving innovation performance in Canada will require a workforce with more of both advanced and multi-disciplinary skills. However, Canada lags its peers in the attainment of master's and doctoral degrees (Figure 16), as well as in the development of business and entrepreneurial skills. While the country performs well relative to the OECD average in producing advanced science and technology degrees, significant and in some cases rising earnings premiums for graduates in computer science and business fields suggest that demand for these graduates may be increasing faster than their supply (Walters and

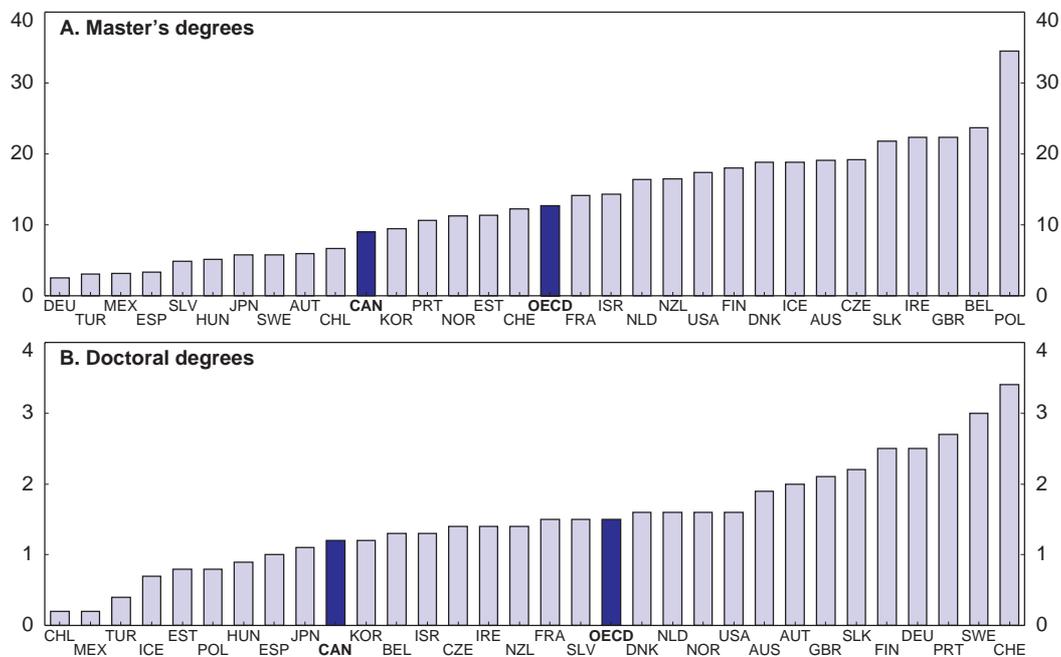
Frank, 2010). In addition, a deficiency appears to exist in the availability of tertiary graduates who possess the right combination of skills demanded by employers, including technical skills, industry experience, business acumen and communications skills (Information and Communications Technology Council, 2008).

**Strategies to foster a high-quality system**

While funding for TEIs comes primarily from provincial governments, over time there has been a shift towards greater contributions from tuition fees. On the whole, public and private cost shares of tertiary education appear to be reasonably distributed based on similar monetary rates of return on private and public investment. Even if average university tuition fees across Canada are in the middle of the range for OECD countries, some provinces could benefit from evaluating whether their low-tuition policies have undermined institutional quality and competitiveness, particularly in the context of strained government finances.

Figure 16. **Graduation (attainment) rates for Master's and PhD programmes, 2009<sup>1</sup>**

Graduation (attainment) rates for single year of age, by programme



1. The term graduation rate is used in its OECD sense of attainment rate for a specific cohort.

Source: OECD (2011), *Education at a Glance 2011*.

TEIs contribute to innovation through two main channels: research (knowledge creation) and skills development (knowledge diffusion). In Canada, increasing policy emphasis on innovation has generally shifted government funding for TEIs away from core operating activities towards research: sponsored research as a share of total government funding to universities rose from 13% in the early 1990s to over 25% by the mid-2000s (though this proportion subsequently declined somewhat). Research output in the higher education sector has improved notably over the past decade.

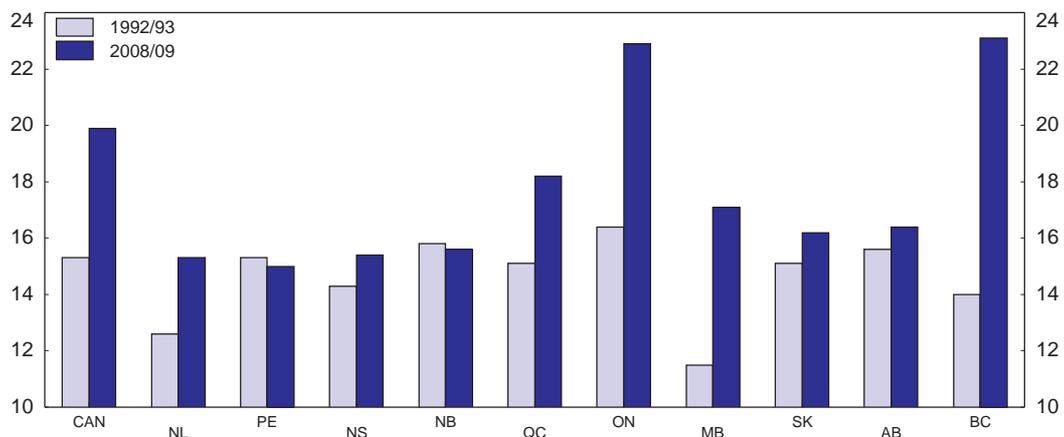
As a result Canada has a strong research capacity centred on its universities: per capita academic publications, quality-adjusted for journal ranking, is 10th highest in the world,

and near the top in some cutting-edge areas of research, notably in life sciences (OECD, 2012c). Yet, however successful on its own terms, this does not seem to have translated into a stream of innovative commercial products, even though there are some outstanding exceptions. There are two main levels of technology transfer (TT): *i*) from universities or public research institutions to business, typically via TT offices trying to market university-generated patents, or by various forms of collaboration including internships, co-op programmes, research contracting, incubators, science parks, etc.; and *ii*) from business to business, most often via leasing or sale of intellectual property (IP) to allow an efficient specialisation across research and commercialisation functions. Such flows may occur domestically or, increasingly, internationally, including via inter-governmental collaboration.

Canada faces challenges in improving its TT systems. Academics should be provided with stronger incentives to produce research relevant to business needs, starting with the peer-review granting process, then sharing their IP with business through collaborative efforts and finally having some form of ownership rights over their patented inventions. Business should be encouraged to discover what academia has to offer in terms of research skills ready for business use, perhaps by means of integrated one-stop shops, as proposed by IPFSRD (2011). By putting firms in the position of demanders of research products, a system of business vouchers (in lieu of tax credits) to purchase or contract for R&D with both academics and other business could help to focus more research on business needs.

However, funding constraints have driven up ratios of full-time students to full-time university faculty, especially in Ontario and British Columbia (Figure 17) as full-time faculty have shifted some of their focus from teaching to research. Universities have been moving to larger class sizes, more sessional lecturers and increased reliance on less time-consuming evaluation instruments (such as multiple-choice examinations). There is some risk that these trends may hinder students from fully developing the skills needed for innovation, although evidence on this point is scarce. Policymakers and TEIs need, therefore, to evaluate the effects of such increasingly widespread changes in teaching approaches and try to balance the demands of research with those of teaching. In the presence of tight budget constraints, resolving this issue is likely to require ways to increase the efficiency of both teaching and research. Creating greater differentiation between TEIs that engage in research and those that focus on teaching may help strengthen overall quality by allowing institutions to specialise by targeting resources on their areas of comparative advantage.

Figure 17. Ratio of university full-time students to full-time faculty



Source: Statistics Canada.

Such initiatives should be complemented with funding and efforts to improve the quality and availability of educational data (including on the relative costs on teaching and research) at a system-wide level. Provinces vary considerably in the availability of comparable data on student outcomes and institutional performance because their data systems are designed to respond to the internal demands of their respective jurisdictions. CMEC and Statistics Canada have an ongoing partnership through the Canadian Education Statistics Council (CESC) to improve Canadian data on education. These deficiencies create challenges both for students to evaluate the quality of TEIs and make informed choices about their educational pathways, and for policymakers to ensure accountability for public funds. Certain provinces are taking welcome steps to develop universal student identifiers to track student outcomes and movements across institutions. However, data collection needs to be co-ordinated at the national level, preferably by Statistics Canada working with CMEC through the CESC, to ensure harmonisation and comparability and improve inter-provincial student mobility.

**Box 4. Recommendations for macroeconomic and financial policies**

***Priority recommendations:***

- Improve access for disadvantaged groups by increasing targeted need-based financial assistance, which may be funded with reduced education tax credits where public finances are constrained. Reduce barriers for debt-averse financially disadvantaged students by increasing the transparency of the aid application process. Further, lower barriers for risk- and debt-averse students by providing relevant and reliable information to support their learning and career choices.
- Allow a greater share of immigrants to enter through the tertiary education system as foreign students, along with efforts to expand opportunities for them to work and obtain permanent residency after graduation.
- Consider implementing, according to the particular needs and priorities of each province and territory, greater differentiation between institutions that engage in research and those that focus primarily on teaching for its potential quality and efficiency benefits.

***Other recommendations:***

- Promote a more flexible delivery model of higher education to encourage skills upgrading through continued efforts to strengthen credit-transfer arrangements for TEIs within and between provinces.
- In provinces with constrained public finances, evaluate whether tuition policies undermine institutional quality and competitiveness.
- Allocate more funding to Statistics Canada to co-ordinate data collection on TEIs and student outcomes at a nation-wide level.
- 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.

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## Annex

### Progress with structural reforms

This Annex reviews action taken on recommendations from previous *Surveys*. Recommendations that are new in this *Survey* are listed in the relevant chapter.

Recommendations	Action taken since the previous <i>Survey</i> (September 2010)
<b>BUSINESS TAXATION</b>	
Switch from provincial sales taxes to value-added taxes (VAT). Change tax mix to rely more on VAT and less on less efficient income and profit taxes.	Ontario and British Columbia eliminated their retail sales taxes and adopted the federal Harmonised Sales Tax as of 1 July 2010. However, British Columbia has decided to return to its previous sales tax regime on 1 April 2013 following a referendum on the issue. In its 18 April 2012 budget, the government of Prince Edward Island indicated that it is entering into formal negotiations with the federal government to implement the Harmonised Sales Tax (HST) in the province, effective 1 April 2013. The federal corporate income tax rate was cut from 18% to 16.5% for 2011 and 15% for 2012, bringing the combined federal-provincial statutory corporate income tax rate from an average of 29.4% in 2010 to 26.1% in 2012.
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.	Legislation has been amended to phase out the accelerated CCA for tangible assets in oil sands projects over the 2011-15 period. Legislation has also been amended to reduce the deduction rates for intangible capital expenses in oil sands projects to align them with the rates applicable in the conventional oil and gas sector (this change will be fully implemented by 2016).. A temporary accelerated CCA treatment applying to manufacturing and processing machinery and equipment has been extended for two years for acquisitions made before 2014. Cuts in the general corporate income tax rate between 2000 and 2012 result in a 75% fall in the differential between the general corporate income tax rate and the small business rate at the federal level.
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.	The temporary Mineral Exploration Tax credit for flow-through share investors was extended through 31 March 2013. The 2012 budget also proposed to phase out by 2016 both the Atlantic Investment Tax Credit for mining and oil and gas and the Corporate Mineral Exploration and Development Tax Credit.
<b>PERSONAL TAXATION</b>	
Eliminate GST zero rating for basic groceries.	No action taken.
<b>PRODUCT MARKET COMPETITION</b>	
Lift restrictions on foreign direct investment in airlines, telecommunications and broadcasting.	In the 2012 budget, the government announced that it would lift foreign investment restrictions for telecommunications companies that hold less than a 10% share of the telecommunications market.
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.

Recommendations	Action taken since the previous <i>Survey</i> (September 2010)
<b>FISCAL POLICY AND FISCAL FEDERALISM</b>	
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 significant action taken.
Consider establishing provincial budget agencies or an agency reporting to the Council of the Federation that provide(s) independent analysis of fiscal forecast and cost estimates for policy proposals.	No action taken.
Continue working toward a more stable, rules-based system for determining transfers to provincial governments.	In December 2011 the federal government announced that it would continue to raise the Canada Health Transfer (CHT) by 6% per year until 2016-17. Thereafter it will grow in line with a three-year moving average of nominal GDP growth with a minimum guaranteed rate of 3%. The federal government will extend the current 3% annual escalator for the Canada Social Transfer (CST) to 2014-15 and subsequent years. Equalization transfers will continue to grow in line with the rate of growth of nominal GDP. Territorial Formula Financing (TFF) will remain on its sustainable growth path, growing according to its legislated formula.
<b>SOCIAL AND LABOUR-MARKET POLICIES</b>	
Ban contractual mandatory retirement.	The <i>Canadian Human Rights Act</i> and the <i>Canada Labour Code</i> were amended in 2011 to prohibit federally regulated employers from setting mandatory retirement ages.
Remove the differential treatment for public funding of for-profit and non-profit childcare in provinces where such differentials still exist.	No action taken.
Introduce employer experience rating into Employment Insurance (EI), or scale back access to it for seasonal and temporary workers.	The federal government has announced plans to significantly tighten EI rules based on a worker's history of use of EI benefits. The longer and more frequently someone has previously claimed employment insurance, the broader their job search will have to be and the lower the wages they must be willing to accept.
<b>ENERGY AND ENVIRONMENTAL POLICIES</b>	
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 currently has no plans to introduce a carbon tax or a cap-and-trade system. It is aligning its climate and energy policies with those of the United States and is implementing a sectoral regulatory approach as in the United States. To date, GHG regulations have been finalised for light vehicles, drafted for coal-fired power generation, and are being developed for new heavy vehicles, and the oil and gas sector. British Columbia and Québec have introduced levies on fossil fuels. Québec has also adopted regulations to establish a cap and trade system, and Alberta has implemented a greenhouse gas emission trading scheme. In December 2011, Canada formally announced its intention to withdraw from the Kyoto Protocol effective in December 2012.

Recommendations	Action taken since the previous <i>Survey</i> (September 2010)
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.	Results from surveys and reports show that Canadian municipalities are providing more appropriate market signals, resulting in an efficient amount of water conservation. Water use in the oil sands areas is regulated through a system of licensing and monitoring. The interim Water Management Framework prescribes when, and how much, water can be withdrawn from the Lower Athabasca River for oil sands mining. Oil sands projects in northern Alberta recycle up to 90% of the water used in their operations.
Monitor emissions in the transport sector. Introduce a (carbon) fuel tax in addition to standards.	Both federal and provincial levels of government levy excise or product taxes on motor fuels. Québec and British Columbia have also introduced separate carbon-related levies linked to their specific environmental objectives.
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 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.
<b>AGRICULTURAL POLICIES</b>	
Phase out the supply management regimes by 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.
<b>FINANCIAL-SECTOR POLICIES</b>	
Balance strengthened bank regulation with market-based incentives to address "too big to fail" moral hazard.	The Office of the Superintendent of Financial Institutions published an Advisory for Non-Viability Contingent Capital (NVCC) setting out the principles governing inclusion of NVCC instruments in regulatory capital and an overview of criteria for triggering its conversion. Draft recovery and resolution plans are being developed for the six largest banks.
Establish a national securities regulator, with strengthened efforts to get the consensus of all provinces.	Legislation was proposed but rejected by the Supreme Court in December 2011 on constitutional grounds. The federal government is consulting with the provinces and territories as to how a common securities regulator can be established consistent with the Court's decision.
<b>HEALTH-CARE POLICIES</b>	
Eliminate zero patient cost sharing for core services by imposing co-payments and deductibles.	No action taken.

Recommendations	Action taken since the previous <i>Survey</i> (September 2010)
Clarify the Canada Health Act to facilitate private entry in hospital services and mixed public/private physician contracts.	Provinces are increasing their purchases of hospital services from private providers. Ontario plans to shift routine procedures currently done in hospitals to cheaper non-profit clinics.
Replace historical-based cost budgeting of Regional Health Authorities (RHAs) with a formula-based approach.	Several provinces are refining their models of funding RHAs.
Devolve integrated budgets for hospital, physician and pharmaceutical services to RHAs.	Local Health Integrated Networks (LHINs) in Ontario have been given more planning responsibilities for primary care. In British Columbia, Divisions of Family Practice have been set up to integrate the work of health authorities and family practitioners.
Introduce an element of capitation or salary for doctor payment together with fees regulated by RHAs.	While most medicine is on a fee-for-service model, alternative clinical payments (including capitation) accounted for 26.9% of total payments in 2008-09. 63% of Ontario physicians receive some of their income from capitation.
Move to activity-based budgets for hospital funding, contracting with private and public hospitals on an equal footing. Adjust overall budget caps up to reward efficiency.	The three largest provinces (Ontario, Québec and British Columbia) have either implemented or announced their intention to implement activity-based funding for hospitals.
Control prices for generic drugs at international benchmarks.	Generic pricing varies widely across Canadian public drug plans because reimbursement policies vary. However, this heterogeneity has been decreasing significantly since 2010. In the four largest provinces, price reductions have been applied to public and private plans as well as cash-paying customers. In sum, Canadian generic price controls are moving closer to international benchmarks.
Revise public core package to include essential pharmaceuticals and eventually home care, selected therapy and nursing services.	The Mental Health Commission has published a long-awaited national mental health strategy, calling for CAD 4 billion annually in new funding for mental health care.
Regulate private health insurance (PHI) to prevent adverse selection, and remove tax exemptions for employer PHI benefits.	No action taken.
Accelerate the applications of information and communications technologies in health care.	Over the past decade the federal government has spent over CAD 2 billion on Canada Health Infoway to support the development of electronic health ICTs. At end-2011 over half of all Canadians had electronic health records.
Establish a pan-Canadian independent agency to monitor and analyse health-care quality.	No action taken.

# Chapter summaries

## Chapter 1. Unleashing business innovation

*This chapter discusses how to improve Canada's business innovation in order to boost labour productivity and output growth. Many general framework conditions are highly favourable to business risk-taking and innovation, including macro stability, openness, strong human capital, low corporate tax rates, low barriers to firm entry and flexible labour markets. However, they can be improved further by reduced external and interprovincial barriers in network and professional service sectors, more efficient capital markets, fewer capital tax distortions and improved patent protection. A second focus should be on ensuring that incentives arising from government subsidies are targeted on actual market failures. The very high level of support to business R&D via the federal Scientific Research and Experimental Development (SR&ED) tax credit and provincial top-ups may weaken the incentives of small firms to grow and should be redesigned. A plethora of small, fragmented granting programmes, mainly geared to SMEs, should be streamlined for better academic-business collaboration. The large public share in venture capital should be wound down, as it may crowd out more productive private finance. A final focus should be on boosting manager and worker skills that are intrinsic to all forms of innovation, by filling gaps in training, mentoring and education.*

## Chapter 2. Tertiary education: developing skills for innovation and long-term growth

*The tertiary education system in Canada performs well in fostering a skilled workforce with generally good labour-market outcomes and is internationally recognised for its research contributions. Tertiary educational attainment is high, but participation rates will need to continue expanding to maintain the supply of highly skilled labour as the population ages and the needs of the knowledge-based economy rapidly evolve. This should be achieved by encouraging access to higher education for disadvantaged socio-economic groups, while enhancing the flexibility of the system to allow students with diverse needs to move between institutions more easily to meet their learning objectives. Immigration is another important source of skills that could be better utilised. The development of skills for innovation can be improved by increasing the integration of technical, business and communications skills training with practical industry experience within tertiary education programmes. In an environment of government spending restraint, the quality of tertiary education could be strengthened by increasing the distinction between institutions that target research and those that emphasise teaching and re-evaluating tuition policies in provinces where public finances are stretched.*

*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 2 May 2012. 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 24 May 2012.*

*The Secretariat's draft report was prepared for the Committee by Alexandra Bibbee, Calista Cheung and Shahrzad Mobasher-Fard under the supervision of Peter Jarrett. Research and editorial assistance was provided by Françoise Correia.*

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