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This survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

Also available in French

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The economic situation and policies of Canada were reviewed by the Committee on 6 June 2006. 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 20 June 2006.

The Secretariat's draft report was prepared for the Committee by Deborah Roseveare and Annabelle Mourougane under the supervision of Peter Jarrett.

The previous Survey of Canada was issued in December 2004.

BASIC STATISTICS OF CANADA

THE LAND

Area (thousand sq. km)	9 976
Agricultural area (2000, per cent of total area)	6.7

Population of major cities (thousands, 2005):	
Montreal	3 636
Toronto	5 304

THE PEOPLE

Population (2005)	32 232 391
Number of inhabitants per sq. km	3.2
Population, annual net natural increase (average 2000-05)	106 960
Natural increase rate per 1 000 inhabitants (average 2000-05)	3.4

Labour force (2005)	17 024 100
Employment in agriculture	343 000
Immigration (annual average 2000-05)	239 821
Average annual increase in labour force (2000-05, per cent)	1.7

THE PRODUCTION

GDP (million of Canadian dollars, 2005)	1 371 425
GDP per capita (Canadian dollars)	42 548
Gross fixed investment per capita (Canadian dollars)	8 812
Gross fixed investment (per cent of GDP)	20.7

Origin of gross domestic product (2005, per cent of total):	
Agriculture, forestry and fishing	2.3
Mining and quarrying	3.7
Manufacturing	17.1
Construction	6.0
Public administration	5.4
Other	65.4

THE GOVERNMENT

Government current expenditure on goods and services (2005, per cent of GDP)	19.3
Government gross fixed capital formation (2005, per cent of GDP)	2.5
Federal government current revenue (2005, per cent of GDP)	16.5
Federal direct and guaranteed debt (2005, per cent of current expenditure)	191.0

Composition of Parliament (June 2006):	Number of seats: House of Commons	Number of seats: Senate
Liberal Party	102	65
Conservative Party	125	23
New Democratic Party	29	1
Bloc Québécois	51	. .
Independent	1	5

THE FOREIGN TRADE

Exports (2005)	
Exports of goods and services (per cent of GDP)	37.9
Main goods exports (per cent of total):	
Agricultural and fish products	7.5
Energy products	19.2
Forestry products	8.1
Industrial goods and material	18.7
Machinery and equipment	20.9
Automotive products	19.5
Other goods	7.0
Main customers (per cent of commodity exports):	
United States	83.9
European Union	5.7
Japan	2.1

Imports (2005)	
Imports of goods and services (per cent of GDP)	34.1
Main goods imports (per cent of total):	
Agricultural and fish products	5.7
Energy products	8.7
Forestry products	0.8
Industrial goods and material	20.2
Machinery and equipment	28.6
Automotive products	20.2
Other goods	15.9
Main suppliers (percent of commodity imports):	
United States	56.5
European Union	12.0
Japan	3.9

THE CURRENCY

Monetary unit: Canadian dollar	

Currency units per US$:	
Year 2005	1.211

Executive summary

Canada's economic performance has been excellent in almost all respects and Canadians continue to enjoy among the highest living standards in the OECD. The economy is undergoing significant structural change in response to soaring commodity prices, expanding oil and gas production and exchange rate appreciation and has so far shown a remarkable capacity to adjust.

Looking ahead, the key challenges for all levels of government will be to lift productivity growth and to maintain sustainable fiscal and social policies to deal with the pressures arising from population ageing. Some broad re-orientations of policy should underpin the strategy.

Improve the overall business environment. *Businesses currently face high marginal effective tax rates on investment. At the same time governments offer a wide range of subsidies, special programmes and policies which are intended to help businesses but which inhibit competition in a number of sectors. A better approach would be to create a level playing field across Canada by lowering taxes on corporate investment, reducing subsidies and tax expenditures, and fostering vigorous competition in all markets.*

Foster innovation. *More economically efficient framework conditions for enterprises would also stimulate innovation and should be the top priority in the innovation strategy. Beyond that, special measures such as tax breaks to encourage business R&D should be re-examined and more emphasis placed on developing those literacy and other general skills that some Canadians appear to be lacking.*

Ensure fiscal arrangements are efficient. *Federal-provincial arrangements should reinforce accountability for outcomes. Ensuring the durability of the 2004 Health Agreement without renegotiation will play a key role. An immediate priority is to revamp the equalisation system. This is particularly relevant as Canada will likely face significant regional and industrial adjustments in response to continued high oil prices.*

Tackle disadvantage and strengthen social development. *Policies need to promote greater economic independence for low-income families by tackling the negative effects of income and benefit claw-backs, so as to make the shift from welfare to work, or earning additional market income, more attractive. Social policies need to deal more effectively with the underlying causes of poverty, especially by raising literacy skills and continuing to promote educational attainment. Moving towards free early education for all three and four year-olds may also pay social and economic dividends in the longer run. This could be complemented by more affordable access to childcare, especially for lower-wage working parents.*

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Assessment and recommendations

Economic performance has been strong

The Canadian economy has continued to deliver excellent results in nearly all respects. Output and employment growth have been robust, while the unemployment rate has fallen to its lowest level since 1974. Inflation remains comfortably under control, and the general government and current account balances are in surplus. Altogether, Canadians enjoy one of the highest living standards in the OECD, a result that reflects the pay-off from good macroeconomic management and the structural reforms put in place. But despite all these positive dimensions, hourly productivity growth in the business sector has been weak in recent years, although it showed a sharp pick-up in 2005.

Resource-rich provinces have surged ahead, but growth has also been reasonable elsewhere

Soaring commodity prices have led to booming activity in those provinces with abundant oil and gas resources, while the resulting exchange rate appreciation has had a damping affect in others, although even the economies of the slowest-growing provinces continue to expand at around 2% per year. Monetary policy settings appropriately reflect the average conditions across the country, but high demand in Western provinces has led to localised upward pressure on wages and prices. Nevertheless, significant economic adjustments are taking place in response to these large commodity-driven shifts in relative prices. To date, the economy has shown a remarkable ability to cope, through both increased inter-regional labour mobility and restructuring within the manufacturing sector where the least efficient firms have exited and less competitive industries have shrunk.

Key challenges for all levels of government are to raise productivity growth and maintain sustainable fiscal and social policies

Recent trends are likely to continue: mineral prices (especially oil) are expected to remain high, and oil sands production is projected to expand dramatically in coming years to reach close to 3.5 million barrels per day by 2015, more than offsetting declining conventional oil production. This will involve significant regional and national economic adjustments as well as windfall gains for public finances in resource-rich provinces. At the same time, Canada will soon see the baby boom generation passing into retirement and the proportion

of the population of working-age start to diminish. These demographic pressures present two key challenges:

- The first challenge is to raise productivity growth, which will become the key driver of higher living standards over the longer term. Both federal and provincial governments need to play a significant role here, using the policy levers that each is best placed to apply while ensuring appropriate collaboration and co-ordination in their efforts. Faster productivity growth in all parts of the country would also help to counter-balance some of the regional effects of energy developments.
- The second challenge involves ensuring that fiscal and social policies stay on a sustainable path across all levels of government, especially in the face of continued growth in health care costs. While windfall revenue gains linked to mineral-related taxes and royalties provide extra financing room to meet ageing challenges, they are also likely to lead to widening inter-provincial disparities in public finances.

Another task will be for the federal government to design its "Made-in-Canada" climate change programme so that as-yet undefined reductions in greenhouse gas emissions are achieved at the lowest possible economic cost.

Boosting productivity growth depends on improving the overall business environment

Establishing a more positive overall business environment is an essential requirement for both encouraging and enabling firms to make productivity-enhancing decisions. Indeed, if basic conditions do not allow businesses to flourish, then special programmes, policies and strategies directed at helping businesses may not do much good in many cases and considerable harm in others. The federal government and the provinces and territories between them have an extensive array of such measures. At the same time, some key dimensions of the underlying economic framework remain inefficient and need to be improved.

Business taxation discourages investment, especially in some provinces

Firms in Canada faced one of the highest average marginal effective tax rates (METRs) on investment in the OECD in 2005. This means a worthwhile investment project before tax is less likely to be profitable after tax in Canada than elsewhere, slowing the rate of capital-deepening that is one source of productivity growth. Both federal and provincial/territorial governments tax businesses in a range of ways, and firms face considerable variations in the METRs. Two elements of provincial taxation have an especially pernicious effect. First, provincial capital taxes are levied on debt and shareholders' equity beyond a threshold in six provinces, including Ontario and Quebec. These taxes directly raise the cost of financing business investment for larger firms. Abolishing capital taxes as rapidly as possible would significantly improve the business environment in those provinces. Second, provincial sales taxes are not generally refunded on capital goods purchased by firms. This directly raises the cost of purchased machinery and equipment, discouraging investment. Existing Canadian

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value-added taxes, such as the federal Goods and Services Tax (GST), the joint federal-provincial Harmonized Sales Tax in place in three Atlantic provinces and the Quebec Sales Tax, ensure that sales taxes are not imposed on investment purchases or intermediate goods used in production. Therefore, a shift by the five provinces (including Ontario) that still have retail sales tax regimes to provincial value-added taxes would create a more favourable investment climate.

Corporate tax should aim for a more level playing field, a broader base and lower rate

Corporate tax rules are complex at both the federal and provincial/territorial levels, and tax expenditures are significant. Both levels provide a significantly lower corporate tax rate for small businesses than for large ones. There are special federal tax breaks ranging from the Atlantic Investment Tax Credit through to sectoral tax credits, while provinces offer additional targeted measures. In addition, some provinces apply higher corporate tax rates to some sectors than others. All these factors combine to distort business decision-making by favouring manufacturing and primary production at the expense of services and penalising firms when, according to the tax rules, they grow from "small" to "large". They may also lead managers to modify their business strategies to optimise tax rules and steer the economy away from the most efficient use of resources. Against this backdrop, the government's announcement of further cuts in the federal corporate income tax rate is welcome, but it would be better still for all governments to undertake more comprehensive reform that broadened the corporate tax base and treated all businesses equally, regardless of size or sector. This would make room for a larger reduction in the standard corporate rate itself.

And value-added taxes could contribute a greater share of tax revenues

Canadian governments raise a higher share of government revenues by taxing businesses than do most countries and a lower share than most through value-added taxes, such as the GST. However, value-added taxation raises revenue more efficiently than either personal or corporate income tax, because it generally has a broader base and does less to discourage work, saving and investment. Nonetheless, the federal government has opted to reduce the federal GST rate from 7 to 6% and intends to cut it to 5% at some point. Provinces should take this chance to move closer to an optimal tax mix by lowering taxes on business and raising value-added taxes. This would include replacing provincial retail sales taxes with value-added tax structures harmonised with the GST. Doing so would provide a more productivity-friendly environment for business, without necessarily increasing the overall tax burden on consumers. If provinces do not take up this opportunity, then the efficiency of the overall tax structure in Canada will be reduced.

More efficient product markets would also encourage higher productivity growth

Vigorous product market competition on a level playing field leads both to a more efficient allocation of resources and to higher productivity growth. Although many product markets function well, there are some glaring exceptions where policy reforms are needed, including:

- Liberalising highly regulated provincial electricity markets to obtain more efficient generation and use of such energy as well as to provide clear price signals for investment.
- Lifting restrictions on foreign direct investment in airlines, telecommunications and broadcasting to boost competition by making the threat of entry more credible and to allow for infusion of new technology and management into those sectors.
- Dismantling the remaining obstacles to inter-provincial trade in services and promoting more vigorous competition in services by reducing the number of so-called "regulated occupations" to those where significant irreversible harm is likely and the benefits of restrictions clearly outweigh the costs.
- Winding up agricultural supply management schemes and instead allowing prices in open markets to balance supply and demand. This would not only give all farmers more opportunities, it would also lead to significantly lower prices for Canadian consumers, especially for dairy products where large scarcity rents have been artificially created.
- Minimise subsidies that distort competition, which include both some large one-off packages to specific companies and a plethora of programmes providing grants, soft loans and advice. This would reverse the rising trend in government transfers to business.
- Introducing employer experience rating for unemployment insurance to remove the significant and persistent cross-subsidy to firms that repeatedly use that system to cover their seasonal and temporary workers. Alternatively, this subsidy element could be reduced by tightening the relevant eligibility criteria to limit access for seasonal and temporary workers.

Financial market efficiency could be improved

Efficient financial markets contribute to the rate of growth. Overall, Canada's financial sector is well developed and diversified and has performed reasonably well. However, some policies, such as bank ownership restrictions and political approvals for bank mergers, may impede gains in efficiency. Further streamlining entry requirements in banking would make it easier for new players, foreign or domestic, to enter the market, thereby adding to competitive forces in the sector. Provinces currently exercise responsibility for regulating securities markets. Substantial gains could be achieved by establishing efficient and effective Canada-wide securities regulation, but governments to date have not agreed on the appropriate model to adopt. Every effort should be made to reach a decision as quickly as possible.

A more dynamic business environment would also foster greater innovation

Innovation in all its forms – product, process, organisation and marketing – is a key source of productivity growth that is most easily generated in a positive overall business environment.

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But some key aspects of innovation remain relatively poorly understood, making it difficult to design optimal innovation policies. Thus, more research into understanding the innovation process may provide significantly better value for money than launching costly new initiatives based on relatively weak analytical underpinnings. Particular attention could be paid to factors that spur businesses to innovate, which have received less policy attention than the supply of innovation inputs, most notably research and development (R&D). A clearly articulated and integrated national science and technology policy to steer decisions in public research is also needed.

Measures to stimulate business R&D should be re-examined

Federal and provincial governments have a more generous array of tax credits and grant programmes designed to encourage business R&D expenditure than most OECD members. Nevertheless, business expenditure on R&D as a share of GDP remains lower than in many OECD countries. The Scientific Research and Experimental Development (SR&ED) investment tax credit is one of the most generous by OECD standards and is refundable for small Canadian-controlled private corporations. The preferential treatment for these businesses reinforces other policies that may discourage firms from growing, which is unfortunate because larger firms are more likely to undertake both R&D and innovation. An alternative approach of more closely targeting tax credits on R&D undertaken by new firms rather than small firms *per se* and on incremental R&D could be explored. But such tax credits need to be carefully designed in order to bring forth new innovation while minimising deadweight costs.

But skill levels for some Canadians still fall short of requirements for a knowledge-based economy

There is a well-established link between human capital and productivity growth, not least because it helps facilitate the diffusion of innovation outputs through the economy. Although Canada has a high share of the population with post-secondary qualifications, a lower share have degrees and especially advanced qualifications than in the United States, for example. Actual skills and competencies – what people can do – are also important. While literacy, numeracy and problem-solving skills are relatively well developed in Canada, progress is needed if the country is to achieve world-best shares of the working-age population at or above the levels deemed necessary to function successfully in a modern economy and knowledge-based society. More effective strategies are needed to lift adult literacy and general skills levels. Flexible co-financing arrangements may help to boost lifelong learning, but they should be carefully designed to minimise deadweight losses. Workplace training plays an important role in human capital development; yet it is much more likely to take place in large firms, providing another reason for removing barriers to enterprise expansion.

A cautious approach should be taken to perceived gaps in financing for innovation

Although Canada has one of the highest flows of venture capital investment in the OECD, rates of return on investments have been poor. This is largely attributable to the role of the

Labour-Sponsored Venture Capital Corporations (LSVCCs), which ostensibly have social development objectives but also function as a tax shelter for individual savers. Their presence has lowered the average quality of deals and crowded out other venture capital funds. The tax advantage afforded to the LSVCCs should be removed so as to enable the venture capital market to play its role in innovation more effectively. More broadly, it is difficult to find evidence that access to finance is a binding constraint on innovation in Canada, and, despite claims by some lobby groups, no clear policy gap needs to be addressed.

Public finances need to be kept on a sustainable path

The second main challenge for the Canadian economy is to make sure that fiscal and social policies are on a sustainable path: this requires dealing with ageing pressures, federal-provincial arrangements and poverty traps. Fortunately Canada's public finance position is strong, one of the healthiest of any OECD country. The federal government's reaffirmed commitment to the objective of reducing net debt to GDP to 25% by 2013-14, one year earlier than previously announced, is welcome. In line with this target, the government plans to achieve annual debt reduction of CAD 3 billion (0.2% of GDP), after allowing an as-yet unallocated amount for future priorities. Given the continuing use of a nominal budget anchor, well-defined rules for allocation of revenue windfalls, designed to ensure budgetary sustainability, are appropriate. The 2006 budget proposal to allocate a portion of unplanned surpluses to the contributory public pension plans (CPP/QPP) is therefore useful, as long as it does not flow through into lower contribution rates or benefit enhancements in the short term. This would also enhance intergenerational equity.

A stronger mechanism is needed to monitor the long-term fiscal outlook

Virtually all OECD countries are facing ageing pressures – not just with the baby boom but also because people are living longer. Fortunately, Canada's public pension systems are in good shape. But the demographic component of future spending on health care and looking after the frail elderly will have a significant impact on the overall long-term fiscal position. Future health spending will also depend on non-demographic upward cost pressures that have proved difficult to restrain for a sustained period of time. To monitor and manage these pressures, Canada should follow the lead of other OECD countries and establish an official and credible mechanism for monitoring long-term fiscal prospects (10 to 40 years ahead). To be both consistent and comprehensive, it would need to cover all levels of government, especially if inter-provincial mobility continues to increase, and to set out clearly the assumptions and the uncertainties surrounding such a long-term outlook.

The federal government should step back from trying to steer in areas of provincial responsibility

Negotiated agreements have become a feature of federal-provincial financial arrangements in a range of policy areas, including health care and social affairs. But, as provinces and territories have primary responsibility for delivering these services, this approach dilutes accountability

for results. In effect, it creates an incentive for provinces and territories to seek to negotiate more transfers from the federal government, rather than take larger, but possibly more difficult, steps towards improving their own performance. The September 2004 agreement between the federal government and the provinces set out 10-year arrangements for strengthening health care, accompanied by an additional CAD 41 billion in new federal funding. It provides provinces and territories with a clear basis for planning and allows them to concentrate their efforts on delivering better results than achieved under previous frameworks. But, as stressed in the previous *Survey*, to achieve efficiency gains these arrangements should be made impervious to any further renegotiation efforts over their 10-year lifetime. To be consistent with this approach, going forward, the federal government needs to resist the temptation to promise improved performance standards, such as a wait-times guarantee, on which only the provinces and territories are able to deliver.

Over the longer term, cutting back federal taxes and transfers somewhat would also reinforce accountability of provincial governments

For the longer term, consideration should be given to strengthening provincial governments' accountability by reducing federal taxes and trimming non-equalisation transfers to the provinces back to levels more consistent with the externalities they are designed to offset. This would leave provinces with more scope to generate their own revenues and fund services as they see fit. The Canada Health Transfer and the Canada Social Transfer are essentially based on per-capita formulae, although detailed rules have evolved governing their inter-provincial distribution. These transfers involve both "fiscal churning" (where the federal taxes raised within a province are returned to that province via transfers) and inter-provincial redistribution. Separating these two elements would reinforce provincial governments' accountability for service delivery and make more transparent the redistributive nature of financial flows between levels of government.

Equalisation transfers need to be revamped

In the near term, the priority should be on revamping the equalisation system. This is especially critical given that continued high oil prices will likely lead to significant further regional and industrial adjustments in Canada. Transfers from the federal government currently designated for equalisation are based only on the fiscal capacity of provinces, *i.e.* their ability to raise revenue if they applied average tax rates to each of their tax bases. Separate arrangements for territories recognise their significantly lower fiscal capacity. Equalisation transfers provide the opportunity – though not the requirement – for provinces to offer comparable levels of public services for comparable levels of taxation. Although in principle equalisation is formula-driven, in practice, significant *ad hoc* elements have been negotiated over the years. The incentives facing receiving governments are complex, but one effect for receiving provinces is to induce some trade-offs between equalisation payments and provincial policies that would boost economic performance. They also encourage them to seek "technical adjustments" that allow them to maximise their transfers. The extent of inter-provincial equalisation is ultimately a social choice, and while there is considerable public support for equalisation in principle, there appears to be considerable dissatisfaction with the present arrangements. One current source of tension – the appropriate treatment of rents from

natural resources – is only likely to grow, especially given Alberta's sharply rising oil sands output and associated government revenues. While reform options are still under discussion, changes to equalisation should aim for a transparent outcome that defines the rule and sticks to it and that also encourages provinces to maximise their own growth opportunities.

Provincial governments need to promote economic independence for low-income families

Canada's economic success also provides a strong backdrop for the task of tackling some outstanding social issues and improving equality of opportunities. Although considerable progress has been made in recent years, low-income families still face very high METRs, which reduce the reward from working longer hours, taking on greater responsibilities or investing in upgrading skills. There is still scope for some provinces to reduce the cost of shifting from welfare to work by adjusting rules on the loss of benefits, including health coverage and housing. Working parents also face high METRs, as family benefits are clawed back over a range that reaches up towards the median income level. This problem is far from unique to Canada and can be difficult to tackle without shifting from means-tested to universal child benefits, but this would involve either lower benefits for low-income families or high budgetary costs. The government's new Universal Child Care Benefit enhances horizontal equity for families with children aged less than six years. It points towards one option for managing the trade-off, namely shifting away from means-testing towards universal benefits but limited to young children. Households with school-age children would then have to rely more heavily on earned income, but all families would face lower METRs. However, poverty risks remain elevated for low-paid working single-parent households: these could be attenuated through well-designed in-work benefits and additional help with out-of-school childcare costs. Further policy reform is needed to strengthen work incentives by reducing high METRs faced by lower-income families, without increasing poverty risk or putting budgets under undue pressure. And in general, the implementation of effective activation policies would help to improve employment prospects of low-wage job seekers.

Social policies need to address the underlying causes of poverty

Economic growth over the past decade has significantly reduced the share of Canadian families with incomes below the Low-Income Cut-Off (LICO) level, especially those headed by a female lone parent. Nevertheless, almost 13% of children under the age of 18 are living in low-income families, with Aboriginals or immigrants forming a disproportionate share. The underlying reasons are complex but are reflected in higher rates of educational failure, health problems, family dysfunction and so forth. Tackling the underlying reasons for poverty, especially by enhancing literacy skills and continuing to promote educational attainment, will both help productivity growth and improve equity and social cohesion. In the short run, successful programmes to tackle these problems may be more expensive than just giving people income transfers. But it is an investment approach to social policy that would raise the prosperity of all Canadians in the longer run. One effective strategy to break the inter-generational cycle of poverty would be to provide the means for disadvantaged children to access parenting support services from the first months of life and high-quality early childhood education from an early age.

The option of providing free early education for three and four year-olds should be considered by provinces and territories

Canada could gain a payoff from extending free high-quality early education to all children from an earlier age – a point that has been largely overlooked in the current debate over the provision of childcare for working parents. In most Canadian provinces and territories children are offered free education only from age five, although Ontario has reasonably widespread coverage for four year-olds. This is somewhat later than in many OECD countries. Lowering the age at which free education is available would mean increasing provincial expenditure, but the available evidence indicates that early education provides a significantly higher social return than post-secondary education, which is currently more generously funded. Indeed, on several occasions in recent years, provincial governments have individually and collectively acknowledged the importance of early learning. Provinces and territories should recognise the benefits of high-quality early education with the idea of moving towards providing this service free for all three and four year-olds. Although this is likely justified on its own merits, it would also reduce the need for full-time childcare for working parents, lowering their weekly out-of-pocket costs.

Working parents need access to affordable childcare

The availability of suitable wrap-around childcare for out-of-school hours and high quality all-day care for young children remains a contentious issue. Childcare availability and cost can affect both the decision to take up paid work or to increase working hours, especially for mothers. However, employment rates for mothers are reasonably high, suggesting that cost may be a barrier only for lower-income households and that higher childcare subsidies overall could have significant deadweight costs. Options to provide additional assistance for low-income working parents to defray childcare costs should be examined. It is difficult to assess whether availability of suitable childcare is a separate obstacle for working parents and why the supply response has not been stronger, given reports of long waiting lists for some childcare centres. However, provinces and territories need to monitor their childcare policies carefully to ensure that they both allow supply to respond to parental preferences and avoid imposing prohibitively expensive regulatory requirements.

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Chapter 1

Managing the challenges ahead

The Canadian economy has performed well in recent years, and its per capita GDP gap with the United States has been narrowing, once adjustment is made for terms-of-trade gains. However, a number of challenges lie ahead. Rapid population ageing is expected to affect the size of the workforce and weigh on public finances through a surge of elderly and health care spending. Improving productivity performance will be crucial to achieving durable prosperity gains, given the nation's already high employment rates. In addition, it will be important to ensure that the federal and provincial fiscal arrangements, as well as social policies, are on a sustainable path.

This chapter begins by describing Canada's recent macroeconomic performance and short-term projections. It then turns to detailing ongoing structural changes that have started (or will soon start) to affect the economy, including population ageing and rising regional dispersion. Finally, it presents the key challenges the Canadian economy is going to face in the next few years.

Macroeconomic performance

The economy has been extremely resilient

Despite a marked currency appreciation in the last couple of years, the Canadian economy has experienced fairly robust economic growth. This reflects sound and credible economic policy management as well as structural reforms already implemented in most product and labour markets (Annex 1.A1). Recently, the economy, which is very open and resource-based, has also benefited from substantial energy-related revenue streams (Box 1.1). As a result, the terms-of-trade adjusted measure of GDP per capita relative to the United States has been increasing, even though the conventional measure of relative GDP per capita has been falling (Figure 1.1). Strong employment gains have offset the impact of the shortfall in productivity on the GDP per capita gap.

Overall, recent macroeconomic performance has been excellent on most fronts. Since 2000, annual economic growth has been stronger than in the remaining G7 countries. Led by dynamic private investment and consumption, final domestic demand has been the major contributor to growth (Figure 1.2). Strong profits, particularly in the resource sector, and rising capacity utilisation have been boosting non-residential investment. Despite the gradual rise in real interest rates since mid-2005, private consumption has exhibited sustained growth, spurred by favourable income and wealth effects. However, the sustainability of strong private consumption growth in the next few years remains uncertain, as the currently very low saving ratio is likely to rise, especially if there is a fall in net worth (Box 1.2).

Export volumes have been affected by the rapid appreciation of the Canadian dollar, associated with the rise in most commodity prices, and import volumes have grown strongly since 2004. At the same time, the country has benefited from income gains through substantial terms-of-trade increases since mid-2005, as energy and metals prices have soared. In addition, interest payments on foreign debt have dropped because of the appreciation, so that the current account was an upward trend during the course of 2005.

Headline inflation has moved in line with oil and gasoline prices, but has rarely exceeded the upper part of the monetary policy inflation target range. Despite the oil-price surge, core and wage inflation have been moderate, indicating the absence of second-round effects. However, there are signs of localised wage pressures in some provinces (see below).

House prices have increased in the past few years, although less than what has been observed in several other OECD countries. Moreover, these rises have been much more subdued than those experienced in the late 1980s, and there are few signs of speculative activity in the Canadian housing market. Indeed, these developments have been supported

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Box 1.1. **Commodity prices and structural changes in the Canadian economy**

Commodity prices, particularly energy prices, have been soaring since 2003. They have led to a rapid appreciation of the Canadian dollar and engendered a number of changes in the economy.

The rise in commodity prices has generated large revenues...

Firms in the energy sector have been the main beneficiaries of the oil price hike, and profits have hit record levels. Wealth generated in resource stocks has also helped sustain household spending and offset the impact of higher headline inflation arising from energy prices. Energy-rich provinces (most notably Alberta) and the federal government have enjoyed important windfall revenue gains as well. Currently, royalties and taxes derived from exploration and production companies are estimated at approximately CAD 23 billion for 2006. These revenues do not include the contributions from all the extra peripheral economic activity generated and will fluctuate with future oil price developments.

... and catalysed structural changes

In addition to short-term macroeconomic effects, the surge in commodity prices has induced ongoing fundamental structural changes within the economy. Changes in relative prices have triggered shifts in employment and investment toward the energy sector. Some businesses, notably clothing and auto manufacturers, have been squeezed by the combination of soaring input costs, the rising currency and increased competition from Asian countries. The forestry sector has also been suffering, and the high-tech sector and ICT services slowed last year. By contrast, the energy sector has been booming, and a number of other sectors such as construction and transportation have benefited from this boom. As a result, some provinces' economies have been increasingly pushed against their capacity limits, especially in Western Canada.

But the energy sector is itself changing rapidly. At current oil prices, non-conventional oil and gas sources such as oil sands, coal-based methane and liquefied natural gas have become profitable and investment has surged to develop these production sources. Investment in oil sands expanded by 55% last year, and numerous new projects over the coming decade have been announced. As conventional oil reserves in Western Canada move towards exhaustion, the share of production from non-conventional sources will be of growing significance. Today, oil sands production accounts for one out of every two barrels of supply in Western Canada. By 2015, it is estimated that the oil sands share of production will rise to three out of every four barrels, lifting Canada's total oil output to 4.6 million barrels per day compared with 2.5 million barrels per day in 2005. All these new energy sources will require large investments in infrastructure and an adequate workforce of qualified trades, technical and professional people.

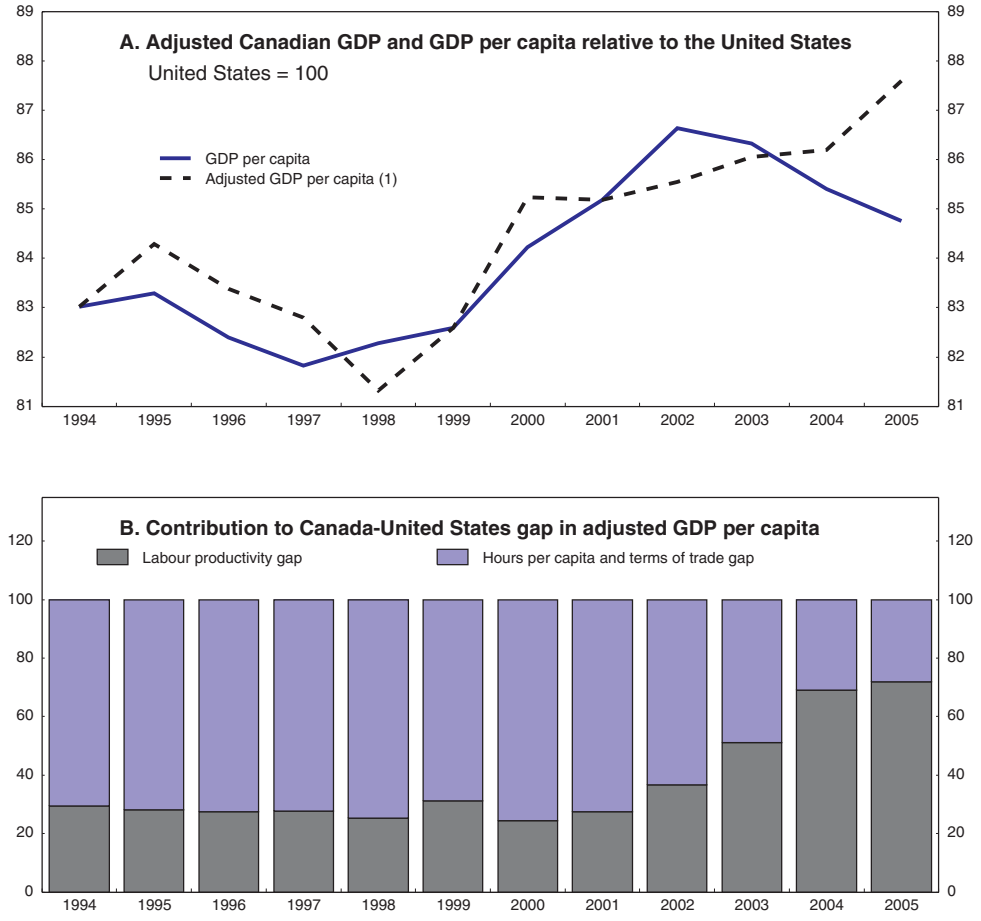
Looking forward, these trends are likely to continue

Energy reserves are plentiful in Canada. Alberta's oil sands reserves are estimated at 175 billion barrels deemed economically recoverable with today's technology. Those reserves place Canada second behind Saudi Arabia in the world ranking of crude oil reserves by country. Given current technologies, reserves could sustain production of 2.5 million barrels per day for over 200 years.

The most important uncertainty facing Canada is related to future oil price developments. The current energy price hike is likely to last for some time, and futures prices point to a sustained high oil price for years. However, projections remain uncertain and so are future revenue streams. Global supply-side pressures have also risen lately, because of production interruptions and geopolitical risks.

Source: Cross (2006), Canadian Association of Petroleum Producers (2005 and 2006), ARC Financial Corporation (2006).

Figure 1.1. **GDP per capita**
Per cent



1. The adjusted GDP per capita is corrected for the terms of trade and is measured using the price of consumption.
Source: Department of Finance Canada calculations.

by low interest rates and rising real disposable income. Overall, the risk of a marked reversal in house prices in major Canadian markets appears limited, even though some imbalances may exist in certain local segments.

Most of the labour-market trends observed since 2000 have intensified of late, as the economy has started adjusting to commodity price shocks. In particular, there has been a resurgence of construction and resource jobs, especially in rural areas, while factory jobs have fallen. Employment growth in public services has been restored after the cuts in the 1990s. Strong employment growth has been observed in large firms, and especially in multinational resource companies. Most of these new positions have been full-time. Job growth has outstripped labour force increases, pushing the unemployment rate down to a more than three-decade record low and below OECD estimates of its structural level.

The most disappointing factor has been the poor hourly productivity growth particularly in 2003 and 2004, although productivity growth picked up substantially in 2005 in the business sector. In particular it has been very strong in the manufacturing sector, reflecting the emphasis employers have put on boosting productivity in the face of the squeeze on

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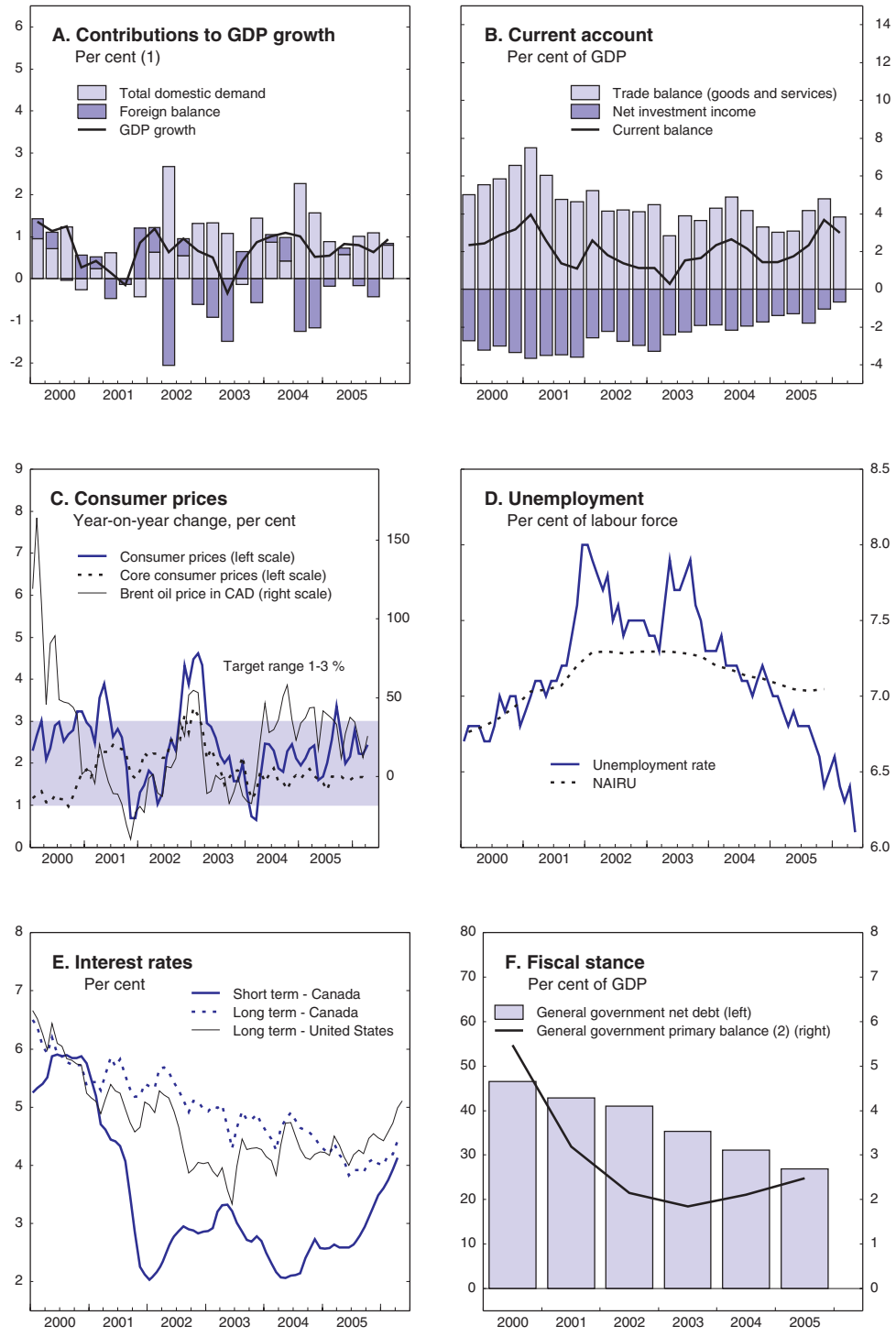
Figure 1.2. **Macroeconomic performance**



1. The sum of the contributions does not equal GDP growth because the data are chained-linked and the statistical discrepancy is not included.
2. Cyclically adjusted as per cent of potential GDP.

Source: Statistics Canada; OECD, *Economic Outlook 79*.

Box 1.2. **Are Canadians over-consuming?**

The National Accounts measure of the household saving ratio has been falling since 1982 and has reached historically low levels as households have been consuming an increasing share of current incomes in the last two decades (Statistics Canada, 2005). Such developments have raised concerns that recent private consumption growth, one of the main drivers of expansion in the last few quarters, may not be sustainable. This may also signal that Canadians households are not saving sufficiently, despite a context of ageing populations.

However, some explanations for why households have been willing and able to save so little suggest there is no cause for concern. In the present economic environment characterised by comfortable current account and general government surpluses, the need for high private savings may be less important. There are also some measurement issues related to the National Accounts saving ratio. Adopting a harmonised definition of savings across countries would move Canada's household saving ratio to the middle of the OECD range (Catte and Boissinot, 2006). The adjustment would correspond to a change in the treatment of consumer durables and of public services, the definition of households, the relative importance of indirect and direct taxes and the structure of the pension system. Moreover, the correction for capital gains (or losses), which is currently not made in the National Accounts measure, would also tend to increase the level of the saving ratio, although it would also augment its variability. An alternative measure based on National Balance Sheet accounts does not appear to be unusually low (relative to its long-term average) and suggests that the level of personal saving remains healthy.

However, future developments are highly uncertain, and the household saving ratio will be influenced by changes in net worth (in which housing wealth is a major component). This can be demonstrated more precisely with simulations using a standard consumption equation in which consumption growth is explained by income, nominal net worth, interest rates and inflation. These suggest that if net worth remains constant over the next two years, the saving ratio (National Accounts measure) would increase by about 1 percentage point from the fourth quarter of 2005 to the end of 2007. If net worth grows by 1% per quarter, the ratio would edge up by 0.3 percentage points and if net worth falls by 1% per quarter it would increase by 2½ percentage points. Rises of the latter amplitude were experienced in the late 1980s.

profit from rising input costs (notably energy) and lower prices for their exports as a result of the appreciating exchange rate. At the same time, some of these effects may have been compensated by low import prices in import-competing sectors. At this stage, it is too early to assess whether this improvement in productivity growth will be durable (see below).[1]

Nevertheless, financial markets have performed well. Equity markets have improved over recent months, and Canadian stocks (TSX) have outperformed their US counterparts (SP500), reflecting the large share of energy in the Canadian indices. Market volatility – as measured by interest rate variability – has been declining since the end of 2001, reflecting *inter alia* steady economic growth. As in many OECD countries, the present cycle has witnessed some atypical bond-market developments leading to a flattening of the yield curve, but this stems from international developments, including excess savings over investment at the global level. One risk over the medium term is that the persistence of low yields on long-term bonds causes a reallocation of risk within the banking sector and contributes to possible mis-pricing of risky assets. However, such a risk is not likely to destabilise the banking sector: the financial system remains sound (Bank of Canada, 2005a).

Against this background, the Bank of Canada has increased its policy rate by 175 basis points since September 2005 and has indicated that some modest further increases might be required. The conduct of monetary policy is rendered more difficult by the large sectoral and regional shifts currently under way in the Canadian economy (see below), which increase uncertainties about the extent of capacity pressures and their effects on inflation. Indeed, monetary policy can only operate at the national level and current settings may not be appropriate for some fast-growing provinces. Fiscal policy in these provinces needs to adjust to avoid overheating.

Budget priorities show a number of similarities across provinces. Most provinces have directed additional spending to health, education, childcare and infrastructure. There is also a general trend toward cuts in personal income and business tax, in particular for small businesses, as well as tax incentives to promote business R&D. Capital tax rate cuts have been slightly accelerated in Ontario. Windfall gains will help to finance these measures in energy-based provinces. Overall fiscal discipline has been maintained, and many provinces have some form of debt-reduction target rules.

On the federal side, the government has reiterated the previous commitment to lower the debt-to-GDP ratio to 25% and advanced the goal by one year to 2013-14. A CAD 3 billion reduction of the federal debt is planned this year and next. The Budget also includes a number of tax changes, including a cut in the federal Goods and Services Tax (GST) from 7 to 6% this year as well as cuts in personal income taxes and in corporate taxes, especially for small firms.[2] The main federal spending initiative is the new Universal Child Care Benefit for families with children under six. Some additional funds have also been allocated to agriculture, national security and defence. Overall, spending is expected to grow slightly less rapidly than GDP, contrary to what has been observed in the past. In this context, fiscal policy is expected to be mildly expansionary over the next two years.

Looking ahead, the economy is expected to grow at a solid pace in 2006 and 2007, as exports benefit from strengthening external markets and domestic demand remains strong (Table 1.1). Private consumption should be boosted by the cut in indirect tax this year, and both private consumption and investment should continue to be robust, spurred by past terms-of-trade improvements. The federal GST cut should result in a dip in headline inflation, although some of the cut will also be absorbed by a rise in profit margins. As the positive output gap builds up, inflation should gradually edge up toward the upper range of the monetary target band by 2007, attenuated by the increase in interest rates. The unemployment rate may continue to decline, though at a slower pace than in the last two years. The current account surplus is projected to remain broadly stable.

Structural changes affecting the economy

Canada's economic growth relies heavily on trade with the United States

Canada's economy is very open, and most of the variability in its business cycle can be explained by trade developments. Since the inception of the Free Trade Agreement with the United States in 1989, economic relations with the United States have intensified, and currently more than 80% of all Canadian exports go to the United States (Figure 1.3). Although Canada has certainly benefited from tight links with a very dynamic US economy, this dependence has also increased its exposure to US developments. *First*, the Canadian economy would be markedly affected by any slowdown in the US economy. In particular, this is true for the energy sector, which is destined to play a crucial role in Canada in the

Table 1.1. **Short-term outlook**
Annual percentage change, volume (chained 1997 Canadian dollars)

	2000 (per cent of GDP)	2004	2005	2006	2007
Demand and output					
Private consumption	55.5	3.3	3.9	3.6	3.6
Government consumption	18.3	3.0	2.7	3.1	2.9
Gross fixed investment	19.7	8.0	7.1	6.5	3.7
Public[1]	2.3	3.4	6.9	5.9	2.8
Private residential	4.5	7.7	3.2	4.2	–0.5
Private non-residential	12.9	9.1	9.4	8.0	6.2
Final domestic demand	93.5	4.2	4.3	4.1	3.5
Stockbuilding[2]		0.1	0.4	–0.4	0.0
Total domestic demand	94.8	4.3	4.8	3.7	3.5
Exports of goods and services	44.9	5.2	2.1	2.9	4.3
Imports of goods and services	39.8	8.2	7.1	4.6	5.0
Net exports[2]		–0.9	–1.5	–0.5	–0.1
Statistical discrepancy[2]		0.1	0.0	0.1	0.0
GDP at market prices	100.0	3.3	2.9	3.1	3.3
Prices and employment					
GDP implicit price deflator		3.0	3.2	3.1	1.9
Private consumption price deflator		1.5	1.7	1.5	1.6
Total employment		1.8	1.4	1.7	1.6
Unemployment rate		7.2	6.8	6.4	6.2
Memorandum items:					
Government net lending (per cent of GDP)		0.5	1.4	1.3	0.8
Short-term interest rate		2.3	2.8	4.1	4.7
Current balance (per cent of GDP)		2.1	2.3	3.0	2.9
Output gap (per cent of potential GDP)		0.2	0.0	0.2	0.4

1. Excluding nationalised industries and public corporations.
2. Contribution to GDP volume growth.
Source: Secretariat's update of *OECD Economic Outlook 79* using May 2006 National Accounts' releases.

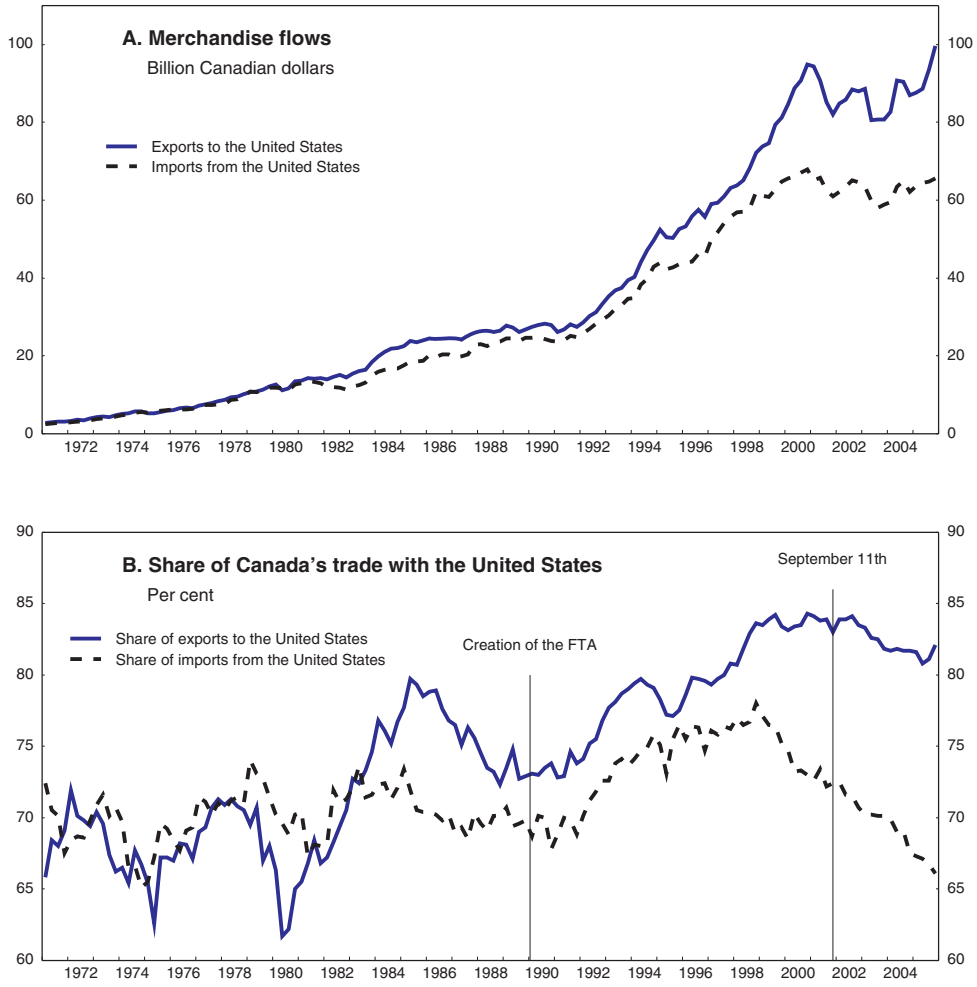
years to come. Almost all Canadian energy exports (95%) went to the United States in 2005. *Second*, with rising imbalances in the US economy, the Canadian dollar may appreciate, further hurting trade-exposed sectors.[3, 4] *Third*, trade disputes such as the wheat dispute may be particularly detrimental to developments in certain sectors, souring trading relations, although a framework agreement to resolve the long-lasting softwood lumber dispute has been achieved.

Lastly, increased security measures since 11 September 2001 have augmented the cost of cross-border trade between Canada and the United States. However, a number of programmes have been set up to reduce traffic congestion and uncertainty at border crossings.[5] As a result, processing times have been shortened and both the United States and the Canadian governments are committed to improving the predictability and efficiency of cross-border trade and travel.

Regional convergence has slowed

Reaction to an oil price rise is quite diverse across Canadian provinces, reflecting marked provincial differences in terms of resource endowment, population, industrial specialisation, and labour and product markets (Table 1.2 and Figure 1.4). Such a shock will affect short-term economic growth, the pace of convergence and/or the long-term growth

Figure 1.3. **Trade between Canada and the United States**



Source: Statistics Canada.

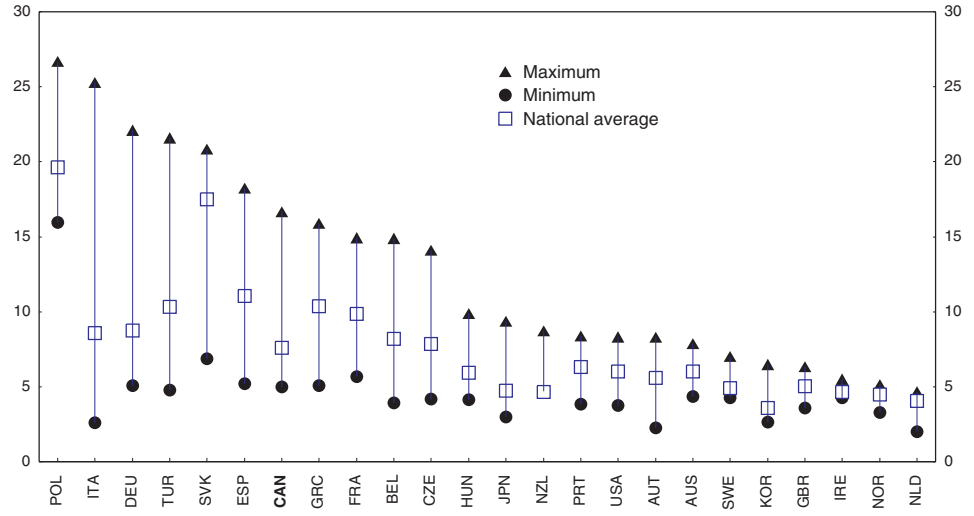
Table 1.2. **Provincial GDP per capita and population**

	GDP per capita (chained 1997 CAD)		Share in total population (per cent)	
	1982	2005	1982	2005
Newfoundland and Labrador	14 464	29 655	2.3	1.6
Prince Edward Island	14 976	24 862	0.5	0.4
Nova Scotia	17 540	27 242	3.4	2.9
New Brunswick	16 564	27 882	2.8	2.3
Quebec	21 081	31 526	26.2	23.5
Ontario	25 847	38 534	35.5	38.9
Manitoba	21 069	30 622	4.2	3.6
Saskatchewan	20 872	34 420	3.9	3.1
Alberta	28 031	43 596	9.4	10.1
British Columbia	26 062	33 849	11.4	13.2

Source: Statistics Canada.

Figure 1.4. **Regional disparities in labour market performance**[1]

Regional unemployment rates in percentage, 2003[2]



1. Region size differs by country.
2. 2000 for Japan, Korea, New Zealand and Switzerland.

Source: OECD (2005), *Employment Outlook*, Paris.

of the provincial economies, depending on whether it is temporary or sustained over time. There has been a continuous trend in regional convergence since the 1980s. However, there is evidence that the pace of convergence toward Alberta's income level has slowed in periods of high oil prices, in particular for the larger provinces (Ontario, Quebec and British Columbia) (Box 1.3).[6]

This phenomenon has intensified with the last year's record oil price surge. Indeed, resource-based provinces have benefited from substantial energy windfalls, in particular Alberta, which has the biggest share of conventional oil production in Canada. Rising energy prices have generated a large quantity of cash for investment but also created growing competition for the limited supply of skilled workers and soaring housing prices (Figure 1.5). By contrast, provinces specialised in manufacturing industries (such as Ontario) have faced intense pressures from the combination of a rising Canadian dollar, high energy costs and the strengthened competition from Asian economies. But these pressures are more likely to have been somewhat attenuated by spillover effects from the economic boom in Alberta, and overall, Central and Atlantic provinces have continued to grow at a solid pace and have seen declines in their unemployment rates.

If the oil and gas price stay high for some time, capital and labour will need to be transferred to the resource sector, affecting the structure of the economy. Such transformation has already started to occur over the last three years. Inter-provincial (and international) migration toward Alberta has surged, attracted by the dynamic economic expansion and a favourable taxation system. Looking forward, expectations of high and sustained energy prices have generated incentives to invest in higher-cost sources of energy, in particular in Alberta's oil sands, but also in offshore oil supplies and liquefied natural gas terminals in the Atlantic provinces. As such, the growth advantage of energy-rich regions, in particular Alberta, is likely to persist in the coming years.

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Box 1.3. **High oil prices and provincial convergence**

This box presents some empirical evidence that the pace of convergence between provinces has diminished in period of high oil prices. Thus, if the oil price stays persistently high, as currently predicted by most forecasters, regional convergence may be expected to slow over time.

The process of convergence of each province towards the leading province, Alberta (which has the highest GDP per capita on average over the period) is assumed to have the following form:

$$\Delta \log\left[\frac{GDP_{i,t}}{pop_{i,t}}\right] = c_{1,i} + c_{2,i} * \Delta \log\left[\frac{GDP_{al,t}}{pop_{al,t}}\right] + c_{3,i} * \left(\log\left[\frac{GDP_{i,t}(-1)}{pop_{i,t}(-1)}\right] - \log\left[\frac{GDP_{al,t}(-1)}{pop_{al,t}(-1)}\right]\right) + \sum_{n=4}^{7} c_{n,i} * x_{it}^{n}$$

where:

$\frac{GDP_{i,t}}{pop_{i,t}}$ is the GDP per capita of province i at time t. It is expressed in real terms and deflated by provincial CPI.

$\frac{GDP_{al,t}}{pop_{al,t}}$ is the GDP per capita of Alberta at time t. It is expressed in real terms and deflated by Alberta's CPI.

x_{it}^{n} represents exogenous factors that can affect provincial growth developments such as the real long-term interest rate (deflated using provincial CPI), Canada's terms of trade and a trend (which captures provincial increases in the stock of human capital and other factors).

The coefficient $c_{3,i}$ is negative and measures for each province the speed of convergence towards the leading province. Its value has been estimated over two regimes using annual panel data over the period 1981-2005 with the Seemingly Unrelated Regression method: a low-oil-price regime (below CAD 30 per barrel) and a high-oil-price regime (above CAD 30 per barrel).

The main results are as follows.

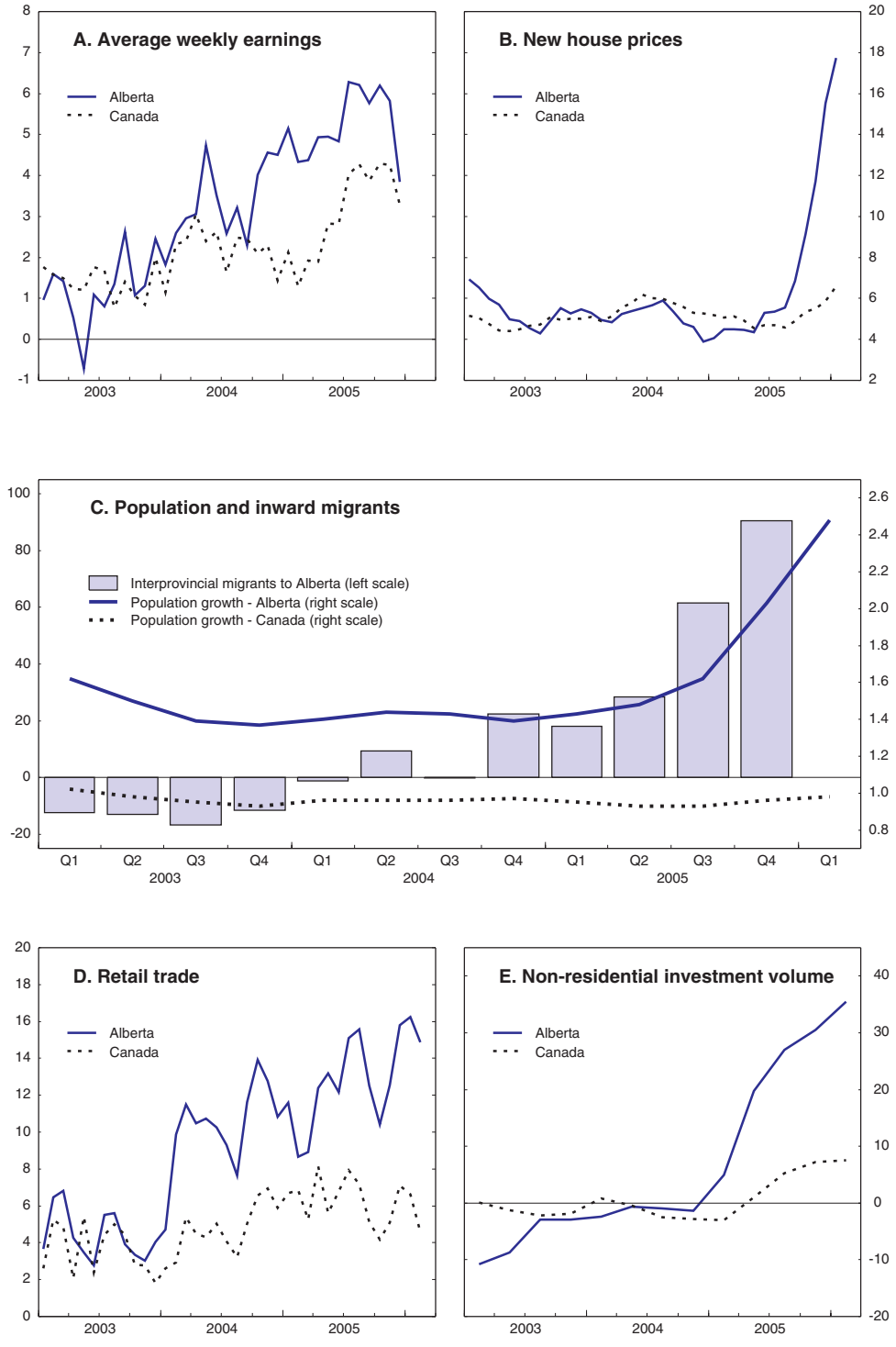
- *First*, the pace of convergence appears to be slower in periods of high oil prices (Table 1.3) in all provinces except Newfoundland and Labrador and the difference between the two regimes is found to be statistically significant. Despite the change, the speed of convergence is still rapid in Saskatchewan, which is also rich in energy resources.
- *Second*, there is no evidence that the convergence speed has changed between the two regimes in Newfoundland and Labrador. The pace of convergence in Newfoundland and Labrador is found to be of similar magnitude as in the other Atlantic provinces when the oil price is high.
- The results still hold when income rather than GDP is used in the analysis. However, the difference between the two regimes is not significant any more for Manitoba and Saskatchewan, but become significant for Newfoundland and Labrador.

Table 1.3. **Pace of provincial convergence toward the leading province**

	Low oil price	High oil price	Wald test
Newfoundland and Labrador	–0.13	–0.16	0.12
Prince Edward Island	–0.27	–0.21	0.03
Nova Scotia	–0.19	–0.16	0.01
New Brunswick	–0.30	–0.19	0.00
Quebec	–0.28	–0.17	0.00
Ontario	–0.37	–0.13	0.00
Manitoba	–0.34	–0.26	0.01
Saskatchewan	–0.39	–0.30	0.02
British Columbia	–0.31	–0.15	0.00

Note: A Wald test probability above 0.05 means that there no significant break depending on the level of oil price.

Figure 1.5. **Alberta *versus* the rest of Canada: selected indicators**
Year-on-year percentage change



Source: Statistics Canada.

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Looking forward, pressures from population ageing will put a brake on rising GDP per capita

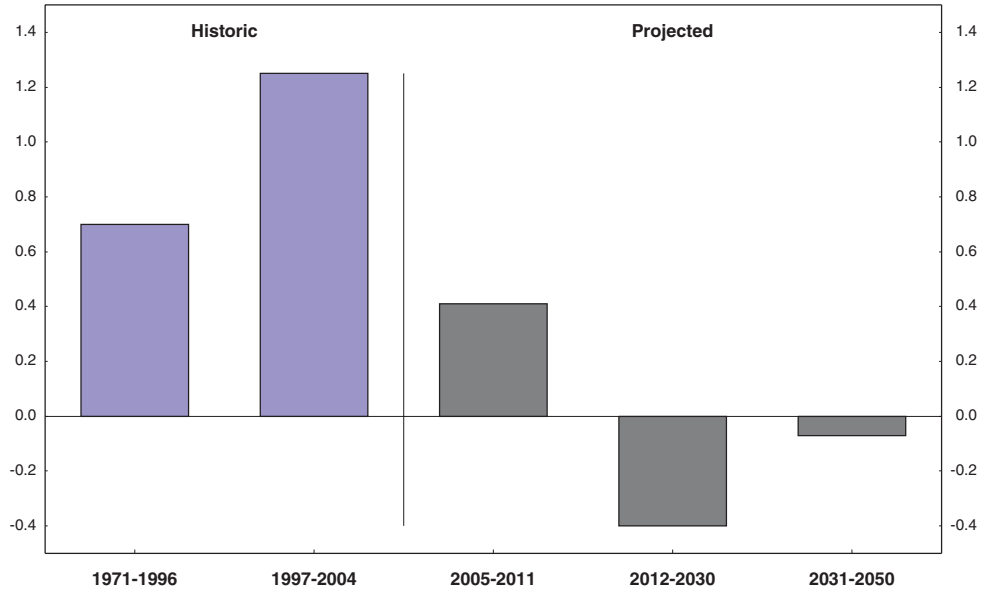
The medium-term outlook for Canada is favourable. Indeed, good framework conditions should allow the economy to grow at rates close to potential, with little inflation pressure over the medium term (OECD, 2006a). Moreover, general government fiscal positions are in good shape, and the debt burden has been declining, owing to good fiscal management. The country is one of the few OECD countries where public pension plans are on a sustainable footing, thanks to adjustments made in the late 1990s. Despite this enviable position, population ageing remains a major challenge for Canada.

Canada is going to experience one of the fastest population ageing processes in the OECD. The ratio of elderly (65 year-old and over) to total population increased by only 0.8 percentage points from 1997 to 2005 to 13.1%, but it is expected to almost double from its current level to some 25% over the next 25 years (Statistics Canada, 2006). As the baby boom generation (born between 1946 and 1964) enters retirement age, the working age share of the population and the employment-to-population ratio are projected to decline after 2011 (Figure 1.6). The projected fall in labour utilisation is estimated to lower annual growth in real GDP per capita by 0.4 percentage point on average per year between 2012 and 2030 (Finance Canada, 2005). Population ageing would continue after 2030, though at a slower pace.

In addition to the direct demographic effect on the labour force, ageing may affect aggregate productivity growth through a variety of channels, but the magnitude of these effects is much more uncertain (Oliveira Martins *et al.*, 2005):

- According to human capital theory, declining human capital could slow down (or even decrease) a worker's productivity through his/her life cycle, suggesting a potential negative effect of ageing on productivity for society as a whole. Ageing is also expected to generate a

Figure 1.6. **Past and projected employment to population ratio**
Annual average percentage growth



Source: Finance Canada (2005), *A Plan for Growth and Prosperity*, Ottawa.

large decrease in investment and saving, which could affect productivity growth through a shift in capital intensity (Feldstein, 1974). Empirical analyses have found only very limited evidence of this relationship in the case of Canada: in some cases the effect was statistically significant (Tang and MacLeod, 2004), while in others the effect was not (Guillemette, 2003).

- Population ageing will increase demands on social programmes, particularly health and long-term care, which are labour-intensive services where productivity gains are difficult to achieve. Shifts in consumption patterns arising from ageing are nonetheless found to have only a small negative impact, reducing Canada's labour productivity level by only 1% by 2030 relative to a scenario without ageing (Lafortune, 2005). This is consistent with the lack of sizeable effects of changes in consumption habits on aggregate productivity growth found in OECD countries (Oliveira Martins *et al.*, 2005).

Surging consumption of health and long-term care services also represents a fiscal cost in the long run. OECD long-term projections suggest that Canada will experience rapid growth in public health care spending, slightly faster than the OECD average over the next 45 years (Table 1.4). Past experience from Canada and other OECD countries also indicates that cost-containment measures in the public sector have often resulted in a shift from health to long-term care spending (OECD, 2006b).

Table 1.4. **Public spending on health and long-term care**[1]

	Health care			Long-term care		
	Level in 2005	Change 2005-50		Level in 2005	Change 2005-50	
		Cost pressure	Cost containment		Cost pressure	Cost containment
Australia	5.6	4.1	2.3	0.9	2.0	1.1
Canada	6.2	4.0	2.2	1.2	2.0	1.2
France	7.0	3.6	1.7	1.1	1.7	0.9
Germany	7.8	3.6	1.8	1.0	1.9	1.2
Italy	6.0	3.7	1.9	0.6	2.9	2.2
Japan	6.0	4.3	2.5	0.9	2.2	1.5
Mexico	3.0	4.5	2.7	0.1	4.1	2.9
Norway	7.3	3.4	1.6	2.6	1.7	0.9
United Kingdom	6.1	3.6	1.8	1.1	1.9	1.0
United States	6.3	3.4	1.6	0.9	1.8	0.9
Average OECD	5.7	3.9	2.0	1.1	2.2	1.3

1. In the cost-pressure scenario, it is assumed that for a given demography, expenditures grow 1% per annum faster than income. In the cost-containment scenario, policy action is assumed to curb this "extra" expenditure growth such that it is eliminated by the end of the projection period.

Source: OECD (2006), "Projecting OECD Health and Long-term Care Expenditures: What are the Main Drivers?", *OECD Economics Department Working Paper*, No. 420.

Raising living standards will rely on further improvement in labour productivity growth

Although there is scope to increase employment rates for some specific groups, most future improvement in living standards will occur through productivity growth. Measuring and assessing labour productivity developments is fraught with difficulties (Box 1.4), and difficulties are multiplied when international comparisons are made (Baldwin *et al.*, 2005).[7] In this context focusing on explaining the productivity gap with the United States diverts attention to technical estimation issues when the economic debate needs to shift towards understanding the drivers of current performance and how to improve them going forward.

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Box 1.4. **Measurement issues in labour productivity**

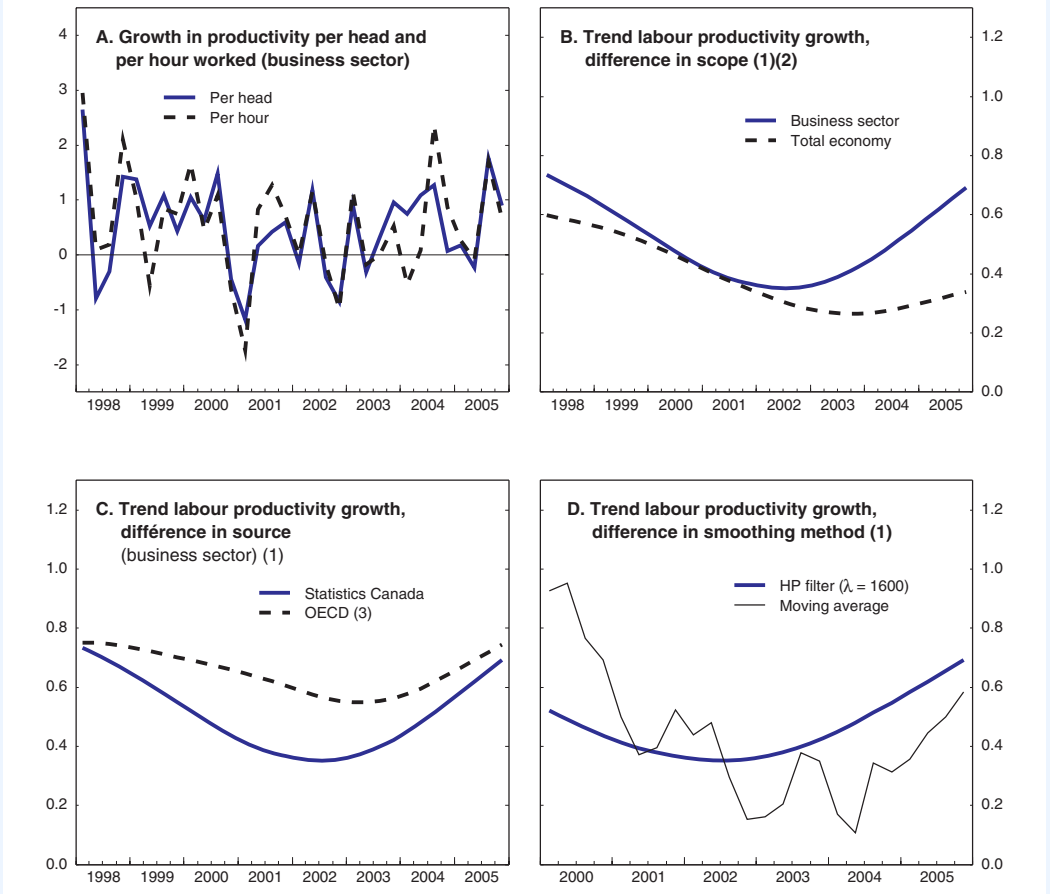
There are numerous ways to compute trend labour productivity growth. This box illustrates the fact that small changes in calculation can generate marked differences, especially for trend productivity.

What are the main sources of differences in productivity measures?

The definition of labour productivity: Labour productivity can be calculated as the ratio of GDP per employee or as the ratio of GDP per hour worked. The difference between the two measures is that the latter will be affected by changes in average hours. In the Canadian case, the two measures exhibit the same profile, but differences can appear at some points in time (Figure 1.7).

Figure 1.7. **Productivity growth measures**

Per cent, annual



1. Per hour worked.
2. Statistics Canada.
3. Economic Outlook.

Source: Statistics Canada; *OECD Economic Outlook*.

The scope: Productivity measures are usually computed for the business sector and total economy. In theory, the total economy including public services is a more relevant concept for living standards. However, measures of the business sector are often used because of the difficulty in obtaining reliable productivity and GDP measures for the public sector. Moreover, the definition of sectors (*e.g.* the business sector) may differ between sources.

Box 1.4. **Measurement issues in labour productivity** *(cont.)*

The data source: Productivity measures will vary depending on the GDP, employment and average hours worked series used. GDP data may differ according to whether they are compiled on an expenditure, output or income basis. Employment can be measured in terms of number of jobs or number of employees. In the latter case, multiple job holders are counted only once. Recorded hours worked may differ in the treatment of sickness or maternity leave and whether they are based on administrative files or on a questionnaire filled in by employers or employees. The treatment of the statistical discrepancy also renders cross-country comparison difficult. Data from Statistics Canada and from the OECD Analytical Database show that alternative sources can generate differences in productivity measures. In this case, these mostly reflect variations in the definition of the business sector in the two databases.

The trend/cycle decomposition: A number of methods are currently available to disentangle trend and cycle developments, but none of them consistently outperform the others, and the choice between them will depend of the user's objectives and constraints (Cotis *et al.*, 2005). In this box, the analysis is limited to the Hodrick-Prescott filter and a moving average. Both methods point to a pick-up in trend labour productivity growth, but the magnitude of the rise differs. This stems from the well-known greater imprecision of two6Hsided filters at end points.

What can be said about trend productivity?

Although some sizeable differences exist at certain points in time, almost all measures indicate that productivity growth has been decelerating since the beginning of the current decade. Trend productivity growth for the economy as a whole appears to have stabilised at a low pace. By contrast, trend productivity in the business sector has recovered in the course of the last few years, but uncertainties remain as to the extent to which the pick-up is attributable to the business cycle.

A number of potential explanatory factors have been put forward to explain the relatively poor Canadian productivity growth performance:

- Aggregate productivity growth would suffer from Canada's specialisation in low-productivity sectors. However, sectoral productivity performance in the last two years is not fully consistent with this explanation. Indeed, except for the notable case of the finance sector, higher productivity growth was generally experienced in the largest sectors in terms of production (Table 1.5). In particular, productivity growth has strongly recovered in the manufacturing sector since 2004. Estimates suggest that productivity growth has been particularly poor in the mining, oil and gas extraction industries (Rao *et al.*, 2005). This is a natural result if higher prices in these sectors stimulate the development of most costly deposits. Overall, although the industrial structure may have some indirect impact on factors affecting productivity growth, its direct impact appears to be limited. Given the trend toward increasing service sector shares evident in most OECD economies including Canada, it remains nonetheless important to ensure service industries experience high productivity growth.
- Aggregate productivity growth may also have been low in the transition period during which the economy has been adjusting to large global shocks (Bank of Canada, 2005b).
- Because of low investment in ICT per worker, the economy would not have benefited from all the productivity enhancement brought by new technologies. This factor has been found to be a major impediment to faster productivity growth (Sharpe, 2005; Fuss

Table 1.5. **Productivity growth by sectors**

	Productivity growth (per cent)				Share in total output
	1997-2000	2000-03	2004	2005	2005
Total economy	2.4	1.0	0.4	2.2	100.0
Business sector, goods	3.4	0.8	3.3	3.3	31.6
Agriculture, forestry, fishing and hunting	8.0	1.7	–1.6	–1.6	2.2
Construction	2.5	3.4	3.1	3.1	5.9
Manufacturing	3.6	0.1	3.5	5.4	17.2
Business sector, services	2.9	1.4	–0.6	2.1	51.9
Wholesale trade	6.1	1.2	–0.4	4.8	6.4
Retail trade	8.1	1.3	–2.2	0.5	5.9
Transportation and warehousing	1.9	–0.4	1.3	6.3	4.8
Information and cultural industries	–0.7	4.5	–3.2	2.3	4.1
Finance, real estate and company management	2.3	1.1	0.8	–1.0	19.7
Professional, scientific and technical services	1.7	2.9	–1.7	0.5	4.3
Administrative and support, waste management and remediation services	–3.8	0.3	–1.5	2.9	2.2
Accommodation and food services	1.0	–0.1	–2.4	1.7	2.1
Other private services	1.7	3.3	0.7	–0.7	2.4

Source: Statistics Canada.

and Waverman, 2005), though it can explain only part of the country's poor performance. This under-investment could, in turn, stem from various structural factors, including industrial structure, firm size, direct foreign investment, profitability and cost-cutting pressures as well as lack of ICT skills, high effective marginal tax rates on capital and weak competitive pressures in some sectors (Sharpe, 2005).

- Small firms appear to be dominant in the Canadian economy. In 2004, 98% of businesses which have any employees had fewer than 100 employees and 78% had less than 10. At the same time, these firms devote a smaller share of their expenditure on R&D[8] and are found to be less innovative than large firms, in particular for process innovation (Statistics Canada, 2004).
- As in other OECD countries, a well-educated population is a major driver of productivity growth. Canada has the highest post-secondary education rate in the OECD, and overall the education system has delivered very good results (OECD, 2004). While the literacy levels of Canadians on average compare favourably by international standards, roughly 40% of the working-age population do not meet the minimum proficiency levels to cope with the increasing demands of a knowledge-based economy (Statistics Canada and OECD, 2005). At the same time, participation in adult education and training remains low, as in other OECD countries (OECD, 2005a).

Overall, it is currently not possible to pinpoint one single explanation of recent disappointing productivity performance. On the contrary, it may be the result of a myriad of factors, so that a number of policy adjustments may be needed to induce a significant improvement.

Key challenges

First challenge: improving productivity growth

The first challenge is how to improve productivity growth in an open resource-intensive and ageing economy. One major policy lever that could enhance productivity growth is to make sure the environment for businesses is conducive to economic development. This involves ensuring that businesses can compete on a level playing field where all are treated equally and able to succeed or fail on the strength of their capacity to respond to market demand and to manage their production processes efficiently. But Canadian enterprises do not find themselves in this position. Instead, a range of government policies favour some businesses at the expense of others, while undermining the scope for businesses and the economy as a whole to maximise productivity growth.

Capital deepening is an important source of productivity growth, and properly structured and competitive taxes are imperative for the creation and maintenance of a positive investment climate. Corporate taxes have been declining for some years and should decline further in the years to come, as announced in a number of provincial budgets. But corporate taxes in effective terms remain higher than in many OECD countries for medium and large enterprises (Mintz *et al.*, 2005). The result is a slower accumulation of productivity-enhancing capital than would otherwise occur, because a higher share of projects that would be worthwhile pre-tax are rejected than would be the case were marginal effective tax rates on investment lower. Furthermore, productivity is boosted when the tax system is as neutral as possible, *i.e.* where it neither encourages nor discourages particular economic choices. This generally translates into a tax system that has as broad a base as possible, without exemptions, special regimes and with flattened rate structures (OECD, 2001). But Canada's corporate tax system is a considerable way from this ideal, with a wide range of tax expenditures and different corporate tax rates depending on the sector and firm size.

Access to well-functioning financial markets is also likely to foster investment and productivity. But regulatory settings result in some barriers to competition in the banking sector, limit effective access to international capital markets and prevent economies of scale from emerging in securities markets. These regulations can all hamper the development of financial systems and weaken overall productivity growth by raising the effective cost of capital (OECD, 2006c). Securities markets – currently regulated by provinces – remain fragmented.

Injecting competition in product markets is also found to be a key driving force for productivity growth (OECD, 2003; Nicoletti and Scarpetta, 2005). Competitive pressures are generally strong in Canada, in large part because most barriers to international trade have been dismantled and administrative regulations that inhibit competition are amongst the lowest in the OECD (Conway *et al.*, 2005). However, there are still a number of sectors where barriers to competition remain significant, including electricity, professional services, airlines, telecommunications and broadcasting. A range of subsidies to particular sectors, as well as agricultural supply management schemes and some aspects of unemployment insurance also distort the competitive environment and add more hills to the playing field.

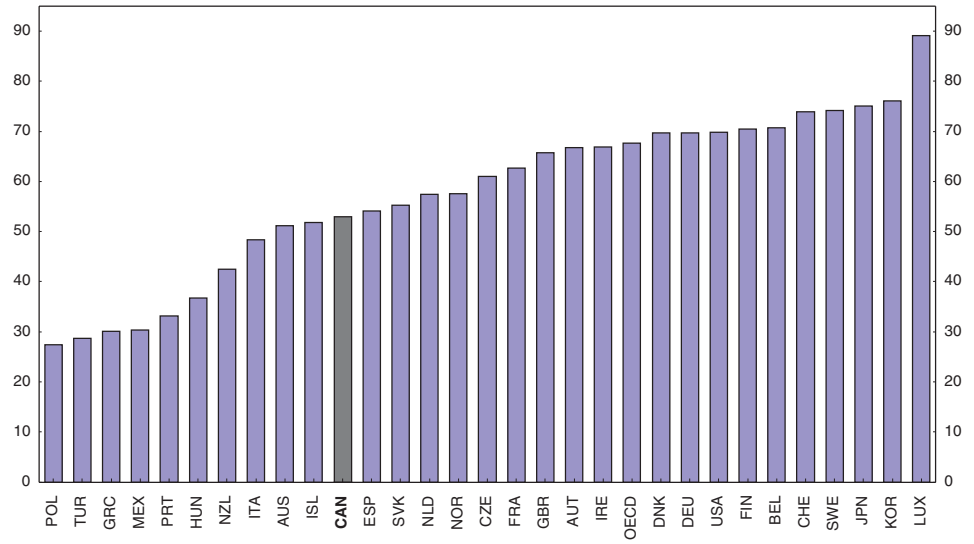
Innovation is also an important factor boosting productivity growth, through the introduction of new products or services to the market, improved production process through organisational change, for example, and enhanced marketing strategies (OECD, 2006c). However, although there is a broad consensus that innovation creates spillovers that

benefit the whole economy, there are still significant gaps in understanding what drives innovation and how policymakers could best influence it. The Canadian authorities set out an ambitious strategy in 2002, focusing on lifting innovation inputs such as research and development intensity and skills development. Data constraints make it difficult to compare Canada's innovation rate with other countries. But business R&D expenditures remain lower than in most other OECD countries, despite a very generous tax system in particular for small firms (Figure 1.8). Canada has a well-educated workforce, although a smaller share of the population has a university degree than in the United States (Figure 1.9). Even so, there are weaknesses: some 9 million Canadian residents – around 40% of the current working-age population – have literacy skills below the level considered by experts to be adequate to work successfully in a knowledge-based economy (Statistics Canada and OECD, 2005). That share is lower than in the United States but higher than in Norway, the country with the lowest share of the working age population with substandard literacy levels in the sample of countries considered.

Second challenge: ensuring sustainable fiscal and social policies

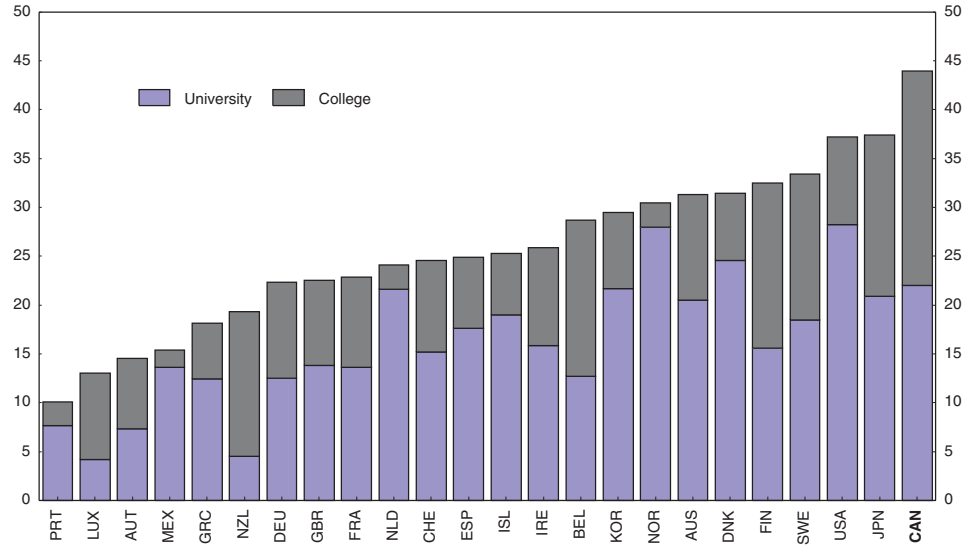
The second challenge is how to ensure that fiscal and social policies remain on a sustainable path. Overall, the federal and provincial frameworks have succeeded in maintaining fiscal prudence and reducing net debt, mostly through the introduction of fiscal rules. Canada's public pension schemes are on a sustainable path. Most recently, the federal government and some energy-producing provinces have also benefited from sizeable energy windfall gains. As a result, the Canadian economy appears to be in an enviable situation compared to other OECD countries. Nevertheless, as shown above, the economy will have to cope with a rapid ageing of the population in the years to come.

Figure 1.8. **R&D performed by the business enterprise sector**
Per cent of total R&D expenditure, 2003[1]



1. 2002 for Australia, Austria, Italy and Turkey; 2001 for Mexico; 2000 for Switzerland.
Source: OECD (2005), *Main Science and Technology Indicators, 2005*, OECD, Paris.

Figure 1.9. **Educational attainment**
Per cent of the 25-64 year-old population, 2003[1]



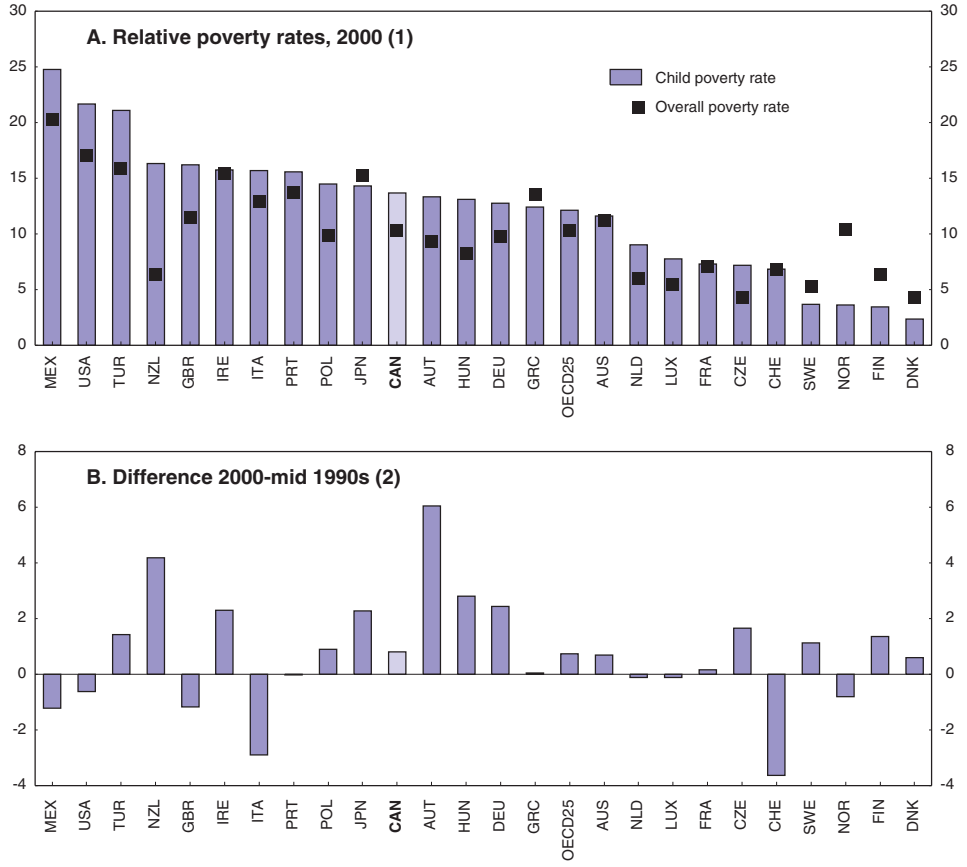
1. 2002 for Iceland and Netherlands.
Source: OECD (2005), *Education at a Glance*, OECD, Paris.

Moreover, energy revenues remain uncertain over the long run, given their high dependence on the oil price level. In this context, there is a need to ensure current policy will be consistent with future needs.

With rapid population ageing and emerging provincial disparities, reforming inter-governmental fiscal arrangements is a key challenge for the Canadian economy. In the current model, the Constitution (as well as Supreme Court interpretations) determines the respective responsibilities of the different levels of government. Both federal and provincial governments have identical taxing powers and the federal government delivers transfers and equalisation payments to provinces. The system has worked relatively well in the last few decades and has managed to reduce current income disparities, but has not succeeded in promoting growth-enhancing policies in some provinces. The system has become extremely complex and the accountability of the different actors has been blurred: the federal government through its spending power has become involved in areas of provincial responsibility (*e.g.* health care), and *ad hoc* transfers to provinces as well as bilateral agreements between some provinces and the federal government have become more common. Looking ahead, pressures from increasing health spending and rising regional disparities will surely put the system under more strain.

Reducing poverty and ensuring equality of opportunity have been at the centre of social policies in Canada. Policies were redesigned in the mid-1990s to achieve these objectives but have had only moderate success. Child poverty rates remain high by OECD standards (Figure 1.10) and poverty rates of lone-parent families were the second highest in the OECD countries, after the United States, in 2001 (OECD, 2005b). Some specific groups are also still under-represented in the labour market, despite high aggregate employment rates compared to other OECD countries.

Figure 1.10. **Relative poverty rates**
Percentages



1. Share of children 17 years and under living in households with equivalised disposable income less than 50% of median income, 1999 for Australia, Austria and Greece; 2001 for Germany, Luxembourg, New Zealand and Switzerland; and 2002 for the Czech Republic, Mexico and Turkey.
2. 1995 in all countries except 1993 for Austria; 1994 for Australia, Denmark, France, Germany, Greece, Ireland, Japan, Mexico and Turkey; and 1996 for the Czech Republic and New Zealand.

Source: OECD (2005), *Employment Outlook*, OECD, Paris.

Reducing welfare traps is a key factor in combating poverty, given the strong correlation between joblessness and the risk of child poverty in OECD countries (Whiteford and Adema, 2006). As in many other countries, high marginal effective tax rates, particularly for low-income earners and families, discourage workers from taking up new jobs and need to be addressed. Moreover, in the Canadian case, the combined effect of federal and provincial social programmes complicates the issue further and has resulted in stacked claw-backs. A number of in-kind benefits, including supplementary health coverage and housing costs also reduce incentives to move from welfare to work. If designed properly, active labour market policies can help people move to work by providing job-search support and training programmes to lift their skills and their adaptability to the needs of the labour market. However, evaluations currently underway tend to suggest that active labour market measures have had only limited positive effects in Canada.

But employment *per se* is not a complete solution to poverty. Poverty rates were very high for working lone parents or two-parent households with one worker in Canada

in 2000, well above the OECD average in both cases.[9] Since then, the share of full-time employees earning low wages has been broadly stable, representing 14% of the total in 2004 (Statistics Canada, 2006b).[10] Often workers have remained poorly paid for a long period of time, not least because their low level of literacy prevents them from accessing better paid jobs.[11] The Canadian government has acknowledged the extent of the literacy challenge and the need for action and is working in collaboration with provinces to develop a pan-Canadian literacy strategy.

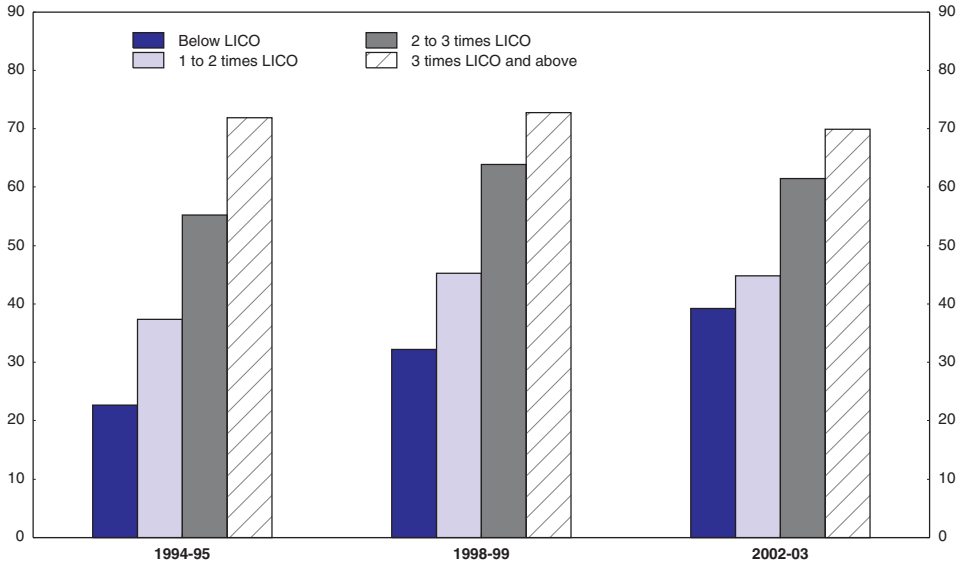
Two minority groups, Aboriginals and immigrants, face particularly daunting difficulties to get out of poverty. Aboriginal populations, especially when they are living on reserve, continue to experience worse social outcomes than other Canadians, despite improvements in education, incomes and life expectancy since the 1980s (Indian and Northern Affairs Canada, 2004). This issue is likely to intensify as Aboriginals are a fast-growing segment of the population and are concentrated in some specific areas. The policy focus has recently changed from short-term intervention and income transfers to the promotion of self-reliance and economic development of reserves. However, the scope for further improvement remains large. Immigrants, especially those who have arrived recently, also face major challenges to be fully integrated into Canadian society. In particular, immigrants experience worse labour-market performance in terms of employment rates (and unemployment rates in the case of recent immigrants) than other Canadians. Highly qualified foreign workers also encounter difficulties to find a job adapted to their skills.

Older workers continue to be under-represented in the labour force, despite a marked and continuous rise in their participation rate since the beginning of the decade. To some extent, this could reflect personal preferences, but institutional arrangements also bias people's choices towards early retirement, especially for low-income earners, and amplify the negative effect of population ageing on employment rates and living standards.

Equality of opportunity can also be promoted by ensuring all Canadian children benefit from early learning services to foster their personal development. Participation of young children in non-parental childcare services has risen significantly over the last few years, but there are very large differences between provinces, with Quebec and Manitoba accounting for most of the growth and Alberta experiencing a decline in participation (Bushnik, 2006).[12] Overall, participation in early childhood education remains low compared to other OECD countries for children below age five, one main reason being the lack of free pre-school for most children before age four or five. Moreover, childcare services remain very costly, in particular for low-income households – while such children are most likely to get the highest returns from attending childcare services. Yet, it is children in poor households whose participation in childcare has risen most over the past decade (Figure 1.11).

Another aspect of sustainable development is Canada's role in the global challenge of addressing climate change. Although Canada is a signatory to the Kyoto protocol, the government has acknowledged that it would be difficult, if not impossible, for Canada to meet its Kyoto commitments to cut its emissions by 6% from their 1990 level over the period from 2008 to 2012, when by 2003 they were 24% higher (Statistics Canada, 2005). Indeed, the expansion of oil sands production would be expected to add significantly to Canada's future emissions path unless CO_2 sequestering or other, unproven, technology is also put in place.

Figure 1.11. **Proportion of children in non-parental childcare**
By household income relative to LICO,[1] per cent



1. The "low-income cut-off" (LICO) is a statistical measure of the income thresholds below which Canadians are likely devote a larger share of income than average to the necessities of food, shelter and clothing.

Source: Statistics Canada (2006c), "Childcare in Canada", Research Paper Series, Catalogue No. 89-599-MIE – No. 003, Ottawa.

It is clear that meeting the Kyoto targets would have required major policy shifts and/or involved very high costs. It is impossible to say whether the 2005 Climate Change plan put together by the previous government would have achieved its ambitions, although by design the approach would not have led to equalisation of marginal abatement costs across emitters. The 2005 plan is now in abeyance, although the new government continues to participate actively in the UN Framework Convention on Climate Change and is developing a new "Made-in-Canada" strategy for dealing with these issues. But neither the broad thrust nor the details of the approach have yet been revealed.

Concluding remarks

With a sound policy framework and management, the Canadian economy is well positioned to cope with longer-term challenges the economy is going to face. However, in the context of a rapidly ageing population, some adjustments will have to be made if Canadians are to continue to increase their living standards at a satisfactory pace. A necessary condition will be to spur productivity growth. It will also be important to ensure that fiscal arrangements within the federation and welfare policies adjust to ongoing structural changes affecting the economy, while remaining consistent with social preferences.

The following chapters present policy shifts and measures that could help the economy respond to these challenges. Chapter 2 examines the current business environment and how to address remaining impediments to economic development. Chapter 3 is devoted to innovation – an important driver of productivity performance. Chapter 4 analyses refinements to current fiscal frameworks and changes to the federal/provincial financial arrangements that will be needed in the medium term. Putting some of these issues together, the fifth and final chapter investigates how social policies could be improved.

Notes

1. In particular, future historical revisions to National Accounts may generate noticeable changes to productivity data.
2. The largest of these items include the creation of a new employment tax credit, an increase in the dividend tax credit and a faster elimination of the capital tax.
3. Estimates of the Fundamental Equilibrium Exchange Rate suggest the Canadian dollar was already above its equilibrium value in the last quarter of 2005, with a gap ranging between 2 and 5%. Large uncertainties surround these estimations, which have only an illustrative purpose (see previous *Survey* for more details on the methodology used).
4. Recent estimates suggest there could be stronger currency adjustments than previously envisaged, with a US dollar depreciation as much as 30% or even more (Obstfeld and Rogoff, 2005; Jarrett, 2005).
5. The *Free and Secure Trade* (FAST) programme expedites border clearance and reduces delays for pre-approved, low-risk truck drivers, carriers and importers. It promotes free and secure trade by using common risk-management principles, supply chain security, industry partnership and advanced technology. Another programme is NEXUS, which is designed to simplify border crossings for pre-approved, low-risk travellers. Finally, in March 2005, Canada, Mexico and the United States signed the Security and Prosperity Partnership. The four key priorities remain: transportation and border infrastructure; regulatory co-operation; North American energy and environmental strategy; and development of continental approaches to managing shared risks, including terrorism and global pandemics.
6. Other factors, such as specific shocks or reduced transfers, may also explain the slowdown in the pace of convergence.
7. International comparisons should be made with caution, as differences may stem from the way series are calculated. Baldwin *et al.* (2005) find that the differences in the way hours are calculated in Canada and in the United States explain most of the difference in GDP per hour worked in the two countries. Using the Canadian methodology they found that US productivity growth from 1994 to 2002 was not significantly higher than Canada's. Moreover, the level of US hourly productivity is only 6% higher than Canada's. However, the results are sensitive to the Purchasing Power Parities used to make the international comparison.
8. Based on a sample of firms, it is found that very small firms spent CAD 0.2 million per company as opposed to CAD 1.3 million for firms with 50 to 99 employees and CAD 1.4 million on average for all firms in 2001 (Statistics Canada, 2005b).
9. In 2000, poverty rates were 27.7% for working lone parents in Canada (20% for the OECD average) and 22.9% for two-parent households with one worker (13.3% for the OECD average).
10. The low-income rate refers to the proportion of families with income below the "low-income cut-off" (LICO), which is a statistical measure of the income thresholds below which Canadians likely devote a larger share of income than average to the necessities of food, shelter and clothing.
11. About 20% of the population experienced low income for at least one year between 1999 and 2004 and 2% lived below the threshold for the entire time, down from 4% of Canadians between 1993 and 1998 (Statistics Canada, 2006b).
12. In 2002-03, 54% of children aged six months to five years were in some form of childcare, compared to 42% in 1994-95.

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ANNEX 1.A1

Progress in structural reform

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 previous *Survey* (September 2004)
Labour markets	
Address the individual characteristics that tend to lock people into persistent unemployment.	Ontario's JobsNow pilot programme provides tailored support for long-term unemployed workers.
Adjust unemployment insurance benefit formulae to prevent recurrent use or counter-balance with more stringent job search requirements, including mobility. Alternatively, introduce enterprise experience rating.	Pilot projects in regions of high unemployment provide even more favourable treatment for recurrent users. Employment insurance premiums were reduced in 2005.
Tackle the high METRs faced by modest-income working families.	Initiatives through the National Child Benefit to reduce overlaps and duplication of programmes.
Adjust CPP and QPP pension plans to make them more actuarially fair.	Quebec government's proposed changes address this.
Ban contractual mandatory retirement.	Ontario has banned mandatory retirement.
Adopt a more rigorous system of evaluation of ALMPs. Make ALMPs more effective.	Evaluations of ALMPs are underway. Assessments have been published for three provinces.
Human capital	
Identify effective programmes for raising levels of literacy and other essential skills.	Work underway by the federal government and the provinces to develop a pan-Canadian literacy strategy.
Improve labour market prospects and/or bridging learners to secondary school completion and further studies, especially among poorly educated youth.	Workplace skills initiative has been developed. Additional funding for apprenticeships provided in the 2006 federal budget. Local programmes (*e.g.* Job Connect in Ontario) provide financial assistance to youths that undertake additional training and improve the school-work transition.
Product market competition	
Further improve the competition legislation framework.	Proposed amendments to the *Competition Act* introduced to Parliament in November 2004 authorise the Commissioner to seek restitution for consumers, introduce a general administrative monetary penalty for abuse of dominance, and decriminalise pricing provisions.
Lift remaining provincial and inter-provincial restraints on competition.	Progress continues towards full implementation of the Agreement on Internal Trade.
Eliminate restrictions on foreign direct investment.	No action.
Inject more competition into electricity markets.	Modest progress in some provinces.
Financial sector	
Clarify the criteria that would determine whether a large bank merger would be approved.	Proposal postponed by the previous Finance Minister. The new Government has indicated that bank mergers are not a priority.
Continue harmonising regulatory standards for securities markets, and reduce the number of regulators.	Progress made on harmonisation of standards.

Recommendations	Action taken since previous *Survey* (September 2004)
Taxation	
Ensure that capital cost allowances are aligned with economic depreciation rates.	Capital cost allowance rates have been revised.
Exempt capital goods from provincial retail sales taxes (or shift from sales taxes to value-added taxes).	No action.
Abolish provincial capital taxes.	Saskatchewan, New Brunswick and Nova Scotia plan elimination by 2008 or 2009. Ontario has brought forward elimination to 2010. Quebec announced a gradual reduction.
Permit last-in first-out valuation of inventories.	No action.
Public expenditure	
Add more medium-term elements into budget frameworks.	Ontario published long-term projections in 2005.
Put more focus on the general government fiscal position.	No action.
Health care	
Make further progress on data coverage and reliability of health statistics to pinpoint the weak spots of the sector.	Canadian Institute for Health Information, Canadian Institute for Health Research and Statistics Canada are improving data coverage and comparability.
Increase incentives for physicians and hospitals to enhance efficiency by modifying funding mechanisms.	No action.
Strengthen Regional Health Authorities by extending their responsibilities and using internal market principles.	Ontario has established 14 Local Health Integration Networks to plan, co-ordinate and fund health care.
Extend Medicare coverage to home care and catastrophic drug costs. Apply modest user charges to other services.	A National Pharmaceutical Strategy is under discussion to address interconnected pharmaceutical policy issues around drug access, system sustainability, pricing, and safety and effectiveness.
Limit federal transfers for health care to the funding arrangements set out in the 10-year Action Plan for Health.	The federal government has reaffirmed commitment to the 10-year plan, but there is uncertainty surrounding its proposed new wait-times guarantee.
Clarify role of private insurance.	A 2005 Supreme Court ruling struck down Quebec legislation prohibiting private health insurance for medically necessary health care services. In response, the Quebec government announced creation of a wait time guarantee for hip and knee replacements and cataract surgeries.
Sustainable development	
Use more cost-benefit analysis and economic instruments, applying polluter pays principle.	No action.
Make water rights transferable, and price their use through metering with full cost recovery.	No action.
Increase compensation for fishing licence retirements. Encourage a reduction in the size of the fishing sector.	No action.
Increase the share of fisheries managed by individual quotas. Adopt a rules-based approach to setting quotas, and strictly enforce rules against over-fishing.	"Policy Framework for the Management of Fisheries on Canada's Atlantic Coast" launched in 2004.
Use economic instruments with the largest base possible to lower the costs of greenhouse gas emissions reduction.	The 2005 Project Green, which defined targets for large emitters, has been put in abeyance.

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Chapter 2

Improving the business environment

This chapter considers policies affecting the business environment in Canada and examines how the federal, provincial and territorial governments could move towards establishing a more level playing field where firms can compete against one another and in the global environment by making the most of market opportunities. A number of issues need to be tackled. High marginal effective tax rates on capital reduce new investment and also lead to a misallocation of resources. Product market competition would be invigorated by liberalising electricity markets; lifting foreign direct investment restrictions in telecommunications, broadcasting and transport; dismantling inter-provincial barriers in services; and scaling back occupational licensing. Agricultural supply management systems should be replaced by open markets and industrial subsidies should be minimised. The cross-subsidy component of unemployment insurance needs to be addressed. Regulation of banking and securities ought to focus on building deeper, integrated markets by allowing consolidation to take place, by ensuring effective competition from foreign bank entry and by achieving a single securities market.

This chapter deals with a range of issues associated with the key challenge of how to improve productivity growth. It focuses on applying the principle that the best environment in which businesses may flourish is one where the underlying policy settings allow all firms to make the most of market opportunities on a level playing field. While Canada has made progress on some fronts, there are still a range of areas where policies overall discourage companies from investing and growing, while other settings favour some activities at the expense of others. The net result is an economy that is less nimble and responsive than it could be, thereby holding it back from achieving the highest possible productivity growth.

The chapter first considers the role of business taxation in inhibiting productivity growth and then considers product market competition where there is a considerable amount of further work to be done. In most cases, the provinces need to play a major role in amending policies so as to produce a more business-friendly climate. It then turns to financial markets, which remain small and fragmented in part because of regulatory factors. The chapter concludes with some policy recommendations.

Business taxation

High taxes on business tend to discourage companies from expanding by investing in new capital. This matters because capital deepening is an important source of labour productivity growth, and a substantial share of innovation is diffused through the economy via the technology embodied in new machinery and equipment. Although they often attract considerable attention, statutory corporate tax rates are not generally a good indicator of the overall tax environment faced by businesses. Marginal effective tax rates (METRs) on capital provide a more useful comparative measure of the incentive structure that the taxation system produces (Box 2.1).

Most countries have recognised the harmful effects of high corporate taxation and have reduced effective average and marginal tax rates over the years (Devereux and Sørensen, 2005). Canada has made considerable progress towards reducing corporate taxes since 2000 when the combined average METR for medium and large firms was estimated at almost 45% (Finance Canada, 2005a). Even so, Canada still had the highest estimated METR in the OECD in 2005 (Figure 2.1). Some cuts[1] already announced have long phase-in periods, and the projected METR in 2010 will still be almost 32%, only very slightly lower than the average estimated METR in 2010 for the United States (Finance Canada, 2006). But this would still leave Canada with a higher rate in 2010 higher than the rate applying in most other OECD countries today.

Both federal and provincial governments impose taxes on business, and there are significant differences across the country (Figure 2.2). These reflect both the federal Atlantic Investment Tax Credit[2] and provincial tax variation. Where provinces levy sales taxes on business inputs, these add significantly to METRs. One key advantage of imposing value added taxes such as GST instead is that they do not apply to capital equipment, thus avoiding this anti-investment bias. Indeed, the five provinces concerned could cut their METRs on business

Box 2.1. **Marginal effective tax rates on capital**

A marginal effective tax rate (METR) on capital is a summary measure of the tax that would be paid on a new investment. It is not a measure of the tax wedge that is paid on a company's total activities *i.e.* the difference between *before-tax* and *after-tax* profits. Instead, it is a forward-looking indicator that measures the extra return that an investment would need to earn to pay taxes, over and above the rate of return needed to make the investment worthwhile if there were no taxes to be paid.

Only investments that pay a sufficiently high rate of return *before tax* to meet the supplier of capital's minimum required rate of return *after tax* will go ahead. This means that if any taxes are levied on investment, some of the projects that would have passed the investor's threshold rate of return before tax will become uneconomic. Those projects will not be undertaken because of taxation. A higher average METR means that more projects will be foregone than if the average METR were lower, all else equal, and the lower will be the economy-wide rate of investment.

METRs on capital are typically calculated taking into account the following features of the tax system:

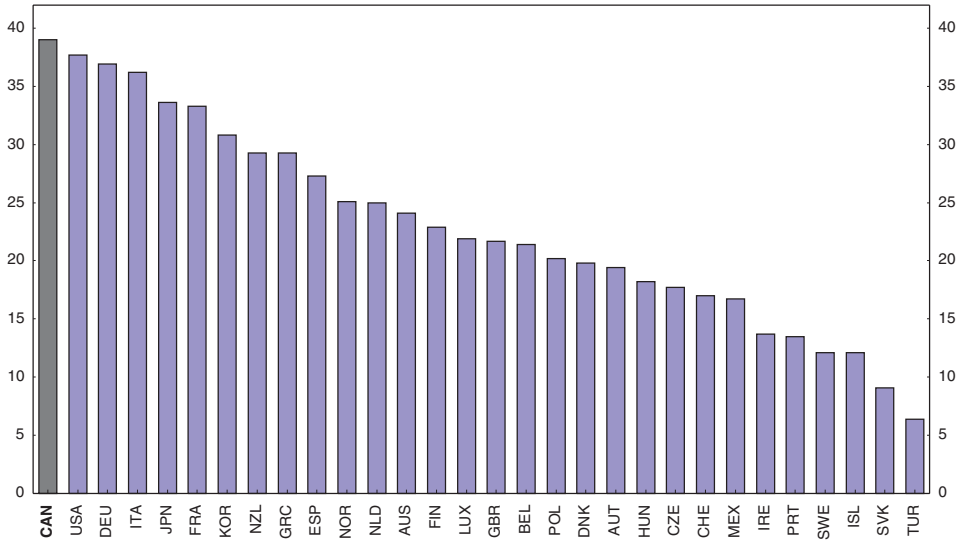
- Statutory corporate income tax rates.
- Interest deductibility.
- Capital cost allowances.
- Inventory accounting methods.
- Research and development tax incentives.
- Investment tax credits.
- Capital taxes.
- Retail sales taxes on capital goods.

Within a country, METRs vary considerably depending on the type of capital investment, how it is financed and, in Canada, the sector and location of the business. Variation in METRs across different types of projects will favour certain investments over others. This means that investors will choose among projects according to their *after-tax* returns rather than on their *pre-tax* underlying economic merits. As a result, for any given average METR, the higher the variation in METRs, the greater will be the misallocation of capital across the economy as a whole.

investment by between 7 and 12 percentage points by eliminating such sales taxes (Finance Canada, 2005a). They could do this in a revenue-neutral fashion by following the example of the other provinces and switching from sales taxes to provincial value added tax.

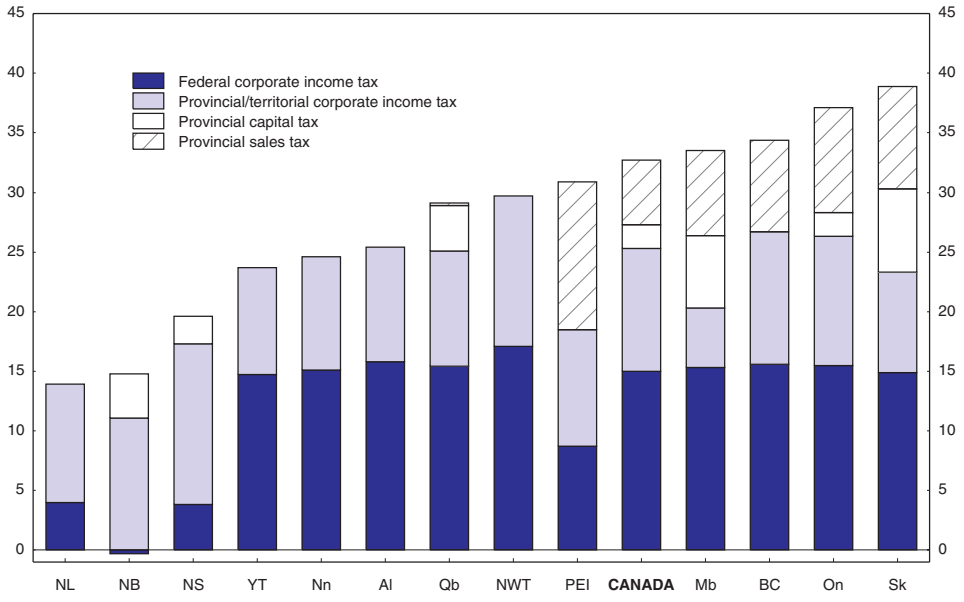
Eliminating remaining capital taxes would also provide a sizable reduction in METRs. Taxes on the total capital assets of firms above a threshold are still a feature in Canada, although federal capital taxes[3] have been abolished from 1 January 2006. Six provinces also impose capital taxes, although New Brunswick, Nova Scotia, and Saskatchewan have announced their phase-out between now and 2010. Ontario's capital tax is scheduled to be phased out by 2012 but its elimination will be accelerated to 2010 if the fiscal position of the province permits. Quebec is reducing its capital tax and Manitoba has announced that it plans to reduce its capital tax if balanced budget requirements are met. These taxes were originally motivated by a desire to ensure that all corporations do pay tax, even those managing their finances so as to shift profits to another jurisdiction. But they bear no

Figure 2.1. **Marginal effective tax rates on capital in OECD countries**
Medium and large companies, percentages, 2005



Source: Mintz, J. *et al.* (2005), "The 2005 Tax Competitiveness Report: Unleashing the Canadian Tiger", Commentary, No. 216, CD Howe Institute, Toronto.

Figure 2.2. **METRS on capital by province or territory in 2010**
Per cent



Source: Finance Canada (2005a), *Tax Expenditures and Evaluations*, Ottawa.

relationship to the profitability of the business and discourage expansion. Few, if any, other countries apply such a tax to corporations, and their damage is significant: estimated welfare gains from cutting capital taxes are more than twice as large as those that would arise from cutting statutory corporate tax rates (see previous *Survey*).

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Canada's METRS in 2010 will still show a marked variation across industries, which may bias investment towards certain sectors at the expense of others. For example, the estimated METR on investment in agriculture, fishing and forestry is less than half that in some services. More generally, both federal and provincial governments show a distinct bias towards manufacturing, whether through special capital cost allowances for machinery and equipment in manufacturing, lower tax rates on manufacturing income and some industry-specific sales tax exemptions (Finance Canada, 2005a). At the margin, these differences may slow the process of developing more sophisticated services in Canada, especially those where technology can deliver significant productivity gains. A more consistent rate across sectors would lead to a more efficient allocation of factors of production across the economy as well as ensuring that new investment is oriented towards the most productive opportunities.

A significant shortcoming of the current business tax environment is that the various features combine together to discourage firms from growing. A dramatically smaller proportion of Canadian firms have more than 100 employees than US ones. Larger firms are better placed to exploit economies of scale, especially those that come from technology and from specialisation of skilled labour within the firm. But the Canadian tax system provides for lower federal and provincial statutory tax rates for small businesses.[4] Medium and larger businesses face a statutory corporate tax rate that can be up to 21 percentage points higher (Table 2.1). Tax credits for R&D expenditure are also more generous for small firms (see Chapter 3). Furthermore, provincial capital taxes generally have low capital thresholds (*e.g.* CAD 12.5 million for Ontario in 2007) which add another source of bias against expansion. To some extent these measures reflect a deliberate attempt to provide a more favourable environment for small business by helping them retain more earnings for reinvestment and growth (Box 2.2). Other biases, such as sales taxes on capital goods also discourage firms from expanding capacity through capital investment.

Creating a more favourable business taxation regime would involve some loss of government revenue, at least in the short term, although it is reasonable to expect that dynamic gains over time would provide some offset through a larger tax base. There could be

Table 2.1. **Corporate tax rates for small and large businesses**

As at 1 January 2006

	Small business tax rate			Large corporations tax rate			Percentage point differential
	Federal	Provincial	Total	Federal	Provincial	Total	
Newfoundland and Labrador	12.0	5.0	17.0	21.0	14.0	35.0	18.0
Nova Scotia	12.0	5.0	17.0	21.0	16.0	37.0	20.0
Prince Edward Island	12.0	6.5	18.5	21.0	16.0	37.0	18.5
New Brunswick	12.0	2.0	14.0	21.0	13.0	34.0	20.0
Quebec	12.0	8.5	20.5	21.0	9.9	30.9	10.4
Ontario	12.0	5.5	17.5	21.0	14.0	35.0	17.5
Manitoba	12.0	4.5	16.5	21.0	14.5	35.5	19.0
Saskatchewan	12.0	5.0	17.0	21.0	17.0	38.0	21.0
Alberta	12.0	3.0	15.0	21.0	11.5	32.5	17.5
British Columbia	12.0	4.5	16.5	21.0	12.0	33.0	16.5
Yukon	12.0	4.0	16.0	21.0	15.0	36.0	20.0
Northwest Territories	12.0	4.0	16.0	21.0	14.0	35.0	19.0
Nunavut	12.0	4.0	16.0	21.0	12.0	33.0	17.0

Source: Finance Canada.

Box 2.2. **Reassessing the rationale for supporting SMEs**

Most OECD countries provide some degree of support specifically targeted on its small business sector in part because such firms are often considered to play a key role as engines of job creation. The practice of providing assistance to small and medium-sized enterprises (SMEs) is not a recent innovation and has long been justified by citing a variety of specific disadvantages they face relative to larger firms.

Perhaps the most frequently cited argument is that SMEs face higher financing costs because of agency problems related to the inability to write complete contracts, asymmetric information about creditor risk and other market characteristics and policy settings that result in incomplete financial markets.

It could be argued that favourable tax treatment or other assistance measures would be justified as compensation for these handicaps. However, in many OECD countries, banks have generally seen SME finance as an attractive market opportunity and have developed tools and techniques, such as scoring models to overcome these obstacles.

As a result, in most OECD countries no generalised financing gap can be identified, as most SMEs are able to obtain sufficient credit from banks and other credit institutions, supplemented in some cases by a modest volume of official guarantees (OECD, 2006a). These results are confirmed for Canada, where the majority of SMEs are able to obtain financing when required and the difficulties faced by the others may reflect factors other than shortcomings of financial markets (Robertson and Belanger, 2006).

However, many OECD countries perceive that a lack of appropriate financing remains a hindrance to innovative SMEs and, especially, start-ups and very young firms. But the lack of comprehensive data, particularly covering private equity, hampers a definitive assessment that would validate these views. OECD work is underway to address these and other data gaps concerning entrepreneurship and financing for SMEs.

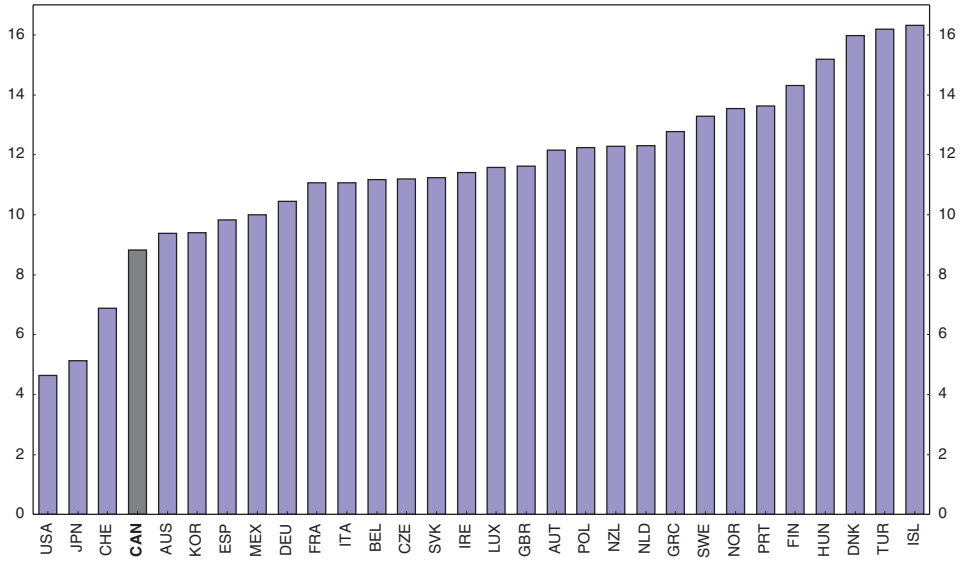
Another rationale for providing specific policies and programmes geared to SMEs is that administrative costs of complying with government regulation (*e.g.* tax, employment rules and environmental protection) fall disproportionately on smaller firms. One survey of SMEs across 11 OECD countries, found that costs per employee were around five times higher for firms with fewer than 20 employees than for those with a payroll of between 50 and 500 (OECD, 2001). However, providing financial support to SMEs to offset these higher costs would be a second-best response and lightening the regulatory burden as far as possible would be a better solution.

Indeed, in 2005 the Canadian authorities announced the Paperwork Burden Reduction Initiative (PBRI), a public – private sector partnership aimed at reducing the costs of paperwork and regulatory compliance for small businesses, making it easier for them to do business in Canada and around the world. This initiative also involves a triennial Survey of Regulatory Compliance Costs, conducted by Statistics Canada. Preliminary results of the initial survey, which was distributed to some 30 000 SMEs and 5 000 external service providers, are expected to become available in July 2006.

In any case, there is broad consensus among policymakers on the importance of the overall economic, legal, institutional and regulatory framework in providing an environment within which SMEs can flourish (OECD Brasilia Action Statement for SME and Entrepreneurship Financing, 2006). It is also recognised that policies and measures targeted to SMEs should be adopted only to the extent that there is a clear rationale for doing so, in terms of market, governmental or systemic failures (The Istanbul Ministerial Declaration on Fostering the Growth of Innovative and Internationally Competitive SMEs, 2004).

scope for some base-broadening measures within the overall corporate tax system, which would also reduce the complexity and compliance burden of the tax system. However, another approach would be to reconsider the overall tax mix. Canada's corporate tax receipts amounted to 3.4% of GDP in 2003, slightly higher than the OECD unweighted average. But total taxes on goods and services were only 8.8% of GDP, almost 3 percentage points below the OECD average (Figure 2.3). Thus, another option would be to raise a greater share of government revenue through value added taxes. While these taxes are currently unpopular in Canada, there is broad consensus, at least among tax experts and economists, that such taxes are more efficient than comprehensive income taxes, including corporate taxes (OECD, 2005a). Overall, taxing businesses less and taxing consumption more would seem to offer considerable scope for boosting Canada's growth potential.

Figure 2.3. **Taxation of goods and services**
Per cent of GDP, 2003



Source: OECD, *Revenue Statistics 1965-2004*, OECD, Paris.

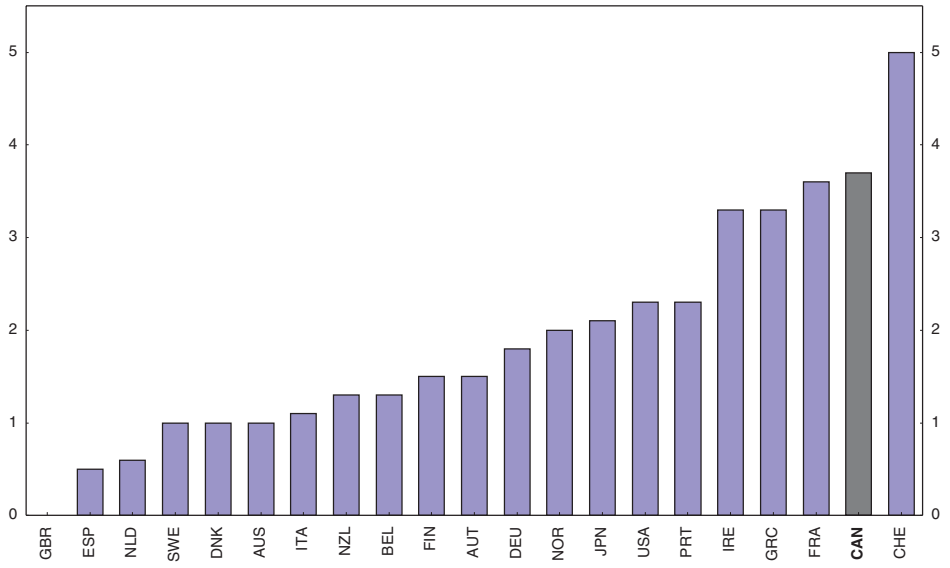
Product market competition

Vigorous competition in product markets is a key driver for productivity growth (OECD, 2003); overall, competition is quite strong in Canada but with some glaring exceptions (see previous *Survey*). These have undoubtedly resulted in an inefficient allocation of resources and act as a brake on productivity gains (Nicoletti and Scarpetta, 2005). Where network industries such as electricity, telecommunications and airlines are concerned, the damaging effects on the wider economy are higher because they raise the costs for businesses when dealing with their suppliers and customers.

Electricity

Electricity regulation is more restrictive in Canada that in almost all other OECD countries (Figure 2.4). It falls under provincial jurisdiction except for inter-provincial transmission and international exports. In some provinces, electricity markets remain

Figure 2.4. **Electricity regulation**[1]
2003



1. The indicator ranges from 0 (least restrictive) to 6 (most restrictive)
Source: OECD, Regulatory Indicators database.

exposed to only limited competition and the pace of liberalisation has been slow (Box 2.3). In a number of provinces suppliers are still vertically integrated, and public ownership remains prevalent. Most provinces now allow open access to the grid for generators and wholesale purchasers, but only Ontario and Alberta have full retail markets. Most provinces regulate prices on a cost-of-service basis.

Prices vary considerably both across provinces and between household and commercial/industrial consumers within provinces (Figure 2.5). To a large extent, regional differences reflect availability of different types of generation, as well as regulatory structures. But within provinces, households pay considerably higher prices per kilowatt hour than do businesses. This can be attributed only partly to economies of scale in distribution, which are difficult to identify in any case when supply is vertically integrated. It also reflects implicit, and even explicit, use of electricity pricing as industrial policy (Burleton and Kalevar, 2005). This effective cross-subsidy to larger power users is being paid for by households and smaller power consumers.[5] Its distortionary economic effects are the same even though it is less transparent than traditional subsidies because it does not pass through the government books and is not explicitly appropriated by the legislature. Ironically, such policies encourage energy-intensive forms of production at the same time as government programmes are endeavouring to promote energy conservation for both energy security and, especially, environmental reasons (Boyer, 2005).

Greater competition in electricity markets would boost productivity and efficiency in electricity generation and distribution, while exposing consumers to market-determined prices would provide stronger signals for households and firms to manage their electricity use optimally. It would also provide stronger signals for investment and innovation. Indeed, uncertainty concerning evolving market structures, unclear pricing rules and possible environmental initiatives may be holding back investment in several provinces

Box 2.3. **Electricity regulation in Canadian provinces**

British Columbia

There is full wholesale access but retail access is for large industrial consumers only. BC Hydro (publicly-owned vertically-integrated incumbent) is restricted to improvements in existing generation while independent power producers can build new capacity. BC Transmission Corporation has been created as an independent transmission entity to manage core transmission assets and ensure non-discriminatory access for all market participants. BC Utilities Commission maintains regulatory oversight of supply, transmission and distribution and approves prices on a cost-based criterion.

Alberta

There is full wholesale and retail access. Generation is competitive while transmission and distribution functions are provided by regulated monopolies. Wholesale prices are established in the market managed by the Independent System Operator. Alberta Energy and Utilities Board is responsible for ensuring safe, responsible and efficient development of generation and transmission facilities; that distribution utilities and the System Operator provide safe and reliable service at just and reasonable rates; and approving the Regulated Rate Tariff that eligible residential, farm and small commercial consumers can opt for.

Saskatchewan

There is wholesale access, but there are only two wholesale customers – the municipalities of Saskatoon and Swift Current. There is no retail access. SaskPower (publicly-owned vertically-integrated incumbent) generates and distributes most electricity. NorthPoint, which provides generation and load management services, is a wholly-owned subsidiary of SaskPower. SaskPower's rates must be approved by the provincial Cabinet.

Manitoba

There is full wholesale access but no retail access. Manitoba Hydro (publicly-owned vertically-integrated incumbent) owns and operates virtually all segments of the electricity industry. Retail prices are approved by the Manitoba Public Utilities Board. There is a co-ordination agreement with the Midwest Independent System Operator (September 2001).

Ontario

There is full wholesale and retail access. Ontario Hydro (publicly-owned incumbent) has been unbundled into Ontario Power Generation, which owns 75% of installed generating capacity within the province, Hydro One, which owns the transmission system, and the Independent Electricity System Operator.

Ontario Energy Board has regulatory oversight of all market participants. Since April 2005, Ontario has operated a hybrid, three-tier market: power from large generators owned by Ontario Power Generation is sold at a fixed price. Power from new generation in response to "Requests for Proposals" will have a contract support price, but is expected to earn revenue by selling into the wholesale market. The balance of generation in the province will be sold at the market rate.

Eligible consumers can opt for the Regulated Price Plan (RPP). Under this plan, two prices are set by the Ontario Energy Board. The lower price applies up to a monthly threshold, which for residential consumers changes between summer and winter, and the higher price applies for consumption beyond that. The difference between actual prices and the RPP prices are incorporated into future RPP prices. Until 31 March 2008, eligible consumers include residential customers, municipalities, universities, colleges, schools, hospitals, farms and customers whose annual electricity usage is 250 000 kilowatt hours or less. After that, it will be limited to residential customers and general service customers under 50 kilowatt hours.

Box 2.3. **Electricity regulation in Canadian provinces** *(cont.)*

Quebec

There is full wholesale access but retail access for large industrial consumers only. Hydro-Québec (publicly-owned, functionally unbundled incumbent) is split into HQ Production, HQ TransÉnergie and HQ Distribution and operates most of the provincial electricity sector. Prices are regulated by the Régie de l'énergie du Québec.

New Brunswick

There is full wholesale access but retail access for large industrial consumers only. NB Power (publicly-owned integrated incumbent) has been restructured into a holding company with four subsidiaries, two generating companies, the NB Power Transmission Corporation and the NB Power Distribution and Customer Service Corporation. A separate System Operator has been established to operate the provincial grid and the market. The market is regulated by the NB Board of Commissioners of Public Utilities, which oversees the market and approves rates.

Prince Edward Island

There is no wholesale or retail access. P.E.I. imports most of its electricity from New Brunswick. Maritime Electric, the main utility, is a subsidiary of investor-owned Fortis Inc. Since December 2003, retail prices for Maritime Electric are set according to the traditional cost-of-service rate regulation model.

Nova Scotia

There is wholesale access but no retail access. Nova Scotia Power Inc, a subsidiary of investor-owned Emera Inc., owns and operates virtually all generation, transmission and distribution assets. Time-varying prices are regulated by the Nova Scotia Utility and Review Board.

Newfoundland and Labrador

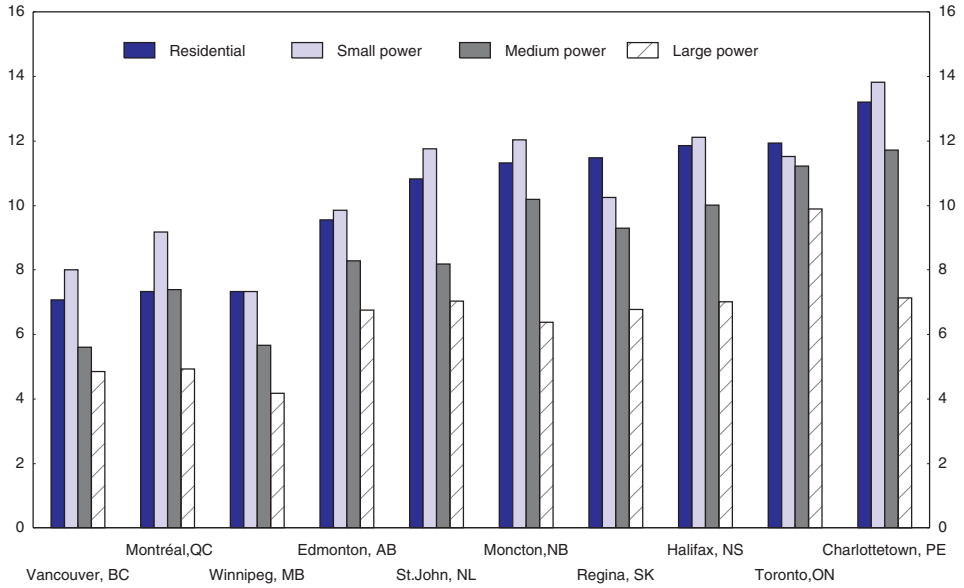
There is no wholesale or retail access. There are two separate electricity systems. Newfoundland and Labrador Hydro (publicly-owned, vertically integrated) provides almost all generation and most distribution except on Newfoundland where Newfoundland Power, a subsidiary of Fortis Inc., serves 90% of retail customers, mostly with power bought from Newfoundland and Labrador Hydro. Rates are set by the Board of Commissioners of Public Utilities.

Source: National Energy Board.

(National Energy Board, 2005). Further impetus to liberalise electricity markets is needed, and lessons learned from successful experiences with market liberalisation in other countries provide reassurance that, done well, further electricity reforms would be worthwhile for Canada too (Box 2.4).

Increased integration of both provincial and international electricity markets would lead to deeper markets and help to balance out local peaks and troughs in supply and demand, which would reduce both average price dispersion and local price volatility. This would result in a more efficient and responsive mix of generation sources across the country. Increasing the size of the market also dilutes the potential for any one supplier to exercise market power. Of course, increasing connecting between markets would require investment in transmission capacity. Geography means that greater integration with US markets may offer these benefits at lower cost than connecting Canada's provinces from

Figure 2.5. **Electricity prices**
Canadian cents per kWh



Source: Hydro-Québec (2005), *Comparison of Electricity Prices in Major North American Cities*, Hydro-Québec, Montreal.

Box 2.4. **Lessons from liberalised electricity markets**

Although the problems experienced in a number of partially or poorly liberalised electricity markets have grabbed headlines in recent years, successful market reforms have attracted less attention. To redress this imbalance, the International Energy Agency recently reviewed four cases where electricity markets have been operating successfully for at least a decade: the British electricity trading and transmission arrangements, the Nordic electricity market, the Australian national electricity market and the Pennsylvania – New Jersey – Maryland Interconnection.

A key lesson to emerge is that electricity market liberalisation is a long process that requires strong and sustained political commitment. It also needs extensive and detailed preparation and continuous development. The key conclusions were:

- Electricity market liberalisation has delivered considerable economic benefits.
- Government has a critical but fundamentally changed role. Establishing truly independent and committed regulators and system operators should precede implementation of a competitive framework.
- Price signals direct decisions in the marketplace. A framework for efficient and cost-reflective prices is established through regulation and market design.
- Removing barriers to retail switching and to active demand participation empowers consumers.
- Efficient incentives for investment are critical. Minimising regulatory uncertainty is key to creating a framework for timely and adequate investment.

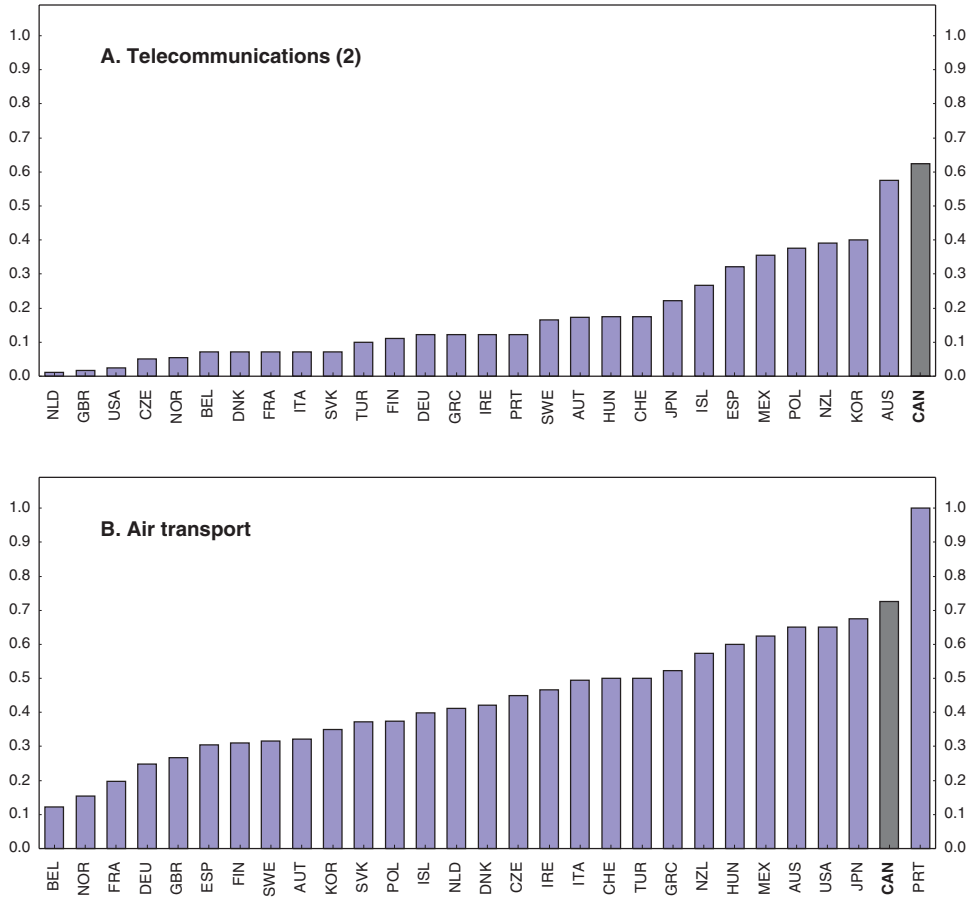
Source: International Energy Agency (2005).

east to west in a national grid.[6] However, more extensive market liberalisation would be necessary for all the benefits of greater integration to be realised, including: vertical separation; horizontal integration of transmission and network operations; non-discriminatory access to the expanded grid; effectively functioning spot markets; consumers' incentive and ability to respond to price changes; a process for allocating scare transmission capacity; and mechanisms that induce or require transmission investment (Pierce *et al.*, 2006).

Telecommunications and transport

Canada had greater restrictions on foreign direct investment than many OECD countries in 2001, especially in air transport and telecommunications (Figure 2.6). Restrictions also prevail in the broadcasting sector to protect Canadian culture. These present an obstacle to investment, they slow technology diffusion, and they are inconsistent with Canada's otherwise open trade and investment policies. The government-appointed Telecommunications Policy

Figure 2.6. **FDI restrictions in telecommunications and air transport**
2005 or latest available year[1]



1. The indicator varies from 0 to 1 from the least to the most restrictive setting.
2. The telecommunications indicator does not include broadcasting.

Source: Koyama, T. and S. Golub (2006), "OECD's FDI Regulatory Restrictiveness Index: Revision and Extension to More Economies", *OECD Working Papers on International Investment and OECD Economics Department Working Paper*, forthcoming.

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Review Panel has recently recommended changes to update the regulatory framework and further deregulate telecommunications markets. It also proposed a phased liberalisation of foreign investment restrictions, starting by establishing a "public interest" test and a presumption that foreign investments in market players that hold less than a 10% share in the relevant telecommunications market satisfy the test, unless there is evidence to the contrary. It also argued that the Broadcasting Act should be amended to separate content policy from the "carriage" aspect of telecommunications, and following this legal change, greater access to foreign investors should be permitted.

Progress has also been made on liberalisation of the airline market with an updated and expanded "open-skies" agreement with the United States concluded in November 2005. Under this agreement, air carriers of both countries are now able to:

- pick up passenger and/or all-cargo traffic in the other partner's territory and carry it to a third country as part of a service to or from their home territory;
- operate stand-alone all-cargo services between the other partner's territory and third countries; and
- offer the lowest prices for services between the other partner's territory and a third country.

An open-skies agreement was also concluded with the United Kingdom in April 2006.

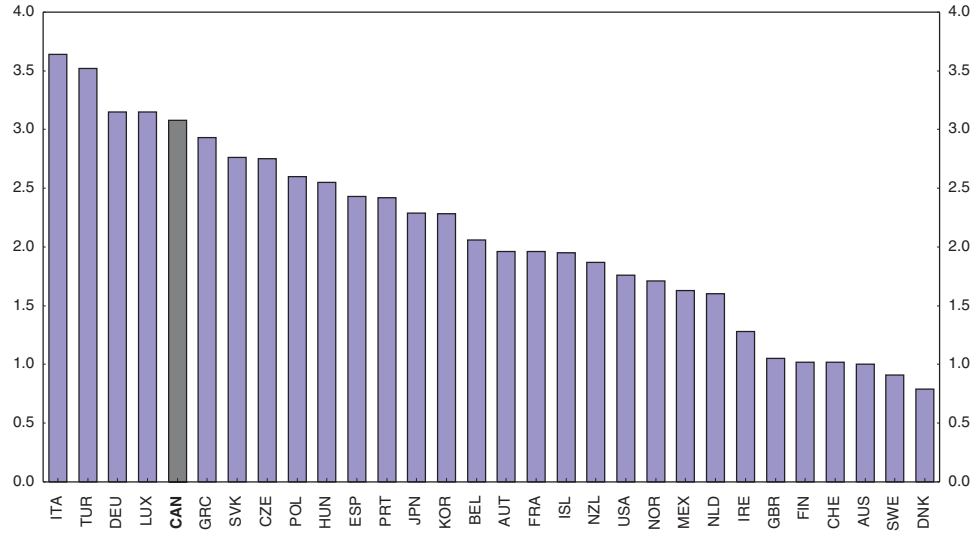
These measures are welcome and should lead to a significant increase in competition in the Canadian air transport market. But at congested airports allocation of ground-based services and grandfathering of landing slots may make it difficult for US airlines to actually exercise their new rights. Auctioning access to airport services would be a first-best solution, but foreign direct investment would offer an alternative means of acquiring access. Easing FDI restrictions[7] would also make it easier for Air Canada to access fresh capital and management and help it to operate more competitively, as well as facilitating new entrants from third countries.

Professional services and regulated occupations

Barriers to competition in four professional services – legal, accounting, engineering and architecture – are also higher than in other many OECD countries (Figure 2.7). More broadly, some 20% of the workforce is in "regulated occupations", which includes around 50 professions and around 100 trades. These are regulated in one or more provinces or territories, limiting inter-provincial trade in services. Although barriers have been gradually reduced over time through the Agreement on Inter-provincial Trade (AIT), further progress is needed to ensure full compliance with the AIT and provide full inter-provincial mobility (Forum of Labour Market Ministers, 2005). These barriers are not unique to Canada. An even wider range of occupations is regulated in the United States, with some 800 occupations licensed in at least one state and about 50 that are licensed in all states, according to the Council on Licensure Enforcement and Regulation. Empirical analysis is sparse but indicates that these entry restrictions have in fact limited competition and raised prices in the United States (Kleiner, 2006a and 2006b). However, it is harder to find evidence that they have boosted quality, not least because quality in many occupations is hard to measure.

Overall, while reducing barriers to inter-regional mobility through the measures envisaged in the AIT will help, it would be better still for provinces to reduce the range of occupations subject to specific regulation. An OECD roundtable on competition in professional services established that occupational or professional regulation occurs in

Figure 2.7. **Regulation of professional services**[1]
2003



1. Indicator covers entry and conduct regulation in legal, accounting, engineering and architectural services. The indicator ranges from 0 (least restrictive) to 6 (most restrictive).

Source: OECD, Regulatory Indicators database.

every OECD country (OECD, 2000). It also identified ways in which the most severe restrictions on competition can be addressed. The New Zealand authorities have developed a set of guidelines for agencies considering occupational regulation (Box 2.5).

Agriculture

As in many other OECD countries, competition could be improved in the agriculture sector. Support to agricultural producers has fallen by one third between 1986-88 and 2002-04 and now stands below the OECD average (Figure 2.8). Total support amounted to CAD 9.7 billion in 2004, of which CAD 3.4 billion was paid directly by consumers through higher prices while CAD 6.4 billion came from taxpayers (OECD, 2005b). However, the dairy sector stands out as receiving a significantly higher ratio of support relative to gross farm receipts (Figure 2.9). It functions under provincial supply management systems, based on planning of domestic production, production prices and control of milk and dairy product imports. These schemes (which also apply to eggs and poultry) represent an effective subsidy from consumers to producers – estimated at CAD 2.7 billion in 2004 – because consumers pay higher prices for these products than they would under an unrestricted market. They also distort production decisions by blunting price signals. The economic rents that these schemes have generated are largely capitalised, so that farmers currently in the scheme could suffer significant losses if supply management was liberalised. However, appropriately designed compensation can play a pivotal role in facilitating reform (OECD, 2002), and approaches for successfully incorporating compensation into liberalisation strategies are being examined further within the OECD.

Government spending in support of the agriculture and agri-food sector is also significant, amounting to more than 40% of agricultural GDP in the 2004/05 fiscal year. Agriculture is a shared responsibility between the federal government and provinces, and

Box 2.5. **Assessing the role for government in occupational regulation**

These guidelines have been developed by the New Zealand Ministry of Economic Development for government agencies considering occupational regulation. They signal alternative options at each step, recognising that occupational licensing is the most costly response and should thus be reserved for situations where the benefits clearly outweigh the costs.

Identify whether intervention in an occupation is necessary

Consider nature of the risk from the occupation: what is the probability of significant irreversible harm occurring and what other means of handling risk (*e.g.* insurance) are available. If significant irreversible harm is likely, there is a case for some form of intervention.

Identify whether intervention by government is justified

Consider whether existing means of protection from harm for consumers and third parties are sufficient (*e.g.* civil law, consumer legislation). Consider ability of industry to regulate itself. Consider likely effect of intervention by government. If significant harm is likely, if existing means of protection are insufficient, if industry is unable to regulate itself adequately and if intervention by government is likely to improve outcomes, then there is a strong case for government intervention.

Identify most effective form of government intervention

Consider nature of problem posed by the occupation. Consider whether it can be solved by: provision of information to consumers; training of practitioners; setting and enforcing standards; specifying services government will purchase; or legislation regulating particular practices of the occupation. If only a specific aspect poses a threat to consumers or third parties, then the best solution is to target and regulate that aspect, rather than regulate the occupation itself.

Identify what form of regulatory regime is needed

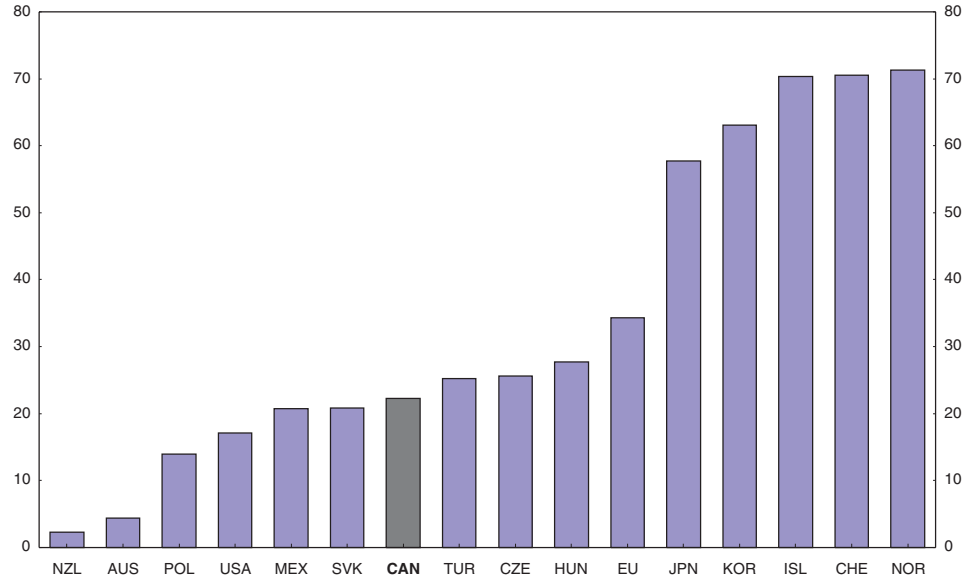
If legislation is required, then it could involve disclosure, registration, certification or licensing. Licensing workers in an occupation imposes the greatest costs and reduces flexibility and should be reserved for occupations where there is a high need for control for safety reasons. The other methods are likely to be adequate for occupations that do not affect health or safety.

Source: New Zealand Ministry of Economic Development (1999).

both levels make programme payments, as well as incurring research, inspection and other general expenses. Farmers also benefit from both a range of tax rebates and lower combined federal-provincial corporate income tax rates. Altogether these payments favour agriculture at the expense of other sectors of the economy.

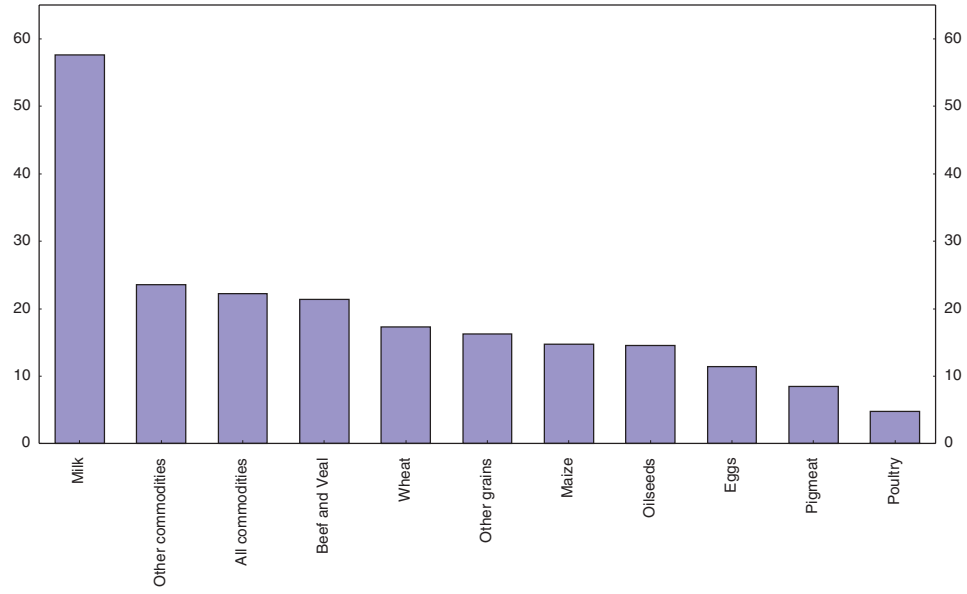
The new government has increased funding to farmers, including an additional CAD 500 million per year for farm support programmes. It is also encouraging ethanol and bio-diesel from agriculture by requiring an average of 5% renewable fuel content in Canadian fuel by 2010 (Box 2.6). It continues to support supply management arrangements, but at the same time, it committed to allowing wheat farmers to choose whether to continue participating in the Canadian Wheat Board; this may alleviate some related trade tensions with the United States. Internationally, it continues to press for the phased reduction of all trade-distorting barriers and elimination of all agriculture export subsidies.

Figure 2.8. **Producer support estimates by country**
Per cent of value of gross farm receipts , average 2002-04



Source: OECD (2005b), *Agricultural Policies in OECD Countries*, OECD, Paris.

Figure 2.9. **Producer support estimates by commodity**
Per cent of value of gross farm receipts, average 2002-04



Source: OECD (2005b), *Agricultural Policies in OECD Countries*, OECD, Paris.

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Box 2.6. **The economics of biofuels production**

Ethanol made from starch and sugar crops and biodiesel processed from vegetable oils can easily be substituted for oil-based petrol and diesel. A number of countries are looking to expand the production and use of biofuels. This is partly motivated by a desire to improve energy security and to lower dependence on petroleum-based fuels for transportation. Environmental concerns are also a key factor, with most available studies suggesting that net greenhouse gas emissions per kilometre driven could be reduced by between 20% and 90% for ethanol from crops and by around 50% for biodiesel from oilseeds.

Production costs vary considerably across both countries and types of feedstock and also depend on the present state of technology. Brazil, which produces ethanol from sugar cane, was the only country for which production was profitable without subsidies at the average oil price of USD 39 per barrel prevailing in 2004, taking into account differences in energy content. At those prices, OECD estimates indicate that ethanol produced from maize in the United States would have been close to profitable, requiring a threshold price of USD 44 per barrel. But maize-based production in Canada would only break even at an oil price of around USD 65. Wheat-based production would require a threshold oil price around USD 100 for the United States and USD 150 for Canada. However, Canada could produce biodiesel from vegetable oil more cheaply than other countries, turning a profit at an oil price of around USD 66 per barrel.

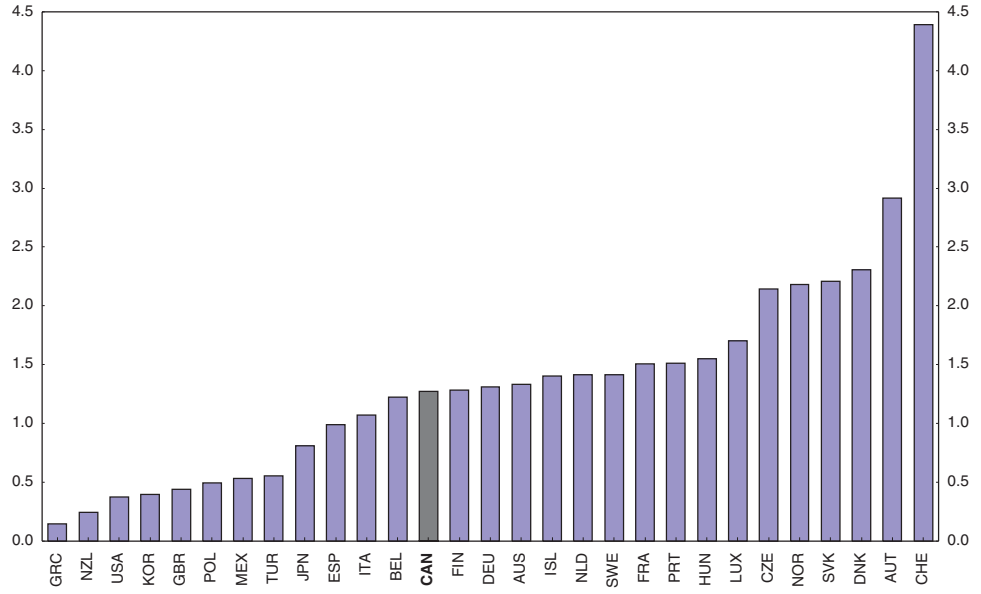
Source: OECD (2006b).

Subsidies

Subsidies to industries also distort the allocation of resources and lower firms' incentives to make necessary restructuring adjustments in response to shifts in demand. The level of subsidies[8] (including some payments to agriculture) delivered mostly at the provincial level, appears to be average compared to other OECD countries (Figure 2.10), but in 2004, as a share of GDP they were 28% larger than they were in 2000. Large subsidies range from the Automotive Investment Strategy or the Beacon Project in the automotive sector through to the aerospace sector, where Bombardier Inc. and its subsidiaries have received substantial federal grants and repayable contributions since 1982. But there is also a plethora of federal and provincial programmes designed to provide financial or in-kind assistance to business – more than 3 000 on one count (Canadian Business Publications, 2005). Although many of these programmes may involve small amounts of assistance and are designed to be "helpful" to business, they still distort prices in favour of recipient firms at a cost to the economy as a whole. The damage may be amplified if businesses systematically look to government for assistance, instead of getting on with taking actions themselves to respond to changing market circumstances. Indeed, one survey comparing attitudes between business people in Ontario and 14 peer US states found that Canadian respondents were noticeably more likely to agree that it was important for governments to play a leading role in economic development than their US counterparts (Institute for Competitiveness and Prosperity, 2003).

Another form of effective, though often hidden, subsidy is provided through the unemployment insurance (UI) component of Employment Insurance. Although this is designed to assist employees who find themselves unemployed, the rules and parameters of the scheme make it vulnerable to repeated use by firms engaged in seasonal work (see previous *Survey*). Indeed, an analysis of the longitudinal use of UI shows that some

Figure 2.10. **Subsidies**
As a percentage of GDP, 2004



Source: OECD, National Accounts.

industries have been systematically cross-subsiding others: almost 20 000 firms (more than 6%) were net beneficiaries in every year between 1986 and 1996 (Table 2.2) (Corak and Chen, 2005). To a large extent, the subsidised employers were both paying lower wages and having higher-than-average separation rates, especially for temporary lay-offs.

Since both wages and temporary lay-offs are to a large extent within the control of the firm, there appears to be an implicit contract between those employers and their employees to substitute UI access for higher wages, pushing up labour costs for other firms

Table 2.2. **Firms' use of unemployment insurance**[1]

	Percentage of firms receiving cross-subsidies					Total firms
	Never	Occasionally (1 to 3 years)	Sometimes (4 to 6 years)	Frequently (7 to 10 years)	Always	
Agriculture	32	26	15	18	9	21 389
Forestry	6	10	13	38	34	2 675
Fishing and trapping	8	6	11	46	29	1 786
Mining	23	26	16	22	12	1 923
Manufacturing	12	36	27	19	6	24 718
Construction	9	17	21	35	17	35 908
Transportation	21	28	19	22	10	12 218
Trade	17	42	24	13	3	71 955
Finance	44	39	12	4	1	22 445
Business and personal services	26	39	20	12	4	118 579
Public administration	22	28	19	22	9	4 386
Total firms	70 275	111 391	64 868	51 794	19 889	318 217

1. For firms in operation in every year between 1986 and 1996.
Source: Corak, M. and W.H. Chen (2005), "Firms, Industries and Unemployment Insurance: An analysis using employer-employee data from Canada", *Analytical Studies Branch Research Paper Series*, Statistics Canada, Ottawa.

that are consistently net contributors to the scheme. The estimated welfare loss associated with these results can be estimated using the alternative of employer experience rating. On this basis, welfare losses compared to firm-level experience rating were estimated at CAD 28 billion in 1997 dollars over the period 1986-96 or 16.1% of total UI benefits paid[9] (Corak and Chen, 2005).

There are two ways of reducing this persistent cross-subsidy between businesses. The first option would be to introduce firm-level employer experience rating (see previous *Survey*), while the second would be to change the parameters of UI entitlement to scale back entitlement for seasonal workers. However, the latter alternative would penalise those in the labour force who have genuine and temporary need for UI and be less successful at targeting those businesses that are exploiting the system.

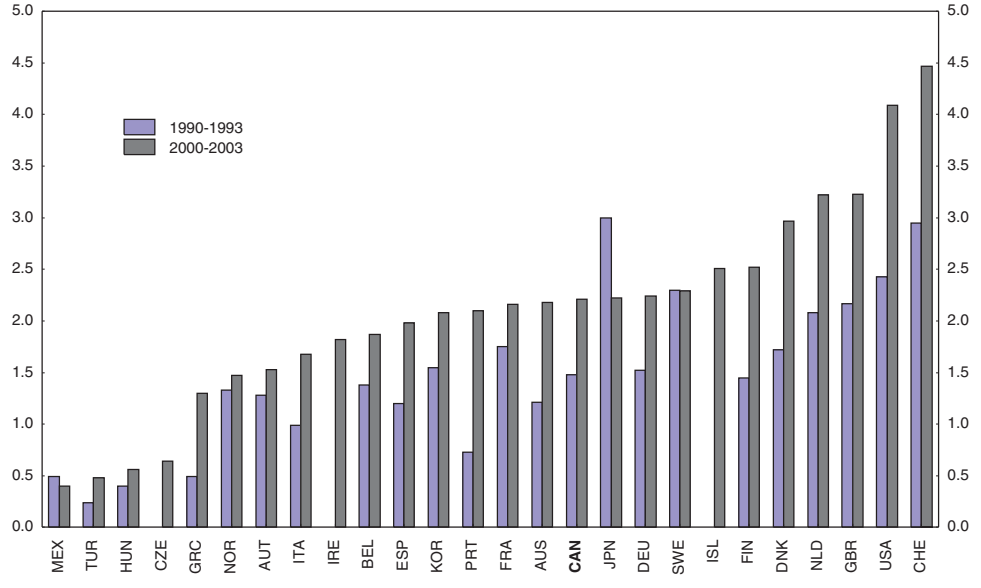
Capital markets

Well-functioning and deep financial markets play an important part in maximising productivity growth by ensuring that the investment projects offering the highest rates of return can easily obtain financing. Overall, Canada's financial sector is well developed and diversified and has performed reasonably well, although market size, as measured by total loans to the private sector and securities market capitalisation, relative to GDP, is smaller than in a number of other OECD countries (Figure 2.11). The sector comprises both financial institutions making loans (banks and other non-bank financial intermediaries) and securities markets, and there is scope for improvement in both parts.

Reforms to the banking sector have improved the regulatory environment and sought to encourage competition, *inter alia*, by making it easier for foreign banks to participate in the Canadian market (Box 2.7). Bank overhead costs were estimated at around 4% of total

Figure 2.11. **Loans to the private sector and securities market capitalisation**[1]

As a percentage of GDP



1. Bond issuances in foreign markets are not included in this measure.

Source: OECD (2006c), *Economic Policy Reforms: Going for Growth*, OECD, Paris.

Box 2.7. **Key regulatory features of the banking sector**

In 2001 there was a major overhaul of the regulatory framework governing the parts of the financial services sector under federal jurisdiction (primarily banking and insurance).

Widely-held rules

A new size-based ownership regime was introduced.

- For large banks (equity over CAD 5 billion), a single owner may hold up to 20% of any class of voting shares or 30% of any class of non-voting shares, with the approval of the Minister of Finance.
- Medium-sized banks (equity between CAD 1 billion and CAD 5 billion) may be closely held. Although 35% of voting shares must be publicly traded, exemption from this requirement is possible.
- Small banks (equity less than CAD 1 billion) are not subject to any ownership restrictions other than the "fit and proper" test.

Bank licences

The minimum amount of capital needed to apply for a bank licence was reduced from CAD 10 million to CAD 5 million in 2001, although applicants must demonstrate that they have the necessary financial strength, integrity and management skills.

Foreign bank entry

Foreign banks have been allowed to operate branches in Canada since 1999, although they require Ministerial approval and cannot take deposits of less than CAD 150 000. While branches must comply with lighter capital requirements, they are also able to rely on the capital bases of their parent banks, enabling them to make larger loans in Canada. Foreign banks can also operate as separately capitalised subsidiaries that would have full retail banking powers. The 2001 amendments removed the requirement that a foreign bank "be capable of making a contribution to the Canadian financial sector".

The Canadian framework distinguishes between "near" banks and "real" banks. This was necessary because some foreign companies were classified as banks under Canadian law, even though they did not primarily engage in financial services in their home jurisdiction. Currently, these enterprises are still defined as banks, but they require only one-time entry approval from the Minister of Finance and are not subject to further banking regulation unless they decide to establish a "regulated entity" as defined in the legislation.

The principle of national treatment applies to "real" banks, so that they have the same opportunities and restrictions as domestic banks, if they have a financial establishment in Canada. This has required complex rules to deal with the business activities of foreign banks that are not permitted under domestic law.

Furthermore, foreign banks with a financial establishment that wish to engage in "merchant banking" must make the investment through a Canadian entity that qualifies as a "specialised financing entity", whereas domestic banks have the option of making the investment directly.

Residency requirements

With the exception of foreign bank branches, all banks operating in Canada must have a Canadian resident chief executive officer. Two-thirds of directors of domestic banks must be residents as must half of the directors of foreign banks. Canada's Immigration Act effectively allows unlimited stay for senior executives and managers.

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Box 2.7. **Key regulatory features of the banking sector** *(cont.)*

Sunset clause

The Bank Act and the other financial institution statutes are subject to a sunset clause and expire in April 2007. A review of financial institutions legislation was launched with the presentation of a consultation document as an annex to the 2005 Budget. This process is expected to build on the present Act, improving the framework so that it meets its objectives of promoting competition more effectively and efficiently.

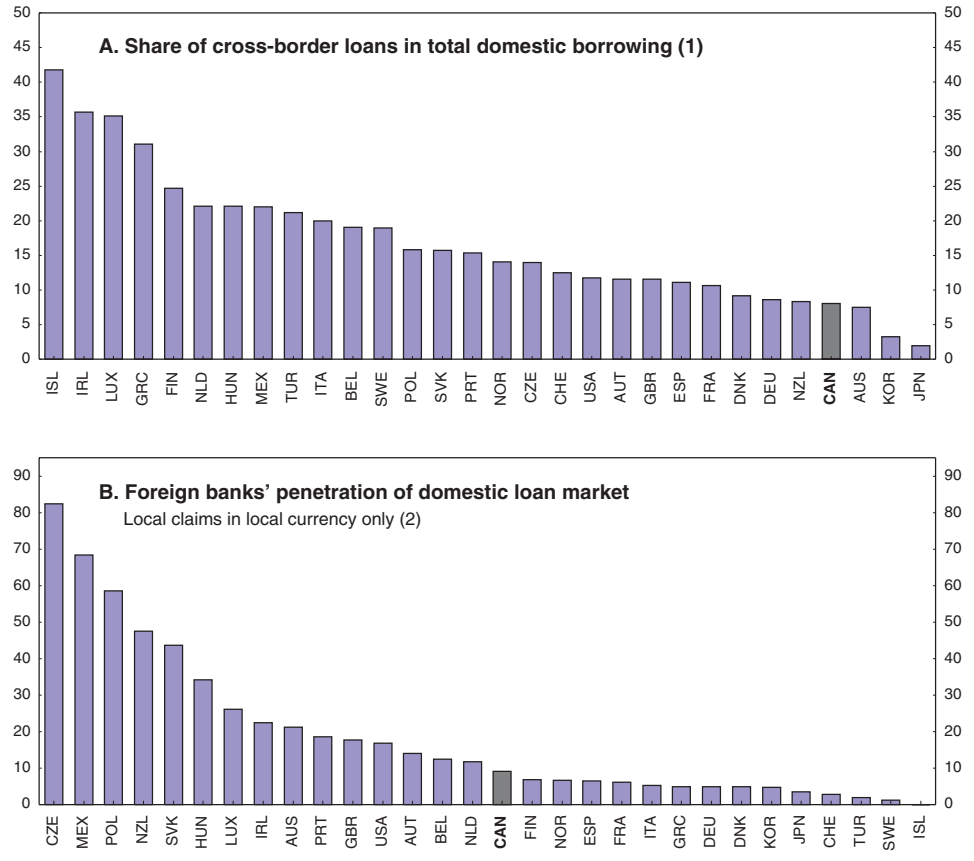
assets on average between 1996 and 2003, which is higher than in many other OECD countries, although net interest margins were around average for OECD countries (OECD, 2006c). The banking and insurance sector has been going through considerable transformation, with companies diversifying into one another's markets and offering a broader and more diversified range of financial products (banking services, insurance and other financial products such as mutual funds). Nonetheless, compared with the rest of the OECD, the share of cross-border loans in total domestic borrowing is relatively low, while foreign banks have made very modest inroads into the Canadian banking market (Figure 2.12). Foreign ownership restrictions were eliminated in the mid-1990s, and the rules around foreign bank entry are being reviewed to identify where streamlining may be needed[10] (Finance Canada, 2005b). More generally, two other factors may inhibit gains in efficiency: lack of clarity on bank merger policy and the limits on shareholding to ensure wide ownership.

There has been an international trend towards consolidation within financial services markets, with banking becoming more concentrated through mergers and acquisitions (Group of Ten, 2001). However, concentration, *per se*, is not a good measure of the degree of market power for banking (Northcott, 2004), and instead merger proposals need to be carefully analysed for their likely effects on competition. Standing in the way of consolidation may be expensive for the economy since Canadian banks do appear to benefit from economies of scale and they could enjoy cost savings from becoming larger, all else being equal[11] (Allen and Liu, 2005). With vibrant competition, especially with full opportunities for new entrants, these costs savings would be expected to be passed on to customers.

The regulatory framework governing bank mergers provides for careful scrutiny by both the Competition Bureau and the Office of the Superintendent of Financial Institutions. However, the final decision rests with the Minister of Finance. Bank mergers are not a priority for the government and uncertainty about the criteria the minister might apply makes it more difficult for possible mergers to be explored. The first-best option would be to eliminate the political step from the approval process, as was proposed by the Senate Banking Committee in 2003. An alternative would be for the Minister to issue guidelines that would be used in reaching a decision. Either way, the ongoing uncertainty is preventing possible efficiency gains from being explored and needs to be resolved.

Bank efficiency gains and market expansion may be hampered by the restrictions on ownership, which apply equally to domestic and foreign shareholders. Banks with shareholders' equity of more than CAD 5 billion are required to have widely held shares and no person (or corporate entity) can have a controlling share. An individual owner may now hold up to 20% of any class of voting shares, but only after obtaining approval from the Minister of Finance. The potential costs of these restrictions are threefold: first, it may

Figure 2.12. **International competition in banking**
Per cent, average 2000-03



1. Measured as foreign banks' cross-border claims on non-banks as a percentage of all commercial banks' local claims on non-banks plus cross-border claims on non-banks.
2. Measured as foreign banks' local claims in local currencies as a percentage of all commercial banks' local claims on non-bank sectors (*i.e.* household, non-bank corporations and public sectors).

Source: OECD (2006c), *Economic Policy Reforms: Going for Growth*, OECD, Paris.

make holding shares in Canadian banks less attractive, raising their effective cost of capital; second, through the ban on any corporate entity taking a controlling share, it effectively prevents takeovers and any benefits for shareholder value (*i.e.* efficiency gains) that they might generate; and third, it reduces the incentive for close monitoring by shareholders (Garvey and Giammarino, 1998).

The regulation of securities markets also remains inefficient. Securities regulation is currently a provincial responsibility, but the presence of multiple regulators has resulted in inadequate enforcement and inconsistent investor protection and adds to the cost of raising funds. It also makes it harder for the country to respond to changes in the global market place or to rapidly innovate. The 13 provincial and territorial regulators have made considerable efforts over a number of years to harmonise their rules and reduce compliance burdens, most notably through the Canadian Securities Administrators Forum, which was restructured into a more formal organisation in September 2003 and

established a permanent secretariat in March 2004. They also agreed on a set of principles and goals including the following:

- Developing uniform securities laws and regulations, along with a core set of regulatory requirements that are substantially the same in all jurisdictions;
- Fostering a regulatory environment that is safe for investors, efficient for raising capital and cost-effective for market participants;
- Providing one-stop regulation that allows market participants to deal with only one regulatory regime and rules that are clear and easily understood.

However, concerns about the economic consequences of the regulatory situation had led the federal Minister of Finance to establish a Wise Persons Committee in 2003 to consider *inter alia*, an appropriate regulatory structure. The group concluded that the optimal solution would be a single securities regulator, although the so-called "passport" system would be better than the *status quo* (Wise Persons' Committee, 2003). In fact, all provinces except for Ontario, have now adopted a "principal regulator" approach, which gives market participants access to all so-called "passport" jurisdictions as long as they comply with the laws of their home province or territory.

The Ontario government still wants to push for a single common regulator instead. It asked its own expert panel to recommend a securities regulatory framework that featured a common securities regulator, a common body of securities law and a single fee structure. The panel proposed a single Canada Securities Act that could be adopted by all participating jurisdictions (including the federal government) on an opt-in basis (Crawford Panel, 2005). It would involve a governance structure that provided accountability via a Council of Ministers, whereas the principal regulator approach leaves each provincial or territorial regulator accountable only to their home parliament. In its final report, the panel noted that their roundtable consultations produced a consistent view that Ontario should join the "Passport System" while continuing to work towards a single regulator model (Crawford Panel, 2006).

These differences in approaches between provinces illustrate the ongoing difficulty in actually achieving the objective of an efficient single capital market through either strategy. However, the biggest cost may be the cumulative efficiency losses associated with the ongoing delays and uncertainties. Given apparent consensus on the ultimate goal, a degree of compromise among the provinces is needed in order to make more rapid progress towards establishing the most efficient, dynamic and responsive Canadian securities market possible. In the 2006 budget, the federal government noted the while progress has been made, it considers that Canadians would best be served by a common securities regulator that administers a single code, is responsive to regional needs and has a governance structure that ensures broad provincial participation. The Minister of Finance is therefore committed to engaging with provinces and territories on this issue as a priority.

Conclusions and policy recommendations

Although many aspects of the Canadian business environment are in reasonably good shape, there are a number of areas where policy settings could be improved (Box 2.8). A common characteristic of the present shortcomings is that policies intended to help some businesses in fact impose costs, making it harder for other businesses to succeed and hurting consumers. The result for the economy as a whole is wasted resources – because they are not being allocated efficiently – and more sluggish productivity growth, because incentives to improve performance are weakened.

Box 2.8. **Policy recommendations for improving the business environment**

The following recommendations for improving the business environment would lead to better resource allocation in Canada as well as providing stronger incentives for firms to take actions that would result in higher aggregate productivity growth.

Business taxation

- Abolish capital taxes as rapidly as possible.
- Switch from provincial sales taxes to a provincial value-added tax, where relevant.
- Undertake more comprehensive reform that broadened the corporate tax base and treated all businesses equally.
- Use value-added taxes to contribute a greater share of provincial tax revenues by lowering taxes on business and raising value-added taxes.

Product market competition

- Liberalise highly regulated electricity markets.
- Dismantle the obstacles to inter-provincial trade in services, and reduce the number of "regulated occupations".
- Lift restrictions on foreign direct investment in airlines, telecommunications and broadcasting.
- Wind up agricultural supply management schemes, and instead allow prices in open markets to balance supply and demand.
- Minimise use of industrial subsidies, and scale back business assistance programmes to those that address a real market failure, ensuring that they do so at minimum economic cost.
- Introduce employer experience rating into unemployment insurance, or scale back access to unemployment insurance for seasonal and temporary workers.

Financial markets

- Streamline the rules on foreign bank entry.
- Lift the constraints on ownership concentration, and remove the need for political approval of bank mergers.
- Take the necessary decisions quickly to ensure that an effective Canada-wide securities market emerges.

Notes

1. The contributions of each individual tax policy change have also been estimated. The largest contributions are –3.6 percentage points coming from lower federal general corporate income tax rates phased in from 2001 to 2004 and –2.3 percentage points from the elimination of federal capital taxes.
2. This federal tax credit applies only to qualified assets acquired for use in the Atlantic Provinces and the Gaspé region in Quebec. The credit is 10% of the capital cost of equipment and buildings in manufacturing, processing, mining, oil and gas, logging, farming, and fishing industries. Credits that exceed federal tax payable can be carried back to reduce federal tax in the three previous years or forward up to ten years. Budget 2006 proposes to increase this carry-forward period to 20 years.
3. The Minimum Tax on Financial Institutions remains and is levied at a rate of 1% on taxable capital employed in Canada between CAD 200 million and CAD 300 million and at a rate of 1.25% on capital in excess of CAD 300 million. The 2006 budget proposed to apply a single rate of 1.25% on taxable capital employed in Canada government in excess of CAD 1 billion from 1 July 2006. As a minimum tax, the financial institution can reduce the capital tax payable by the amount of federal income tax that it pays.

4. In 2006, the federal small business rate applies only to qualifying income up to CAD 300 000 of Canadian-controlled private corporations (CCPCs) with taxable capital employed in Canada of less than CAD 15 million. Access to the federal small business rate is phased out on a straight-line basis for CCPCs having between CAD 10 million and CAD 15 million of taxable capital employed in Canada. The 2006 budget proposed to increase the threshold from CAD 300 000 to CAD 400 000 from 1 January 2007 and lower the small business rate to 11.5% in 2008 and 11% in 2009.
5. Some additional subsidy may come in the form of cheap capital provided to publicly-owned utilities.
6. This is not unique to Canada. In Denmark, north-south connections to Norway and Sweden are cost-effective, but it has not been profitable to construct transmission capacity to connect the eastern and western parts of Denmark.
7. Current bilateral air-services agreements governing landing rights may make it difficult to eliminate foreign ownership restrictions altogether: 51% domestic ownership is a typical requirement.
8. Subsidies are defined in the national accounts as "current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services which they produce, sell or import". They consist of subsidies on exports, subsidies on imports, and subsidies to domestic producers, including government trading organisations and public enterprises.
9. This analysis indicates that the welfare gains from employer experience rating are significantly larger for a finer level of experience rating. Applied at one-digit SIC within a province, it would generate gains of CAD 3.5 billion for the period.
10. Foreign bank entry is exempted from the screening and approval procedures that are set out in the Investment Canada Act and is governed only by the Bank Act, 2001.
11. However, the G10 study found that economies of scale could be realised only in the case of relatively small banks. But it noted that changes in technology and market structure might affect scale and scope economies in the future (Group of Ten, 2001).

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Chapter 3

Innovation and economic performance

Innovation plays a key role in economic progress and lifting living standards. The most critical factor in encouraging innovation is getting the framework conditions right so that businesses can flourish. This chapter concentrates on the more specific aspects of innovation in Canada to identify where policies could be improved. It first reviews Canada's performance on innovation, which is relatively good on product innovation but weaker on processes. The country's innovation strategy focuses on knowledge, skills, the innovation environment and community-based innovation. Public R&D needs to be governed by an integrated strategy, while generous tax credits for business R&D should be re-examined. More attention is being paid to commercialisation of R&D. A skilled and talented workforce helps to diffuse innovation through the economy, but while Canada has enough scientists to meet current demand, it lacks people with management, marketing and other business skills. Diffusion would also be aided by lifting general literacy and life skill levels. Well-designed co-financing arrangements would encourage participation in adult education and training. Lastly, the venture capital market would perform better if the tax advantage provided to Labour-Sponsored Venture Capital corporations were removed.

Lifting the economy's rate of innovation is a key component in meeting the challenge of raising productivity growth (see Chapter 1). In fact, innovation has been responsible for most of the rise in material living standards since the industrial revolution (OECD, 2006). It makes it possible for countries to produce an increased amount of economic output from a given set of inputs such as capital and labour. Indeed, Canadian firms that innovate have higher productivity levels than firms that do not, and those that make world-first innovations perform best of all[1] (Cozzarin, 2003). At the industry level, innovation is also closely linked to productivity for Canadian manufacturers (Gu and Tang, 2003).

Innovation can spring from within the firm itself, but it can also involve applying knowledge and technology acquired from other firms or institutions. Adoption of ideas from outside the firm is the channel through which innovation gradually diffuses throughout the economy. This can emerge from formal and informal linkages between different players or through investment in machinery and equipment that embodies new technology. Innovation also flows across borders through various channels, such as international alliances, joint ventures, licensing, foreign direct investment and migration of skilled workers.

Innovation is not a separate add-on from other aspects of business, but instead an integral part of it. Thus, establishing a favourable environment for firms is a vital factor in encouraging innovation (Jaumotte and Pain, 2005a). Until shortcomings in the overall Canadian business environment are addressed (see Chapter 2), direct efforts to boost innovation may yield only mediocre results. Furthermore, diffusion of innovation can happen only if individual firms and, by extension, the economy as a whole, are capable of picking up and applying technology. A responsive labour market well endowed with skilled workers plays an important role here.

Governments often endeavour to design policies to boost innovation directly, and Canada is no exception. These efforts generally rely on the broadly accepted argument that innovation generates spillovers to the rest of the economy, so that net social returns are higher than private returns. Thus, without public financial support through a range of channels, the private sector would not carry out the socially optimal amount of innovation. However, it is difficult to identify the size of likely spillovers from firm-level innovation with any degree of confidence.[2]

This chapter begins by looking at the characteristics of innovation in Canada before summarising the current strategy to boost innovation. It then considers in turn several aspects of policies that directly or indirectly support innovation: first in optimising the knowledge base, and second in transforming knowledge into innovation. The chapter concludes with some policy recommendations.

The state of innovation

Four separate types of innovation have been identified and are now defined in the *Oslo Manual* (OECD, 2005a). *Product innovation* introduces a good or service that is new or significantly improved with respect to its characteristics or intended uses; *process innovation*

implements a new or significantly improved production or delivery method; *organisational innovation* incorporates a new organisation method in the firm's business practices, workplace organisation or external relations; and *marketing innovation* involves significant changes in product design, packaging, placement, promotion or pricing. In each case, innovation may be incremental or disruptive.[3] From the firm's point of view, innovation always involves some novelty, whether the firm produces world-first innovation or is the last firm on the block to adopt technology or practices that everyone else has already put in place.

Statistics Canada has been surveying innovation activities of different sectors of the economy since 1993, although surveys to date cover only product and process innovation. But whereas most innovation surveys (including the European Commission's Community Innovation Survey, which covers EU members, Iceland and Norway) take a snapshot of the entire business sector, Canadian surveys have covered only selected sectors in any given period of time. Unfortunately, this makes international comparisons difficult.

The overall picture for Canada is somewhat mixed:

- Innovation density, *i.e.* the share of firms undertaking innovation, is reasonably high compared with other countries. But although Canadian manufacturing firms were more likely to be innovating, innovating firms had a lower share of their sales coming from innovative products than in four European countries (Mohnen and Therrien, 2003). Around 60% of Canadian product innovators gained, at most, 15% of their sales from new or significantly improved products. In contrast, innovating European firms were significantly more successful at transforming their innovation into revenue streams.
- Innovation performance is reasonably good for products, but relatively weak for processes. This trend is also observed in a range of other countries, although many innovative firms undertake both types of innovation, even though each type has a somewhat different motivation.
- To the extent that different sectors have naturally different rates of innovation, sectoral composition may account for some of the differences observed in innovation rates in different countries. In particular, Canada has an unusually important resource-based sector, and in extraction (*i.e.* mining and logging) process innovation is more important than product innovation.

An examination of the key characteristics of innovating firms can provide some deeper insights into the innovation story and suggest where policy issues might arise.

Firm size matters for innovation. As in other countries, large Canadian firms on average undertake more innovation than small ones. They are more likely to have dedicated R&D teams that are not only able to generate ideas themselves but also to be more capable of absorbing ideas from outside the firm (Sharpe, 2003). Small firms are less likely to use innovation inputs[4] more generally, but when they do, their success in converting these inputs into innovation outputs is similar to large firms (Le and Tang, 2003). But Canada has relatively few large firms: in 2003 only 7.9% of enterprises had 20 employees or more and 1.3% had 100 staff or more. In contrast, in the United States, 12.3% of firms had at least 20 employees and 2.0% had 100 or more.[5] Thus, the obstacles that inhibit the development of larger firms in Canada (see Chapter 2) may impact on Canadian productivity growth by impeding innovation activity.

Innovation is a key factor for success among new entrants. Only 20% of start-ups in Canada survive more than a decade. They generally face strong competitive pressures,[6] and successful entrants are more likely to have developed market niches and to stress quality and

customer service (Baldwin and Gellatly, 2003). Furthermore, across industries, faster-growing firms put more emphasis on innovation-related strategies. They also focus more intensely on a range of business competencies,[7] such as training, marketing, and technology, business and financial management than do slower-growing businesses (Baldwin and Gellatly, 2003).

The link between competitive pressures and innovation is complex. Manufacturers face different types of competition (Table 3.1) and econometric analysis has shown that the link between competition and innovation activities[8] varies depends on how they perceive the competitive threat (Tang, 2003). Indeed, the possibility of competing products arriving on the market spurred innovation activities and especially encouraged the invention of new technology. However, if purchasers can easily switch between suppliers producing easily substitutable products then firms are less likely to innovate. On the process side, firms in sectors where production technologies change rapidly were more likely to innovate through both technology invention and adoption. Altogether, these results suggest that well designed competition policy contributes to innovation by facilitating the arrival of competing products while ensuring that new technologies can easily establish themselves.

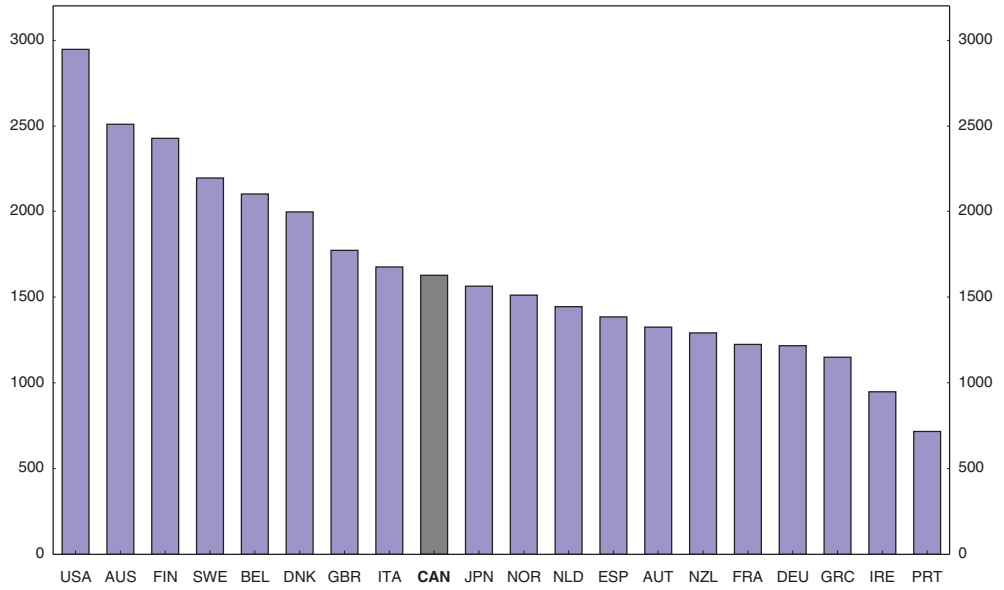
Table 3.1. **Motivating factors for innovation in manufacturing firms**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
A. Perceptions of competition faced by innovators					
My clients can easily substitute my products for the products of my competitors	5.7	14.7	20.7	28.3	30.6
Arrival of competing products is a constant threat	4.8	15.2	22.9	30.8	26.3
My products quickly become obsolete	35.3	34.7	17.5	7.7	4.8
Production technologies change rapidly	5.2	20.3	30.7	27.6	16.1
Office technologies change rapidly	1.8	7.6	24.3	38.4	27.9
	Low	**Moderately low**	**Medium**	**Moderately high**	**High**
B. Importance of objectives for innovation					
Extend product range	3.4	5.3	15.2	29.4	46.8
Improve product quality	1.4	2.7	10.2	31.6	54.1
Increase speed of delivering products to the market	5.6	7.9	18.5	25.6	42.4
Replace products being phased out	16.8	16.7	22.0	21.6	23.0
Reduce labour costs	9.9	9.6	17.9	25.4	37.3
Increase production capacity	4.2	6.0	11.0	29.3	49.5
Reduce production time	6.1	7.3	15.4	30.1	41.1
Improve production flexibility	4.6	7.6	18.3	32.9	36.6
Reduce materials consumption	18.3	17.3	21.7	21.5	21.2
Reduce environmental damage	24.8	19.5	22.5	17.2	16.0
Reduce energy consumption	24.3	21.4	25.6	16.7	12.0
Deal with/respond to new government regulations	31.3	20.6	23.0	13.1	12.1

Source: Statistics Canada, Survey of Innovation 1999.

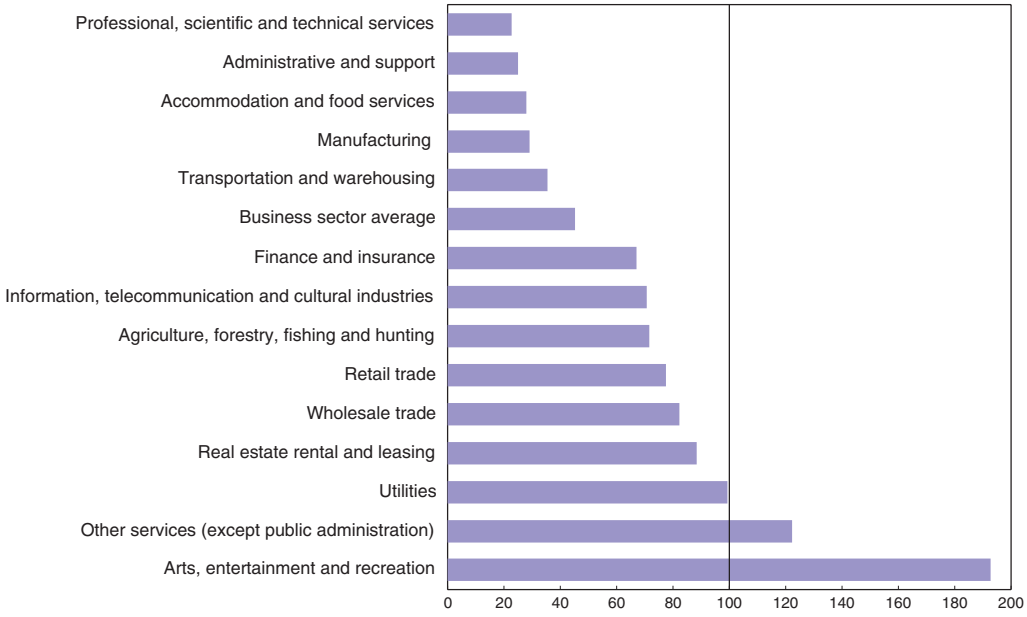
Rapid change of production and office technologies both appear to be important for innovation, with ICT increasingly playing an integrating role. ICT investment generally boosts firms' productivity growth, especially when it is accompanied by organisational change and human capital investment as an integrated package (Gu and Gera, 2004). But Canada has invested less in ICT per worker than a number of OECD countries and significantly less than the United States over a long period of time[9] (Sharpe, 2005) (Figure 3.1). There are also striking differences in the gap across industries, especially for software investment (Figure 3.2). Furthermore, the gap in ICT investment per worker has grown wider over time, especially for

Figure 3.1. **ICT investment per employed person**
USD at PPP, 2002



Source: OECD (2005), *Science, Technology and Industry Scoreboard*, OECD, Paris.

Figure 3.2. **ICT gaps by industry**
ICT investment per worker in Canada as percentage of US level, 2004
United States = 100



Source: CSLS database, *www.csls.ca/reports/csls2005-05.pdf*.

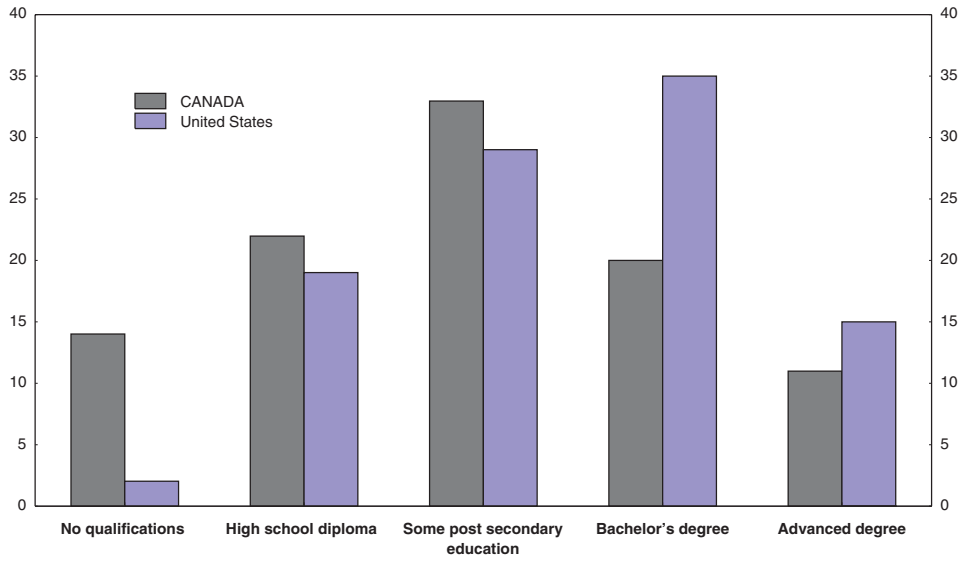
communication and software investment. Given that Canadian firms are able to access the same production and office technologies as their US counterparts, it is not clear why Canadian firms are investing less in new technologies. Possible explanations include: smaller firm size;

depreciation and other taxation rules; different relative costs of labour *versus* capital; and managers who do not recognise the economic importance of such investment. Indeed, Canadian managers use computers less intensively than their American counterparts (OECD, 2005c).

Owners and managers of Canadian firms set the pace of innovation within their companies, and if they pursue an explicit or implicit business strategy that does not require innovation, then it simply will not happen (Martin, 2002). Management skills are linked to overall business performance (Dorgan *et al.*, 2006, Baldwin and Gellatly, 2003). It is impossible to get a direct measure of Canada's business management capital. Canada's overall levels of educational attainment comfortably exceed the OECD average (OECD, 2005b). But Canadian firms have a lower share of highly-educated managers than the United States (Figure 3.3) and less than 10% of Canadian managers have degrees in commerce, management or business administration (Table 3.2). A survey of CEOs of growing R&D-intensive firms identified a dearth of sales, marketing and management skills as a major weakness for their firms and the Canadian economy as a whole (Barber and Crelinsten, 2005). It has also been suggested that insufficient attention to the role of customers' needs (or wants) in driving innovation may explain why Canada's innovation performance has not been stronger (Crelinsten, 2005; McDougall, 2005).

Innovation flows across borders in a number of different ways. The technology balance of payments measures international technology transfers: license fees, patents, purchases and royalties, know-how, research and technical assistance. Canada's incoming flows of these production-ready technologies relative to GDP are significantly lower than for other countries (Figure 3.4). It is not clear why this would be: it might reflect some unwillingness to look offshore for ideas; biases in public policies to support innovation (including the

Figure 3.3. **Managers' educational attainment**
Per cent of managers, 25-64 year-olds, 2001



Source: Martin, R. and J. Milway, "Commmercialization and the Canadian Business Environment: A Systems Perspective", 4 July, 2005.

Table 3.2. **Managers' educational attainment by field of study**

Per cent of managers aged 25-64 years, 2001

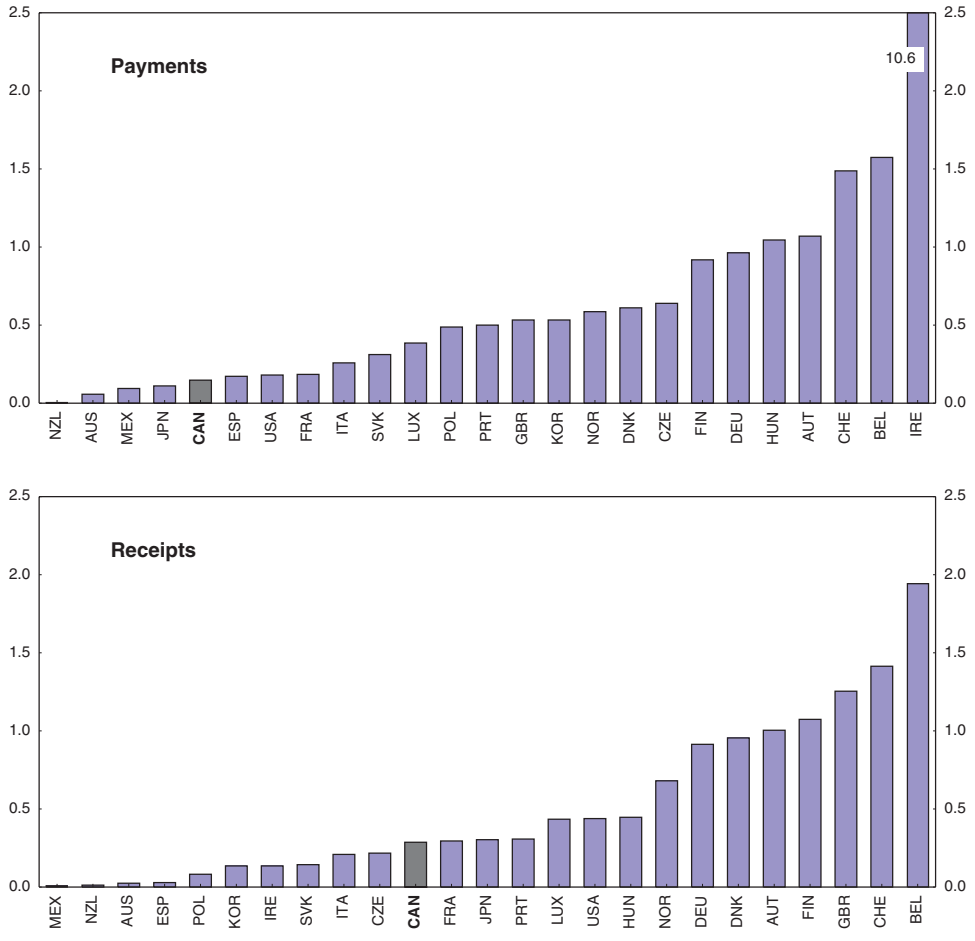
	Certificates and diplomas[1]	Bachelor degrees	Advanced degrees[2]	Total employed
Fine and applied arts	1.7	0.4	0.1	2.2
Agricultural, biological, nutritional, and food sciences	1.3	0.8	0.3	2.4
Health professions and related technologies	1.5	0.5	0.4	2.4
Mathematics, computer and physical sciences	0.5	1.7	0.7	3.0
Humanities and related fields	1.2	2.1	0.8	4.1
Engineering and applied sciences	0.5	2.7	1.2	4.4
Educational, recreational and counselling services	1.5	1.5	1.7	4.7
Social sciences and related fields	1.6	4.0	1.5	7.1
Applied science technologies and trades	10.7	0.0	0.0	10.8
Commerce, management and business administration	12.0	5.8	3.7	21.5
No post-secondary qualifications	0.0	0.0	0.0	37.2
Total – all fields of study	32.6	19.6	10.6	100.0

1. Trades certificate, college diploma and university sub-degree.
2. Graduate university certificates, medical degrees, masters and doctorates.

Source: Statistics Canada, Census 2001.

Figure 3.4. **Technology flows**

Per cent of GDP, 2003 or latest year available

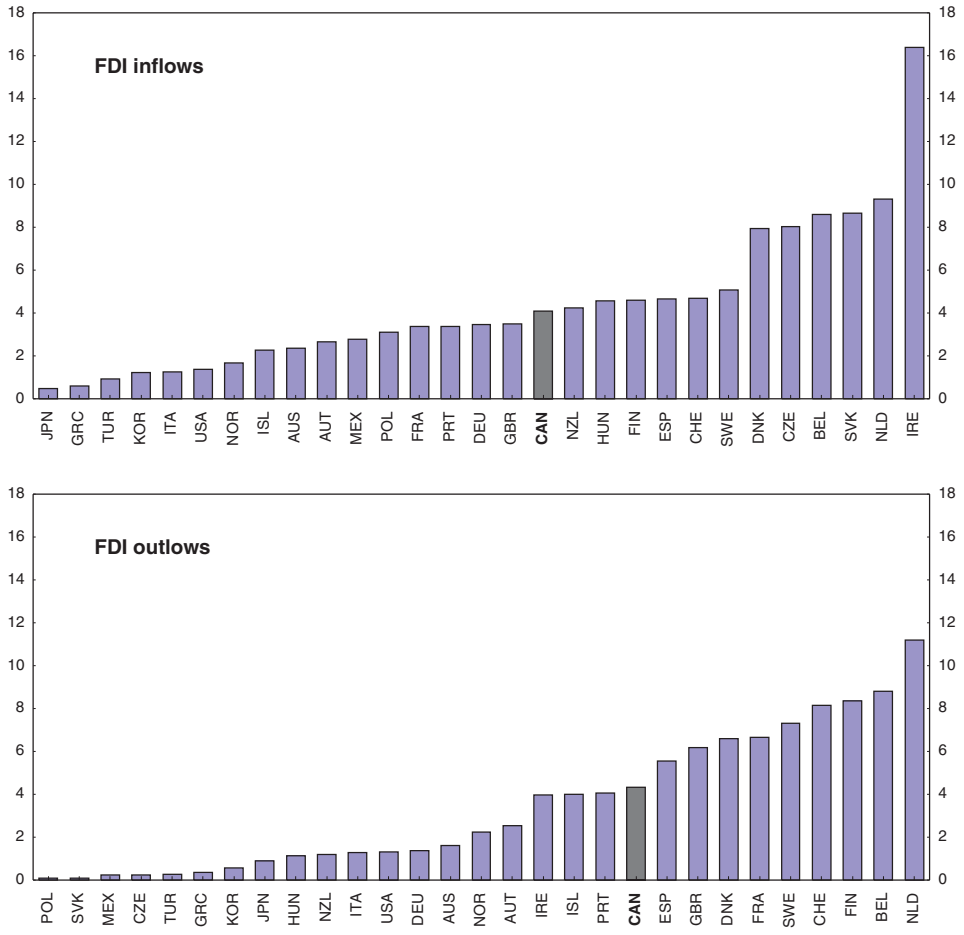


Source: OECD (2005), *Science, Technology and Industry Scoreboard*, OECD, Paris.

Scientific Research and Experimental Development (SR&ED) tax credit which provides more generous treatment for Canadian-controlled Private Corporations than for other Canadian or foreign-owned businesses) that tip the balance in favour of home-produced rather than imported technology; or weakness in absorption capacity more generally.

Canada's inward foreign direct investment relative to GDP is close to the OECD average (Figure 3.5), and foreign-controlled manufacturing firms are more productive, make greater use of technology and do more innovation (Baldwin and Gu, 2005). They also use more skilled workers and pay higher wages. Furthermore the presence of foreign-controlled firms generates spillover benefits to the domestic sector, both by enhancing competition and by stimulating more intense use of advanced technologies amongst their competitors. Although empirical analysis is not available for services, it would seem reasonable to expect that similar patterns would be observed. Thus, dismantling Canada's remaining barriers to foreign direct investment (see Chapter 2) could also play a role in lifting innovation more widely. But international orientation more generally is correlated with innovation – domestic manufacturers with foreign operations perform as much, if not

Figure 3.5. **Foreign direct investment**
Per cent of GDP, average 2000-03



Source: OECD (2005), *Science, Technology and Industry Scoreboard*, OECD, Paris.

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more, R&D and undertake as much innovation as do foreign-controlled firms in Canada. In any case, increased outward foreign direct investment observed in recent years is a positive development, not least because it allows Canadian firms to maximise their competitive advantages in international markets (Conference Board of Canada, 2006).

Canada's innovation strategy

The previous government laid out an innovation strategy for Canada in 2002 (Box 3.1) and embarked on a wide-ranging consultation process with the aim of building a national agenda for change involving all stakeholders. This culminated in a national summit that produced 18 priority recommendations for action (Government of Canada, 2002a).

One outcome of the strategy exercise was the development of a set of indicators to monitor Canada's innovation performance in the four key areas, and the government commissioned a benchmarking report from the Conference Board of Canada (Conference Board of Canada, 2004). This compared Canada's performance on 17 indicators against 10 other countries, although with considerable caution, noting both the value and the shortcomings of benchmarking when applied to innovation.[10, 11] Overall, the Board concluded that Canada has a number of strengths that could underpin an improvement in its innovation performance, but it also pointed out several areas where new indicators and/or a better understanding[12] are needed:

- In *Knowledge Performance*, a better measure of the intensity of innovation, such as the change in value-added (or revenues) attributable to innovation, more regional and sectoral indicators of innovation, and more sophisticated indicators of tangible outputs resulting from research activities.
- In *Skills*, a clearer understanding of the relationship between skills and innovation, improved knowledge of cross-country labour mobility and improved indicators for comparing intellectual property rights systems across countries.
- In *Innovation Environment*, more sophisticated comparisons of tax treatment of early-stage investments and broader assessments of the availability and cost of risk capital.
- In *Community-based Innovation*, indicators related to economic and social value at the community level, commonly-accepted definitions of clusters, and research and data assessing the full range of benefits flowing from broadband Internet connections.

More broadly, the benchmarking assessment pointed out that the strategy puts more emphasis on the creation of knowledge, in particular through research, than the transformation of that knowledge into innovation. Indeed, it suggests that Canada's ambition to be among the top five countries for total spending on R&D as a share of GDP by 2010 is not only clearly unrealistic but may represent misplaced effort. Instead, it proposed that the strategy should be revised to place greater emphasis on commercialisation of R&D.[13]

Nonetheless, many commentators still point to Canada's relatively low ranking for the share of aggregate business investment in R&D compared with the rest of the OECD and argue that stronger measures to boost it should be incorporated into the innovation strategy. But this conclusion overstretches the available evidence, for several reasons:

- The aggregate business R&D measure masks some important industry differences, with Canada's low R&D intensity being mainly evident in the auto industry and wholesale and retail trade (Ab Iorwerth, 2005). It also reflects the relatively small share of research-intensive industries, except for motor vehicles, in the Canadian economy as a whole.

Box 3.1. **Canada's Innovation Strategy**

Canada's innovation strategy has been organised into four key areas each with goals and specific targets. These are set out below, along with the first assessment, in 2004, of progress towards meeting them, which was commissioned from the Conference Board of Canada.

Knowledge performance

Goals: Vastly increase public and private investments in knowledge infrastructure to improve R&D performance and ensure that a growing number of firms benefit from the commercial application of knowledge.

Targets: By 2010, rank among the top five countries in the world in terms of R&D performance, at least double the government's current investment in R&D, rank among world leaders in the share of private-sector sales attributable to new innovations, and raise venture capital investments per capita to prevailing US levels.

Assessment 2004: Moving from 15th to 5th position in R&D investment will be challenging. Leading countries are continuing to increase their R&D investments, and Canada's rank has remained relatively constant over the past 10 years. Preliminary research suggests Canada is also lagging in commercialisation. A balance must be struck between the level of investments Canada is prepared to make and the ability to reap the benefits of those investments through the sale of innovative goods and services.

Skills performance

Goals: Develop the most skilled and talented labour force in the world, and ensure that Canada receives the skilled immigrants it needs and helps immigrants to achieve their full potential in the labour market and society.

Targets: Over the next five years, increase the number of adults pursuing learning opportunities by one million. Increase admission of Masters and PhD students at Canadian universities by an average of 5% per year at least until 2010. By 2002, implement the new Immigration and Refugee Protection Act and regulations, and, by 2004, significantly improve performance in the recruitment of foreign talent, including foreign students, by means of both the permanent immigrant and the temporary foreign workers programmes.

Assessment 2004: Canada has one of the most highly qualified labour forces in the world but lags in employment in science and technology occupations. Improvements need to be made to build on the capabilities of skilled immigrants. Canada has relatively fewer adults pursuing continuing education and training, but when they do, they invest considerable time. Yet what comprises essential "innovation skills" is not yet entirely understood.

Innovation environment

Goals: Address potential public and business confidence challenges before they develop, ensure that stewardship regimes and marketplace framework policies are world-class, improve incentives for innovation, and ensure that Canada is recognised as a leading innovative country.

Targets: By 2010, complete systematic expert reviews of the most important business and regulatory regimes. Ensure the business taxation regime continues to be competitive with those of other G7 countries. By 2005, substantially improve Canada's profile with international investors, and, by 2004, fully implement the Council of Science and Technology Advisors' guidelines to ensure the effective use of science and technology in government decision-making.

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Box 3.1. **Canada's Innovation Strategy** *(cont.)*

Assessment 2004: Canada still has room for improvement in corporate taxation and, while the tax treatment of R&D is attractive by international standards, that advantage is waning. Continued focus on the development of smart regulations will contribute to a favourable innovation environment; indicators suggest that confidence in Canada's innovation potential is beginning to slip. Canada ranks highly for the volume of venture capital investment, but a more complete understanding of risk capital is required to make true comparisons.

Community-based innovation

Goals: Governments at all levels work together to stimulate the creation of more clusters of innovation at the community level. Federal, provincial/territorial and municipal governments co-operate and supplement their current efforts to unleash the full innovation potential of communities across Canada, guided by community-based assessments of local strengths, weaknesses and opportunities.

Targets: By 2010, develop at least 10 internationally recognised technology clusters, and significantly improve the innovation performance of communities across Canada. By 2005, ensure that high-speed broadband access is widely available to communities.

Assessment 2004: Measuring Canada's innovation performance at the community level will require more research. Nonetheless, momentum appears to be growing in the development and understanding of clusters. Canada's communications infrastructure, particularly broadband penetration, is among the best in the world.

Source: Government of Canada (2002b) and Conference Board of Canada (2004).

- Although there is widespread consensus that, left alone, firms would undertake too little R&D investment because of externalities, empirical estimates of the shortfall vary considerably, and it is debatable whether results for the United States, for example, could be assumed to apply to Canada (Gera *et al.*, 2006).
- It is difficult to assess whether the current level of government support to business-sector R&D is too much, too little or just enough to ensure that social costs and benefits are equalised at the margin (Jaumotte and Pain, 2005b).
- The balance between research and development may not be optimal, especially given the growing importance of services, where innovation is somewhat less reliant on scientific discovery and exploitation and may depend more heavily on process enhancements (OECD, 2006).

These uncertainties point to the importance of further research into the innovation process itself, in order to provide a more robust underpinning for the strategy. In any case, it would make more sense to focus policy efforts on establishing a coherent and rational incentive structure that would bring forward the optimal amount of R&D, rather than trying to target a particular R&D level.

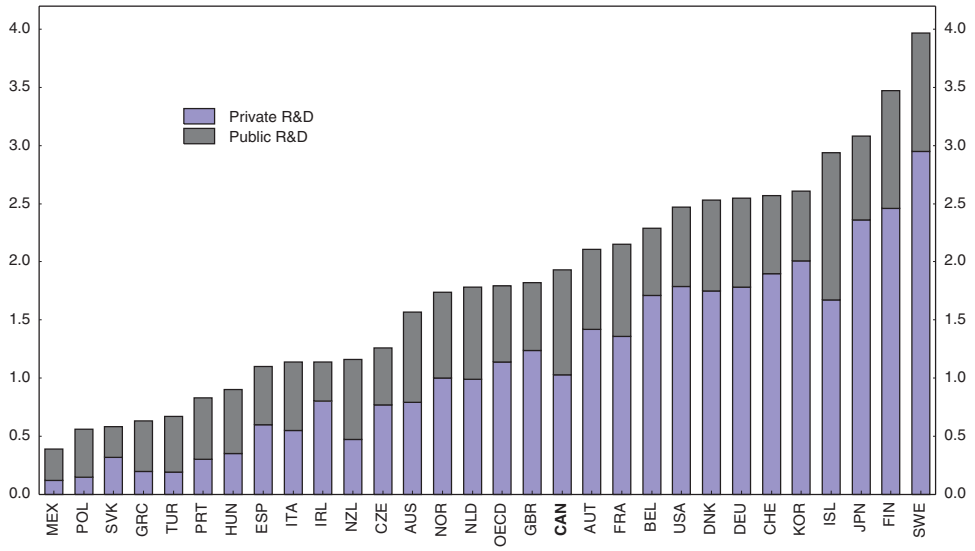
Optimising investments in the knowledge base

Innovation involves the transformation of knowledge into new or improved products and processes. Thus, increases in the stock of knowledge are generally considered important precursors of innovation. R&D is one important way in which it can be created, although the importance of other ways of developing it should not be under-estimated.

Indeed, building up knowledge in processes, management and marketing areas may be just as important for innovation, especially in services where the traditional R&D model may not apply (OECD, 2006). In any case, Canada spends almost 2% of GDP on R&D, with a larger share of public R&D than many countries (Figure 3.6). The government has articulated three main reasons for funding R&D (Industry Canada, 2005):

- To improve Canada's performance in commercialising technologies.
- To strengthen Canada's social foundations by bringing new economic and social opportunities to Canadians across the country and in all fields of national endeavour.
- To help ensure Canada's place of pride and influence in the world, by bringing forward new Canadian ideas and technologies to address global issues and challenges.

Figure 3.6. **Expenditure on R&D performed in public and business sectors**
Per cent of GDP, 2003[1]



1. 2002 for Australia, Austria, Portugal, Switzerland and Turkey; 2001 for Greece and Mexico.
Source: OECD Main Science and Technology Indicators database.

Public-sector R&D

The government increased its spending on science and technology activities[14] by almost 40% in real terms over the past decade, and in 2004 allocated CAD 9 billion (around 0.7% of GDP) to it (Statistics Canada, 2005). OECD member governments now attach greater importance to research priority setting and are developing and using mechanisms to set priorities and allocate funds (OECD, 2003b). A number of countries either operate a predominantly top-down approach or integrate top-down and bottom-up exercises. But Canada's priority setting is essentially a bottom-up, decentralised approach: the government advisory bodies on research each operate separately and interact with different government agencies. On the basis of spending shares, public health emerges as the highest priority, followed by social structures and relationships: spending is channelled through many different agencies.

A groundswell of support has emerged within the research community for a more co-ordinated and strategic framework for major science projects, as recommended by the Auditor General in 2001. The government's National Science Advisor proposed a framework for evaluating and prioritising proposals for major science investments and overseeing the management of those projects once approved and sought comments on it during the course of 2005. This process emphasised the need to adopt a clearly articulated, integrated national science and technology policy. This strategic step, which would bring Canada into line with OECD best practice, remains to be taken.

Business-sector R&D

Knowledge creation in the form of R&D also involves the business sector. Indeed, the business sector both funds and performs around half of all R&D (Table 3.3) although the top 10 companies have carried out one third of all intramural R&D on average over the past 20 years (Statistics Canada, 2006). Some of private sector's activity is financed indirectly by federal and provincial SR&ED tax credits, although this contribution is not attributed to the government as funding sector. Overall business R&D intensity remains relatively low, even with both federal and provincial/territorial tax incentives[15] and subsidies designed to encourage business R&D expenditures (Figure 3.7). Indeed, cross-country analysis suggests that changes in public spending on R&D (including, but not only, grants and tax incentives) have generally played a smaller role in boosting business-sector R&D intensity than have changes in regulation and changes in framework and innovation conditions (Figure 3.8).

Across the OECD, the use of direct grants to individual institutions and firms has generally diminished,[16] and tax measures targeted at business R&D have become more important over time (Jaumotte and Pain, 2005b). In part, this trend reflects the practical difficulties associated with grants, including correctly identifying projects offering the highest marginal social returns as well as deciding who is best placed to carry them out. Evaluating the outcomes has also proved difficult. The weight of international empirical analysis is that public subsidies as typically operated are not generally effective in boosting R&D expenditures. But it is an open question whether this is an intrinsic result or reflects shortcomings in the design of specific grants programmes and the inclusion in the data of some R&D contracts awarded to the private sector for carrying out non-commercial research, for example in defence, health and other public services.

Table 3.3. **Gross domestic expenditure on R&D**

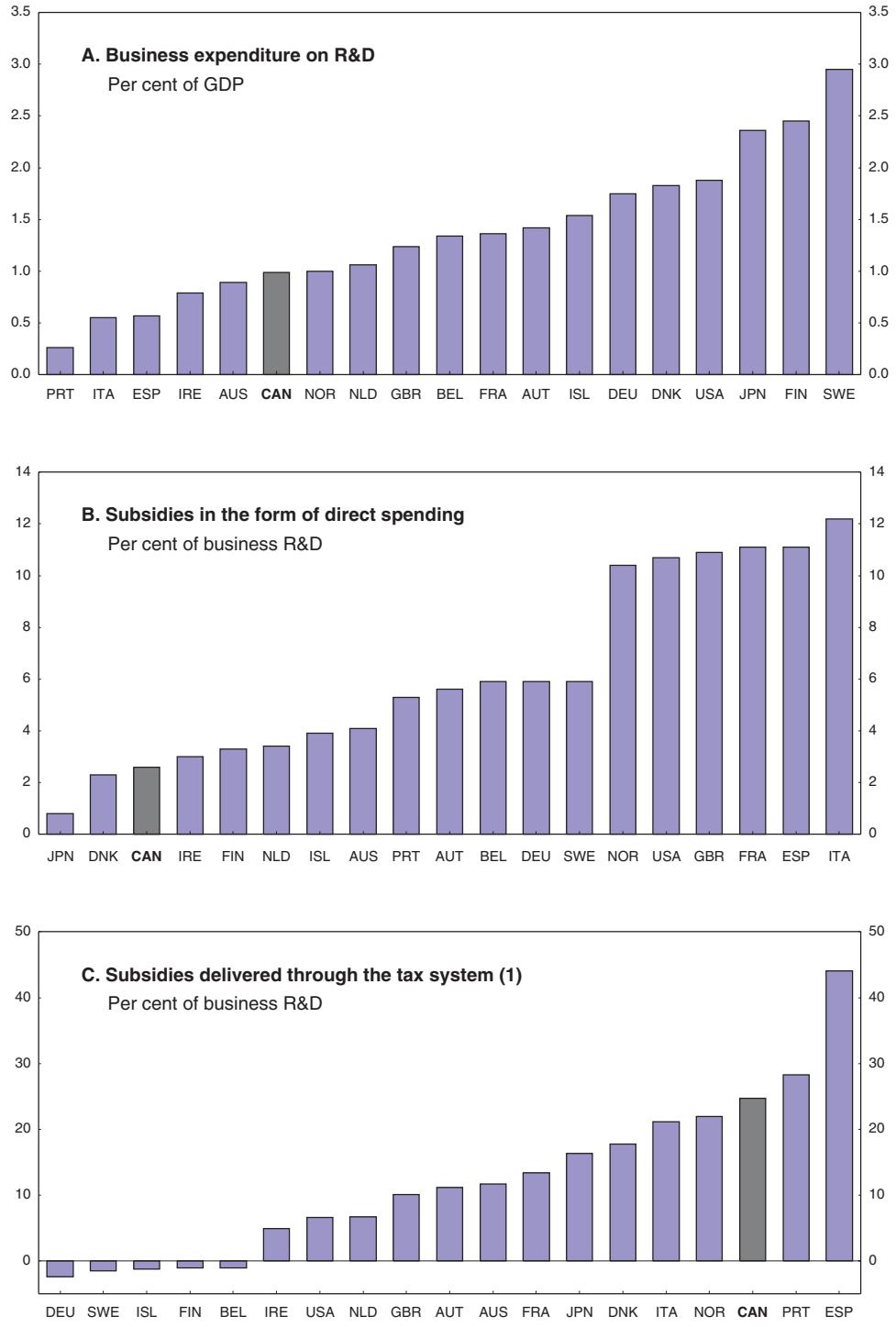
Percentage shares by performing and funding sectors, 2004

Funding sector	Performing sector					
	Federal government	Provincial government[1]	Business enterprises	Higher education	Private non-profit	Total
Federal government	8.9	0.0	1.1	9.3	0.0	19.3
Provincial government	0.0	1.2	0.2	4.2	0.1	5.8
Business enterprises	0.2	0.2	42.5	3.3	0.0	46.2
Higher education	0.0	0.0	0.0	17.6	0.0	17.6
Private non-profit	0.0	0.0	0.0	3.1	0.1	3.2
Foreign	0.0	0.0	7.4	0.5	0.0	7.9
Total	9.1	1.3	51.2	38.1	0.3	100.0

1. Including provincial research organisations.

Source: Statistics Canada (2005), *Federal Scientific Activities 2004-2005*, Statistics Canada, Ottawa.

Figure 3.7. **Government support for business R&D**
2003-04



1. Average for small and large firms.

Source: OECD, Main Science and Technology Indicators database.

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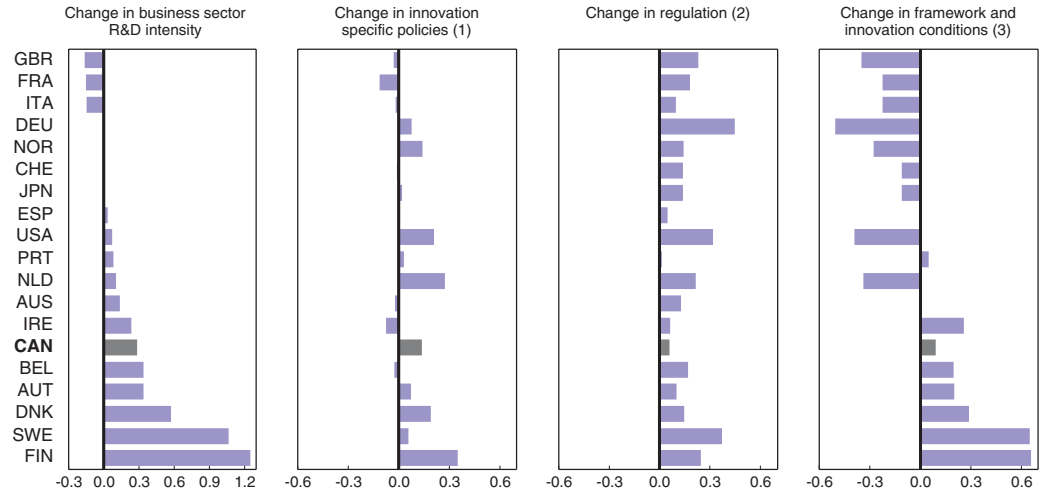
Figure 3.8. **Contribution of policies and other factors to R&D intensity**

Percentage points of GDP, from 1991 to 2000



1. Includes public financial support for private R&D (both grants and tax incentives), R&D performed in public institutions and the share of the latter that is funded by the private sector.
2. Includes product market regulation, employment protection legislation and the strength of intellectual property rights.
3. Includes indicators of a country's exposure and capacity to absorb foreign knowledge as well as of broad financial and economic conditions. Residual factors that can not be accounted for by the statistical relation are also included in this category.

Source: OECD (2006), *Economic Policy Reforms: Going for Growth*, OECD, Paris.

In contrast, there is some evidence that tax-based measures can lift business R&D intensity, at least in some circumstances (Jaumotte and Pain, 2005a). But the net social benefits, especially taking account the cost of foregone tax revenues and possible deadweight losses, remain difficult to estimate. Tax incentives may also distort choices over project details or even lead firms to engage in significant tax planning efforts so as to maximise their tax credits. Empirical evidence for Canada is mixed.[17] One study found the SR&ED credits have been cost-effective by generating around CAD 1.30 additional R&D spending for each dollar of tax revenue foregone (Klassen *et al.*, 2004). A separate study goes further and finds that Canada's tax credits have not only led to additional R&D engagement among firms but also in turn generated additional innovation output (Czarnitzki *et al.*, 2004). But an earlier estimation suggested that the tax credit generated only 97 cents for each dollar of tax expenditure (Dagenais *et al.*, 1997). Another analysis fails to find consistently statistically significant relationships between tax incentives and business R&D intensity, whereas government R&D grants did make a positive difference (Ghosh *et al.*, 2004). In fact, less than half of innovating manufacturers actually used the tax credits, although almost 60% used government support programmes.

There has been considerable policy debate about whether, and what, changes might be needed to the present government support arrangements. Broadly speaking, three different options have been put forward. The first would be to redesign the present SR&ED tax credit rules (Box 3.2) to make them more efficient and effective; the second would be to shift the mix away from tax credits towards more direct grants; and the third would be to scale back specific tax credits and implement corporate tax cuts that would lower the very high marginal effective tax rates on investment (see Chapter 2).

Box 3.2. **SR&ED tax credits for business R&D expenditures**

The federal government provides the Scientific Research and Experimental Development (SR&ED) Investment Tax Credit, which has the objective of encouraging the private sector to undertake scientific research and experimental development in Canada and, in particular, to assist small businesses in doing R&D. Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, British Columbia, and the Yukon also offer tax incentives for R&D.

The federal tax credit is earned on eligible current and capital expenditures performed by, or on behalf of, a taxpayer and related to the taxpayer's business. Eligible expenditure is generally based on the OECD's *Frascati* definition of R&D and consists of:

- *Experimental development* done to achieve technological advancement to create, or improve, new materials, devices, products, or processes. (Most SR&ED claims involve experimental development.)
- Applied research done to advance scientific knowledge with a specific practical application in view.
- Basic research done to advance scientific knowledge without a specific practical application in view.
- Support work that directly supports and is commensurate with the needs of experimental development, applied research, and basic research. This includes only the following specific types of work: engineering; design; operations research; mathematical analysis; computer programming; data collection; testing; and psychological research.

Three criteria must be met for the expenditure to qualify:

- *Scientific or technological advancement:* the work must generate information that advances the understanding of scientific relations or technologies.
- *Scientific or technological uncertainty:* whether a given result or objective can be achieved, or how to achieve it, is unknown or cannot be determined based on generally available scientific or technological knowledge or experience.
- *Scientific and technical content:* there must be evidence that qualified personnel with relevant experience in science, technology, or engineering have conducted a systematic investigation through experiment or analysis.

The tax credit rates and refundability rates are set out below.

Table 3.4. **Federal SR&ED tax credit rates and rates of refundability**

Per cent

Business type	Credit rates	Refundability rates	
		Current expenditures	Capital expenditures
Unincorporated businesses	20	40	40
CCPCs with prior-year taxable income of CAD 300 000 or less[1]			
Expenditure up to expenditure limit[2]	35	100	40
Expenditure over expenditure limit	20	40	40
CCPCs with prior-year taxable income of CAD 300 000 and CAD 500 000[1]			
Expenditure up to expenditure limit[3]	35	100	40
Expenditure over expenditure limit	20	0	0
CCPCs with prior-year capital employed in Canada between CAD 10 million and CAD 15 million			
Expenditure up to expenditure limit[4]	35	100	40
Expenditure over expenditure limit	20	0	0
All other corporations	20	0	0

1. Taxable income thresholds of CAD 300 000 and CAD 500 000 will be raised to CAD 400 000 and CAD 600 000 respectively in 2007.
2. Expenditures limit is generally CAD 2 million per annum.
3. Expenditures limit for CCPCs is phased out for prior-year taxable income between CAD 300 000 and CAD 500 000.
4. Expenditures limit for CCPCs is phased out for prior-year taxable capital employed in Canada between CAD 10 million and CAD 15 million.

Tax expenditures associated with the SR&ED programme were estimated at CAD 2.5 billion in 2005 and delivery of the programme employs more than 500 staff in the Canada Revenue Agency.

Source: Canada Revenue Agency and Finance Canada.

In any case, the present arrangements have two features that may dilute their effectiveness and merit reconsideration. The first is the special treatment for small firms. The tax structure more generally imparts a bias towards small firms that translates into a less-favourable treatment for larger firms (see Chapter 2) and the refundable element of the SR&ED tax credits for smaller enterprises adds to that distortion. Canada is not alone in providing more generous R&D tax credits to small firms, although a twist in the rules is that the more generous provisions only apply to the subset of private corporations that are defined as Canadian-controlled Private Corporations[18] (CCPCs). A better approach might be to target new firms rather than all small firms, especially as they are most likely both to be finance-constrained and to have no taxable income against which to claim the credit. The costs and benefits of such a shift would merit further investigation.

The second element is the application of tax credits to the level of R&D expenditure rather than to incremental expenditures. Although incremental tax credits are more complex to design, they can do a better job of encouraging research at the margin as long as the base period is carefully defined (OECD, 2003a). Indeed, some ways of defining base periods (*e.g.* the rolling average base) can actually discourage firms from undertaking R&D (Bloom *et al.*, 2001). In contrast, a fixed-base system or using a firm's all-time maximum R&D expenditure can minimise these perverse incentives. An incremental approach could reduce the fiscal cost of the incentives programme and also reduce deadweight losses, and could be explored further. But concerns that it would lead to sub-optimal R&D spending relative to spillovers also need to be examined carefully. Perhaps unsurprisingly, established firms that already carry out a large quantity of R&D tend to prefer the level approach (OECD, 2003a).

Transforming knowledge into innovation

Greater attention is now being given to ways to commercialise Canada's knowledge and transform it into innovation. The previous government set up an Expert Panel on Commercialization in May 2005 to advise it on how to ensure more new technologies and products reach the Canadian marketplace. The panel recommended the establishment of a business-led Commercialization Partnership Board to advise the Minister of Industry and ensure the private sector has a strong voice in the design of public policies to improve commercialisation (Expert Panel on Commercialization, 2006). The group also recommended the federal government take early action in three areas:

- *Talent:* develop a new Canada Commercialization Fellowships Program; spur private sector hiring of highly qualified personnel with commercialisation talents; and develop and retain talent for success in the global marketplace.
- *Research:* create a Commercialization Superfund; expand federal programmes that support seed and start-up firms in proving their business ideas; and create a Canadian SME Partnerships Initiative.
- *Capital:* improve access to early-stage angel financing and expertise; identify improvements in the expansion-stage venture capital market; and remove barriers to investment for foreign venture capital investors.

Commercialising publicly-funded R&D

One element of these commercialisation efforts is developing and bringing to market new products and processes based on publicly-funded R&D. It is assumed that universities,

in particular, provide large "untapped reservoirs" of potentially commercialisable knowledge that just needs encouragement and incentives to be brought to market (Wolfe, 2005). This thinking has underpinned three shifts in policy across most countries: closer linking of government funding for academic research to economic objectives; fostering more long-term relationships between firms and academic researchers; and encouraging universities to more actively seek to commercialise their research (Etzkowitz and Webster, 1998).

Canada has seen a rise in the number of inventions by researchers in universities and hospitals, with some 3 000 domestic patents held by the end of 2003 (Read, 2005). Some 45% of patents were commercialised,[19] generating CAD 56 million to date in intellectual property revenue. Higher education institutions also reported 876 spin-off companies, with more than two-thirds in health, information, or engineering and applied sciences. Around three-quarters of all higher education institutions are now actively managing their intellectual property, in part reflecting significant increases in government funding for technology transfer offices. Rules governing the assignment of intellectual property rights and constraints on commercialisation are established by each institution (see, for example, University of Toronto, 2005).

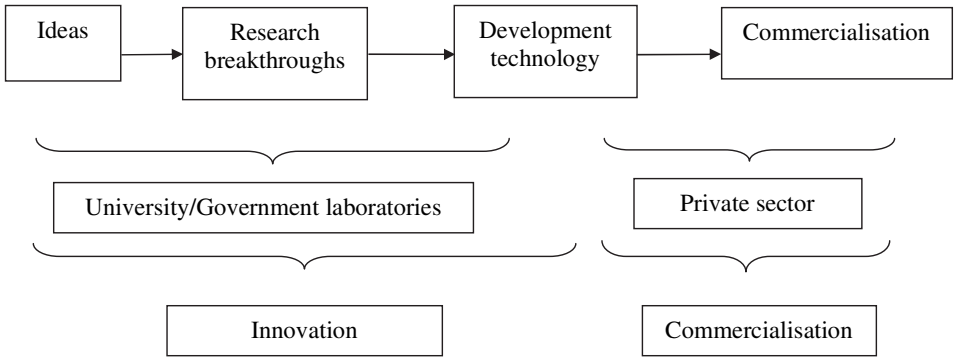
However, increasing the emphasis on commercialisation of R&D undertaken in public research institutions also carries risks. First, it may crowd out some basic science activity that is, by nature, effectively non-commercialisable but still valuable to society. Second, it may encourage academics and/or their institutions to assert proprietary rights over their research to such an extent that it interferes with the socially optimal flow of knowledge (Aghion *et al.*, 2005). Third, it may be based on an incorrect model of how universities most effectively contribute to innovation. Although the standard model underpinning commercialisation policy assumes a linear progression from basic science through applied research to commercialisation,[20] this model may not capture the feedback cycles within business that drive innovation (Figure 3.9). In the cycle approach, the critical contribution of universities is the flow of university-trained graduates out to the business sector[21] (Wolfe, 2005). The Canadian company Research in Motion provides a practical illustration of this. Notwithstanding its close association with the University of Waterloo, it has licensed only two technologies from universities since it started more than 20 years ago, whereas it has hired over 5000 students over the same period (Lazaridis, 2004). If the linear model of innovation does not capture the contribution of universities to innovation correctly, then pressure to commercialise university research itself could lead to wasted effort and divert resources from where they could make a stronger contribution to innovation in the longer run, via basic research and training people[22] (Crelinsten, 2005).

Innovation through skilled and talented people

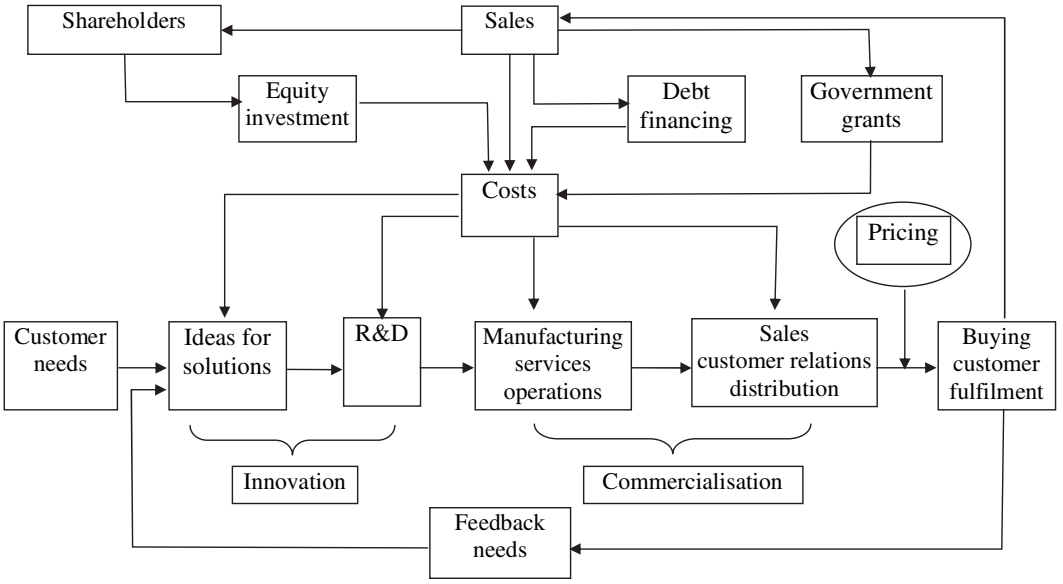
People with skills and talents are clearly key players in the innovation process, although it is not clear exactly what skills and talents are needed.[23] Canada, like many countries has endeavoured to increase its supply of highly-skilled researchers. However, the marginal net rate of return for a masters degree (compared with a bachelors degree) in science is barely positive and significantly smaller than for non-science fields (Stark, 2006). The overall net rate of return for any doctorate compared to a master's degree is even smaller. This suggests that there is no excess demand for such qualifications. If so, increasing the supply of graduates may simply lead to increased migration of highly-skilled workers to the United States, in particular, where the returns are significantly larger.[24, 25]

Figure 3.9. **Commercialisation models**

A. Linear view



B. Cycle view



Source: H.D. Barber, "Innovation and Commercialization", RE$EARCH MONEY Annual Conference, November 2003.

In contrast, master's degrees in commerce and business generate the highest rate of return in Canada, indicating that the labour market values these qualifications more highly and is willing to pay more for them. As noted above, a range of studies have highlighted the importance of strategic and management capabilities in the innovation process. Indeed, raising the stock of management skills available to the business sector by increasing university places in MBA and other business programmes may make a stronger contribution to innovation performance over the longer term than training more scientists, at least until Canadian demand for scientists and the rates of return to such human capital investment rise.

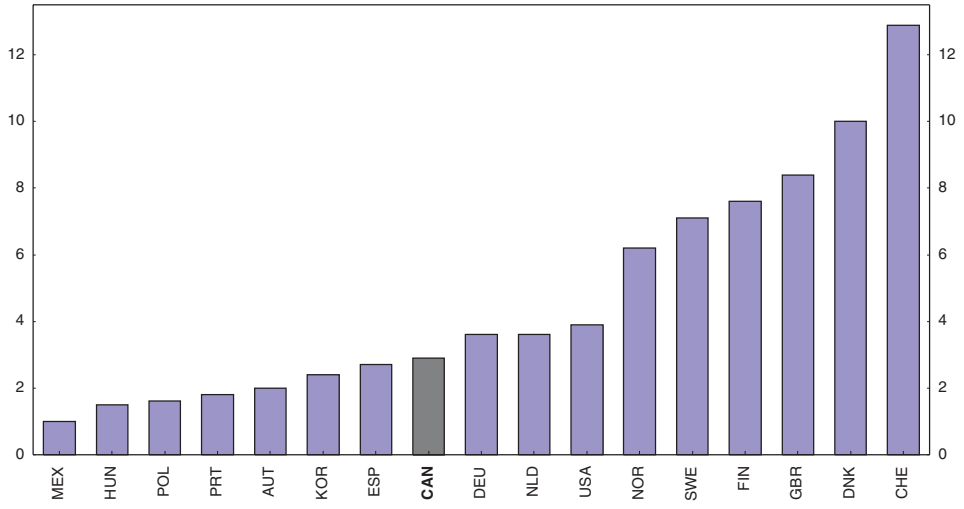
The capacity to diffuse innovation rapidly and efficiently throughout the economy also depends on the general skill level of the entire working-age population. Canada has one of the highest rates of post-secondary education in the OECD overall and the share of 25 to

34 year-olds with university degrees has almost caught up to the share in the United States and is well ahead of the OECD average (OECD, 2005b). But the more relevant test may be whether Canadians have the general skills and competencies needed to function effectively in a knowledge-based economy. The Adult Literacy and Life Skills Survey (ALL) attempts to assess this through a range of literacy, numeracy and problem-solving tasks of increasing difficulty (OECD, 2005c). On these criteria, some 9 million working-age Canadians (42%) appear to have inadequate literacy skills (below level 3). Fifty per cent of working-age Canadians appear to fall short on numeracy, and 68% have insufficient problem-solving skills. In contrast, Norway, the country with the best results, had only 34% achieving sub-standard levels for literacy, 40% for numeracy and 60% for problem-solving skills.

Skill levels tend to be lower for older people and are linked to level of educational attainment across all age-groups. Literacy competencies are also closely correlated with the intensity of ICT use. Innovation involving new ICT technology and associated organisational change may be more difficult to implement if the workforce has difficulty mastering the transition. But Canadians are less likely to participate in adult education and training than in some other OECD countries (Figure 3.10). And adult education and training, in Canada and elsewhere, tends to be disproportionately taken by younger, already well-educated workers (OECD, 2005c).

Figure 3.10. **Adult education and training participation**[1]

Per cent, 25 to 64 year olds, 2002



1. Using the adjusted participation rate, which measures the fraction of time an average person spends on learning activities during the year.

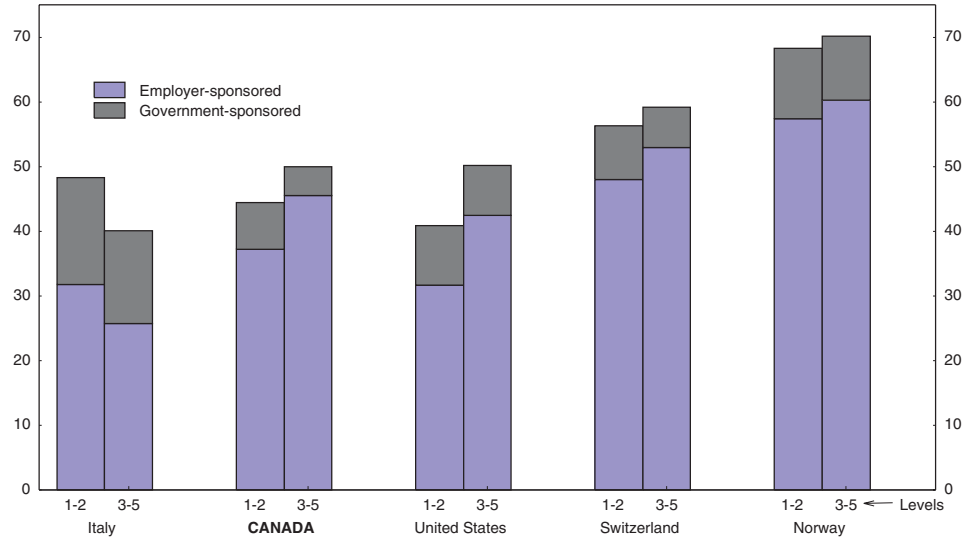
Source: OECD (2005), *Promoting Adult Learning*, OECD, Paris.

This suggests that greater attention should be paid to designing effective adult learning policies to raise these core skills. OECD countries have generally found this a challenging task, although a cross-country review of adult learning points to some best practices (OECD, 2005d). These include campaigns to help people understand the return they could get from investing in upgrading their skills, well designed co-financing arrangements and providing quality assurance of courses offered. Indeed, as noted in the

previous *Survey*, there are a number of reasons why Canadians do not undertake more training, including inconvenient times, conflicts with work schedules and high workloads. Nonetheless, financing remains the single most important reason (Peters, 2004). For those who do participate in adult education and training, employers and individuals shoulder a higher share of the cost than they do in several other countries including the United States (Figure 3.11). This is the case even for those at the two lowest levels of literacy. This suggests that Canada could look for more effective co-financing arrangements to boost life-long learning, especially for the low-skilled, which would in turn facilitate the diffusion of innovation through the economy. Assisting low-skilled adults to upgrade their skills would also contribute to social objectives (see Chapter 5).

Figure 3.11. **Financing of adult education and training**

Per cent[1]



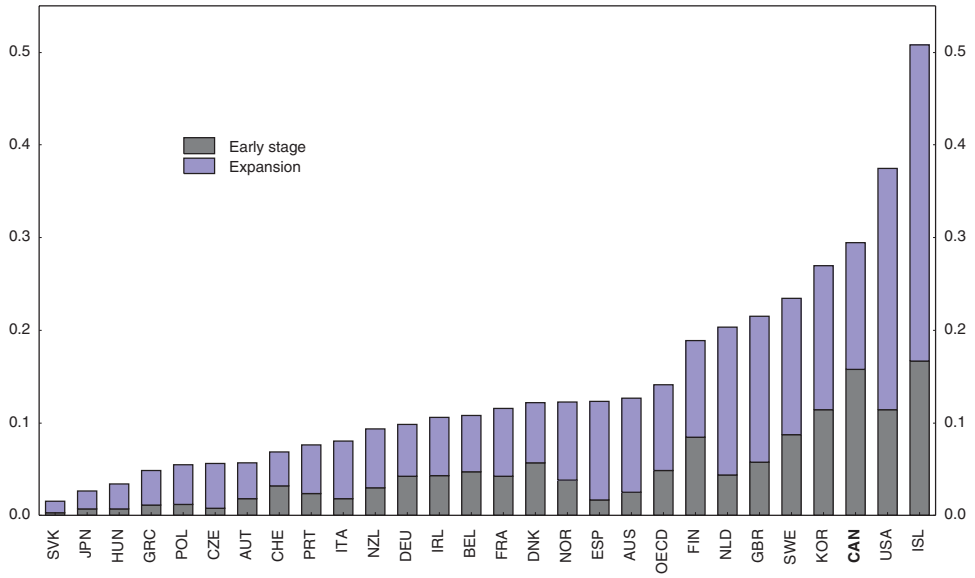
1. Per cent of participants in adult education and training who received financial support from various sources, by document literacy, populations aged 16 to 65 who worked in the last 12 months, 2003.

Source: Statistics Canada and OECD (2005), *Learning a Living*, Statistics Canada and OECD, Ottawa, Paris.

Financing innovation

Availability of finance for innovation, especially for start-up ventures, has been raised as an issue, although Canada actually has one of the highest flows of venture capital investment among OECD countries (Figure 3.12). Indeed, it has typically been difficult to establish a robust link between venture capital and innovation inputs such as R&D spending (Jaumotte and Pain, 2005c). In any case, quality is an issue. In Canada, a large share of venture capital funds has been channelled through a unique arrangement, known as Labour-Sponsored[26] Venture Capital Corporations (LSVCCs – also commonly known as labour-sponsored investment funds or LSIFs). These currently account for around 40% of all venture capital raised. These funds may invest up to CAD 15 million in Canadian businesses that have less than 500 employees and less than CAD 50 million in assets. Individuals using these funds as a savings instrument obtain income tax credits as long as the investment is held for eight years.[27] However, investors in other venture capital funds do not benefit from similar tax advantages.

Figure 3.12. **Venture capital investment flows**
Per cent of GDP, 2000-03



Source: OECD, Venture Capital database.

The LSVCCs have distorted the market for venture capital, lowering the average quality of deals and limiting the supply of equity to non-traditional industries and newer companies (Baygan, 2003). To some extent this is because the LSVCCs have objectives relating to social development as well as profit maximisation. Indeed, net internal rates of return for the market as a whole are remarkably weak and often negative (Table 3.5). Low returns and the seasonal pattern of inflows from individual investors suggest that they largely function as tax shelters. At the same time, other VC funds are crowded out as LSVCCs can scoop up investment opportunities with lower required internal rate of returns. However, the governance structure of LSVCCs leads to less-skilled fund managers and poorer fund performance (Cumming and MacIntosh, 2003).

Table 3.5. **Net investment returns**
Net annual internal rate of return (all periods ending 30 June 2005)

Investment category	Net horizon returns Periods in years					Cumulative since inception Net returns (annualised)		
	Funds in sample	1	3	5	10	Upper quartile	Median	Lower quartile
Early stage venture capital	57	–5.7	–12.1	–12.4	–3.4	4.5	–3.8	–15.1
Balanced venture capital	56	–3.4	–9.4	–8.9	–2.8	6.5	–1.7	–11.3
Later stage venture capital	13	–2.9	–6.4	–22.1	–3.3	7.7	0.0	–14.4
All venture capital	126	–3.9	–9.9	–11.5	–3.0	5.8	–2.4	–13.9
Buyouts	18	6.2	17.1	15.7	13.6	13.9	9.6	0.0
Mezzanine	20	18.1	13.6	7.5	8.8	23.0	5.8	3.5
Buyout and mezzanine	38	7.7	16.6	14.4	12.8	14.6	7.5	0.0
All venture capital and private equity	164	0.3	–1.8	–4.2	2.4	8.6	0.0	–10.4

Source: Canadian Venture Capital and Private Equity Association (2006), "Canadian venture capital and private equity industry performance data", Toronto, 23 January.

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As well as the adverse impacts on the venture capital market's performance, Finance Canada estimates that the annual federal tax expenditures amount to around CAD 200 million per year. Indeed, cross-country evidence on factors affecting venture capital suggests that a well designed overall business taxation environment produces better results than targeted tax measures (Baygan, 2004; Romain and van Pottelsberghe de la Potterie, 2003). Overall, the damaging effects of the LSVCC tax credits on the financing of innovation along with their fiscal costs present a clear argument for their elimination.

Another complaint is that there are insufficient "investment-ready" companies becoming available to venture capital funds due to a shortage of angel investors (National Angel Organization, 2005). It is not clear how this claim could be substantiated. In a survey of early-stage venture capital investors, the most important issue identified was the scarcity of the very specific professional skills needed for successfully managing early-stage ventures (Macdonald and Associates Limited, 2005). It is also well established that the biggest contribution of angel investors is their business and management acumen, rather than the financial support that they contribute. Careful assessment of projects can also predict future commercial success quite well, as demonstrated by the Inventors Assistance Programme run by the non-profit Canadian Innovation Centre. In a sample of 1 091 inventions they evaluated, 65% of those that they predicted would be successful[28] generated positive internal rates of return (IRR), and the median IRR was 26%. In contrast, half of those that they rated doubtful were nonetheless continued and only 23% generated a positive IRR and the median IRR was –28% (Åsterbro, 2003). This suggests that weaknesses were inherent in these projects themselves rather than in their "investment-readiness" or access to finance. In sum, further careful research into the true nature of any policy gap would be required before allocating public resources to new financing initiatives.[29]

Conclusions and policy recommendations

Overall, there is considerable scope for lifting the rate of innovation in Canada. Federal, provincial and territorial governments can all contribute to this process both by ensuring that the overall business environment is conducive to innovation and by designing innovation-specific policies that support and enhance the process. Recommendations that emerge from the analysis presented in this chapter are summarised in Box 3.3.

Box 3.3. **Policy recommendations for innovation**

The highest priority for enhancing Canada's innovation performance is to improve the overall business environment in line with the recommendations set out in Chapter 2. Those measures should be complemented by the following actions:

- Undertaking research into those aspects of the innovation process that remain poorly understood or contested, so as to provide a stronger analytical and empirical underpinning for the Innovation Strategy. Such work should be carried out before adding new policy initiatives to the strategy that would involve significant direct or indirect commitments of taxpayers' funds. It should also be used to critically reassess the net economic benefits flowing from existing programmes and policies.
- Developing a clearly articulated and integrated national science and technology policy and a priority-setting exercise for Canadian science, within which individual project proposals can then be assessed.

Box 3.3. **Policy recommendations for innovation** *(cont.)*

- Examining whether the efficiency of the SR&ED tax credits might be improved. This should include exploring the option of carefully redesigning them to target R&D in new firms and to encourage incremental spending on R&D.
- Putting more emphasis on business management programmes (including those designed for mid-career executives) and removing obstacles to expanding such courses in response to demand.
- Encouraging less-skilled working-age Canadians (including immigrants) to upgrade their literacy, numeracy and problem-solving skills by promoting better understanding among target groups about the rewards in the form of higher future wages and ensuring well-designed co-financing arrangements are available.
- Eliminating the federal and provincial tax credits for investments in Labour-Sponsored Venture Capital Corporations so that they are required to compete on the same basis as other venture capital funds.

Notes

1. Performance in this context is assessed according to profitability, employment, labour productivity and wages.
2. Work on estimating spillovers has essentially concentrated on business R&D, rather than the broader concept of innovation itself (see, for example, Wieser, 2005).
3. Innovation involves both existing firms making incremental enhancements to technologies and independent inventors and entrepreneurs who produce disruptive technologies (Baumol, 2006).
4. Innovation inputs include such activities as R&D, intellectual property protection and human capital development that can be transformed into subsequent innovation when the results of these activities are implemented.
5. These data exclude enterprises with no paid employees. US data are taken from the US Census bureau's Statistics of US Businesses: 2003 database and Canadian data are provided by Statistics Canada's Longitudinal Employment Analysis Program database.
6. Most of these successful new entrants in Canada were serving mature markets, and only a quarter of them considered that their industry's products quickly become obsolete, whereas almost half believed that production technology changed rapidly (Baldwin and Gellatly, 2003).
7. Entrepreneurial values were also cited as an important factor in explaining the success of small Canadian companies (Baldwin and Gellatly, 2003).
8. Six variables were used from the 1999 Innovation Survey as indicators of technology invention and adoptions namely: patent applications; acquisition of technologies; trademarks; copyrights; R&D; and industrial design. These are innovation activities or inputs and do not necessarily correspond to innovation outputs within the Survey time frame.
9. ICT investment as a share of GDP for the business sector was 2.1% in 1987 and 2.5% in 2004 in Canada, compared with 2.8% in 1987 and 4.1% in 2004 in the United States. Only a relatively small proportion of the gap with the United States can be explained by adjusting for differences in industry composition and firm-size distribution.
10. The caveats can be summarised as follows: benchmarking methodologies do not involve any information about optimal levels; they often include indicators that do not have a firm empirical link to the desired outcome; there may be few valid and reliable indicators, and proxy indicators may be misleading; they do not account for underlying differences, such as economic size and structure, in the entities being compared; and there is a tendency to measure the quantifiable and neglect qualitative aspects (Conference Board of Canada, 2004).

11. This exercise can be compared with the European Innovation Scoreboard, which covers the 25 EU member states, six other European countries, the United States and Japan. The 26 indicators are grouped into innovation drivers, knowledge creation, innovation and entrepreneurship, application and intellectual property (*http://trendchart.cordis.lu/*).

12. Some of these issues were canvassed in a workshop hosted by Statistics Canada at the end of 2003 (Earl and Gault, 2004).

13. The Board also argued that the strategy could be fine-tuned to focus knowledge performance on particular niches and strengths where Canada can most effectively develop world-class capabilities, rather than striving to excel on all fronts. A further conclusion was that business should play a more prominent role in the strategy, since Canadian companies appear to under-invest in precursors to innovation such as R&D, training and new machinery and equipment.

14. Around 63% of spending was allocated directly to R&D, and the remainder comprised related scientific activities (RSA) such as data collection, information services and special studies. These data do not include the Scientific Research and Experimental Development (SR&ED) tax credits provided to business.

15. In fact, the marginal effective tax rates for R&D have been estimated to vary across provinces from about minus 40% in Alberta to over minus 200% in Quebec (McKenzie, 2005). These variations reflect not only differential federal tax treatment across provinces but also heterogeneous provincial taxes.

16. This may also reflect scaling back of military-related R&D carried out by the private sector under contract arrangements. Such expenditures are not intended to stimulate business R&D overall, but to deliver defined projects. But such arrangements are difficult to identify and exclude from the data.

17. Two often cited studies in support of the effectiveness of the SR&ED tax credit are not discussed further here as they have limited empirical value. The first proceeded by asking recipients of the tax credit how much they would reduce their R&D expenditures if the tax credit was eliminated (Finance Canada, 1997). The second was based on a small sample of only 27 firms (Bernstein, 1986).

18. A CCPC must not only be a private corporation (*i.e.* without shares listed on a public stock exchange) but may not be controlled directly or indirectly by a public corporation or by non-Canadian residents or a combination of the two.

19. This ratio concerns only the subset of patents where commercialisation information was reported.

20. An interesting corollary of this model is that a country such as Canada would not need to do basic science itself as it could buy it in from elsewhere and insert it in at the appropriate point on the innovation production line.

21. These people bring to industry not only the knowledge and research skills honed in a university environment but also a network of academic contacts and a stock of tacit knowledge. (Tacit knowledge cannot easily be codified and transmitted electronically, in contrast to codified knowledge that can be disseminated through standard academic publication channels.) It is argued that it is these researchers' ability to "learn through interacting" within the firm to connect knowledge with market opportunities that generates innovation.

22. It remains an empirical question whether greater emphasis on applied research might undermine the training benefits that come from the greater opportunity for unplanned discoveries associated with basic research.

23. Another challenge for the education system at all levels is that an education system designed to produce graduates who are good at incremental innovation may, at the same time, stifle the creativity and imagination needed for major breakthroughs (Baumol, 2004). However, since both types of innovation are important and complement each other, the education system at all levels faces the challenge of encouraging originality and creativity as well as developing knowledgeable, rigorous and well trained thinkers.

24. For example, on average Canadians with tertiary-type A and advanced research programme qualifications earned 61% more than those with only a high school diploma (OECD, 2005b). In contrast, those in the United States with the equivalent level of qualifications earned 91% more than those with only the diploma. These data do not distinguish between higher levels such as masters and PhDs and lower levels within the broad category.

25. Among established scientists listed in "American Men and Women of Science", the probability that Canadian scientists will be working in the United States has steadily increased since 1967 when the probability reached its lowest point (Easton, 2005).

26. Although the funds are generally run by a management or marketing company, a labour union must agree to act as the fund's sponsor. The union is required to appoint the majority of fund board members and thereby exercise control. But it usually has no economic stake in maximising the fund's returns, instead receiving a fixed fee or a small percentage of the net asset value of the fund.

27. Individuals investing up to CAD 5 000 per year can obtain a 15% federal tax credit and a further 15 to 20% provincial tax credit.

28. This group does not include proposals that were recommended to go forward but where modest returns were likely. 80% of these were carried through to commercialisation but only 38% of them generated a positive IRR and the median IRR was –13%.

29. If the critical constraint is capable people, then increasing financial incentives through tax breaks such as the proposed innovation and productivity tax credit being actively promoted by the National Angel Organization will do little to increase the supply of angels. Indeed, it appears to be largely a rent-seeking exercise.

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Chapter 4

Adapting fiscal policy and financial arrangements in the federation

This chapter examines the sustainability of financial arrangements within the Canadian federation. Fiscal performance is currently amongst the best in the OECD countries, but some refinements to the fiscal framework both at the federal and provincial levels may be helpful to prepare the economy to cope better with the long-term challenges of rising spending on health and long-term care. In addition, long-term projections at the general government level will help to verify whether current policies are consistent with Canada's future needs. The federation has thus far achieved its goal of ensuring provinces have sufficient revenues to deliver similar public services at comparable levels of taxation. However, existing federal-provincial arrangements may not be sustainable over the medium run. Streamlining the system of transfers, as well as strengthening the accountability of the various levels of governments, would be beneficial. Moreover, the present equalisation system needs to be adapted to structural changes underway and the growing importance of the energy sector.

Canada has undertaken major fiscal consolidation since the mid-1990s and is now, relative to other OECD countries, well positioned to cope with the long-term challenges of an ageing population. The country benefits from an effective and credible macroeconomic framework and appears to be laudably resilient to shocks. Past reforms have put public pension schemes on a sustainable path. Nonetheless, if current trends continue, a number of pressures will emerge and could jeopardise the sustainability of financial arrangements within the federation.

This chapter first considers refinements to the fiscal framework that would be useful. It then turns to a description of current federal-provincial arrangements, which have become very complex over the years and need to be adapted to the future requirements of the federation. A last section concludes with policy recommendations.

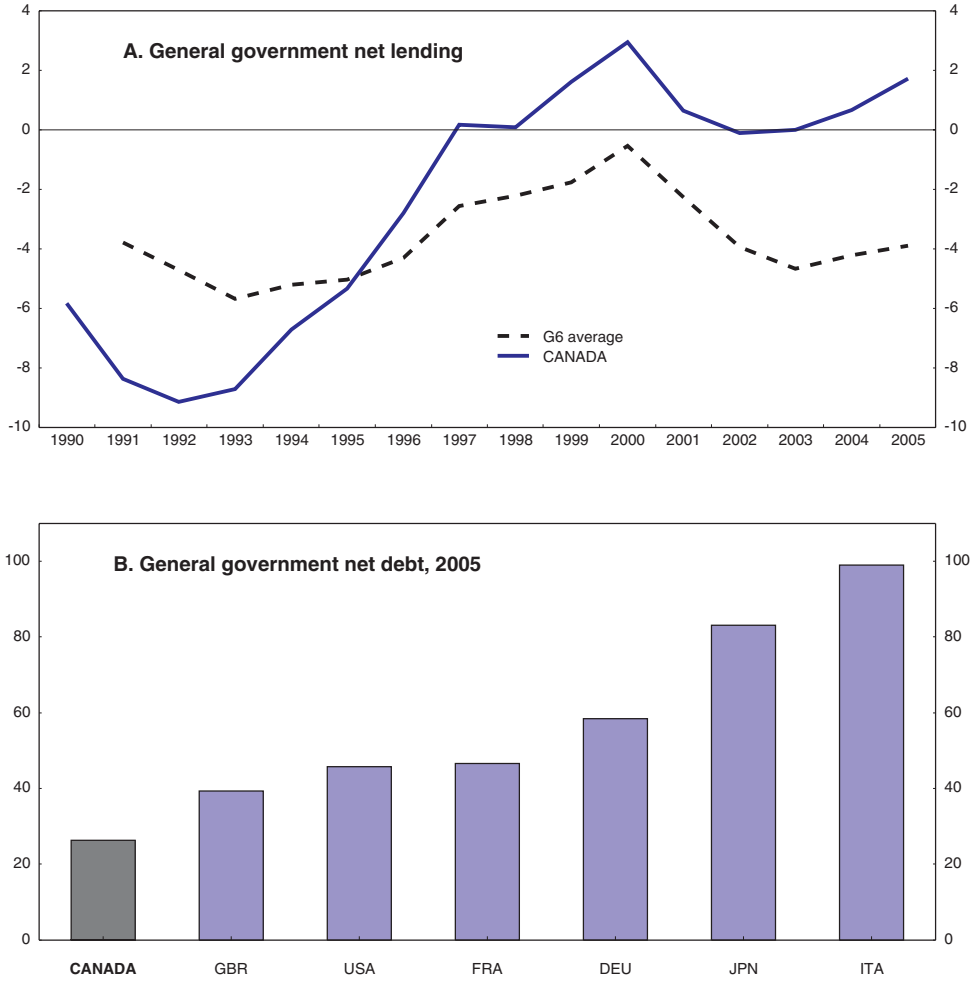
Fiscal framework and long-term projections

Canada's fiscal achievement has been enviable by OECD standards. The general government budget has been in balance or surplus since 1997, and net debt as a percentage of GDP is currently the lowest amongst the G7 countries (Figure 4.1).

Recent performance reflects not only an overall prudent framework but also windfalls coming from the rise in oil and gas prices (Table 4.1). The federal and provincial governments collect revenues from the resource sector through corporate taxes. In addition, royalties are also raised by provinces which own natural resources.[1] Energy-related royalties now account for about one-third of the total revenue collected in Alberta, with the bulk of it from royalties on oil and natural gas.[2] Over the long term, however, these revenues remain uncertain and will depend strongly both on future oil price levels (Table 4.2) and on the evolution of royalty arrangements. For example, if oil prices were to plunge to half their current levels, government revenues would fall by over CAD 23 billion (1.5% of GDP).

In this context, there is a need to make a prudent and forward-looking use of these energy revenues. This is especially important as population ageing will exacerbate fiscal pressures (see Chapter 1). It would also be desirable on intergenerational equity grounds, as oil and gas revenues are non-renewable. The government of Alberta set up the Heritage Savings Trust Fund in 1976 to save a portion of the proceeds from its non-renewable resources. But payments to the Fund have been made on an irregular basis since 1987, the latest being in February 2006 when the government deposited CAD 1 billion into the Fund. By contrast, many oil-producing states or countries have set up saving funds with explicit accumulation and withdrawal rules. International examples include the Alaska Permanent Fund and the Norwegian Government Pension Fund (previously the State Petroleum Fund).[3] The Albertan Fund also had accumulation rules before 1987.[4] Reintroducing explicit accumulation and withdrawal rules would have a number of advantages. It would anchor expectations, could counteract real exchange rate volatility and enhance transparency (Davis *et al.*, 2003). Such rules could also have some stabilisation objective, for

Figure 4.1. **Government budget balances and net debt in G7 countries**
Per cent of GDP



Source: Statistics Canada; OECD, Analytical Database.

instance when withdrawals are allowed to finance the budget during recessions or catastrophic events. A similar approach would also be useful to deal with the windfall gains of other energy-rich provinces, even though the magnitude of their energy revenues will be much lower than in Alberta.

Some other refinements to the various governments' fiscal frameworks would be helpful to ensure current policies at all levels of government remain consistent with Canada's long-term needs. At the federal level, the fiscal framework appears sound. In the 2006 federal Budget, the government advanced by one year to 2013-14 the objective of lowering the net debt-to-GDP ratio to 25% and plans to devote CAD 3 billion in 2006-07 and 2007-08 toward paying down the debt. Moreover, fiscal forecasting procedures were thoroughly reviewed last year (O'Neill, 2005).

With forthcoming population ageing and rising health spending, it is useful to have a clear and predictable rule to allocate revenue windfalls. This is particularly important in the case of Canada as unexpected surpluses have been large in the recent past and have

Table 4.1. **Selected tax revenues, federal government and Alberta**

	2004-05 level CAD million	2000-04 average annual growth	2005-06[1] annual growth
Federal government			
Personal income tax	98 521	2.0	4.5
Corporate income tax	29 956	7.2	15.3
Other income tax	3 560	4.7	5.7
Excise tax and duty	42 857	5.7	30.5
Total tax revenues	174 894	3.6	7.2
Alberta			
Personal income tax	4 649	–1.4	–1.5
Corporate income tax	2 364	11.5	9.8
Resource revenues	9 744	27.2	47.4
Federal transfers	3 219	7.0	–0.4
Other revenues	9 352	6.4	3.8
Total revenues	29 328	7.6	18.0

1. Estimates.
Source: Fiscal Reference Tables, 2006 Federal and Alberta Budgets.

Table 4.2. **Oil price and oil- and gas-related government revenues**

	2005	2006	2007	2008
Oil price assumptions (USD per barrel)[1]	56.6	70.0	70.0	70.0
Payments to governments (CAD billion)	26.7	35.4	35.0	34.7
of which:				
Federal income tax	5.1	7.8	7.2	6.6
Provincial income tax	3.2	4.6	4.6	4.3
Crown royalties[2]	15.4	19.9	20.0	20.5
Land sales	2.9	3.1	3.2	3.3
Oil price assumptions (USD per barrel)[1]	56.6	60.0	55.0	52.0
Payments to governments (CAD billion)	26.7	26.2	23.3	21.7
of which:				
Federal income tax	5.1	4.6	3.2	2.4
Provincial income tax	3.2	3.0	2.6	2.2
Crown royalties[2]	15.4	16.1	15.0	14.6
Land sales	2.9	2.6	2.5	2.5
Oil price assumptions (USD per barrel)[1]	56.6	45.0	40.0	35.0
Payments to governments (CAD billion)	26.7	17.1	14.3	12.0
of which:				
Federal income tax	5.1	1.9	0.8	0.3
Provincial income tax	3.2	1.1	0.8	0.3
Crown royalties[2]	15.4	11.8	10.6	9.5
Land sales	2.9	2.2	2.0	1.8

1. The benchmark used is the West Texas Intermediate. In all three simulations, the price of natural gas is assumed to adjust to oil price development.
2. Crown royalties are mostly provincial.
Source: ARC Financial Corporation (2006).

generated a number of requests for new spending, which would not be appropriate at this stage of the business cycle. In this context, the 2006 federal Budget has proposed that a portion of any unexpected surplus on top of the CAD 3 billion will be allocated to the Canada Pension Plan/Quebec Pension Plan (CPP/QPP). This proposal is useful and can be justified on the ground of intergenerational equity. Indeed, the adjustments made to the

funds in the late 1990s have put the schemes on a sustainable footing (Office of the Chief Actuary, 2004), but have also resulted in a situation where current young workers (those born since 1969) pay higher contribution rates than preceding generations have paid in the past for the same benefits. Over the longer term this pre-funding could lead to higher benefits or lower contribution rates for future participants and would help correct the current intergenerational inequity. The major risk is however that these adjustments take place in the short term and endanger long term budgetary sustainability. It will thus be important to design the allocation rule so as to minimise such risk.

At the provincial level, budget procedures have improved over the years and over the last few years Quebec, Ontario, Prince Edward Island, the Northwest Territories and Nuvanut have been through extensive programme reviews. Still, there is no systematic review of baseline expenditures in most provincial budgets. By contrast, baseline federal expenditures were pruned through the 2005 Expenditure Review for Sound Management.[5] A similar periodic review by provinces could save resources by seeking out any inefficiencies and reprioritising and shifting expenditure where necessary.

Despite the integration of some medium-term elements in the fiscal framework through the federal net debt objective, detailed budgets are still presented for a very limited time horizon: two years for the federal Budget, one or two years for about half of the provinces. A complete multi-year framework (up to four years), fully incorporated in the Budget, would be useful to show the medium-term implications of current policies. This would increase transparency and facilitate a better allocation of resources. One drawback of multi-year budgeting framework is related to the uncertainties surrounding medium-term projections, which may weaken fiscal discipline. However, this could be partially addressed by presenting simulation exercises around major risks. Moving to a multi-year framework would be a good complement to the Federal Accountability Act, tabled in Parliament in April 2006, which establishes the new fiscal position of Parliamentary Budget Officer to provide objective analysis on the state of the nation's finances and trends in the national economy, to conduct economic and fiscal research, and to estimate the financial cost of budgetary proposals.

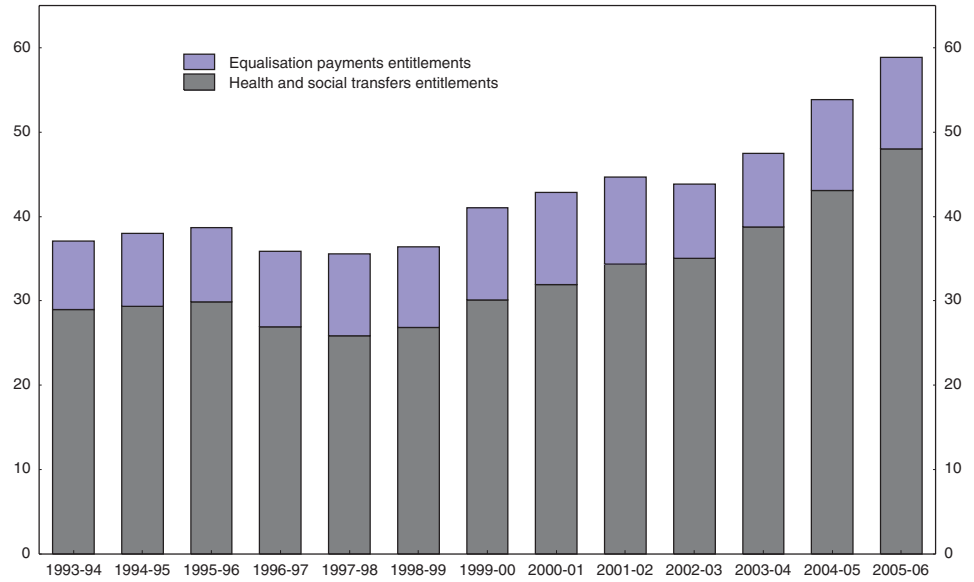
An assessment of the long-term situation (10 to 40 years ahead) is not available at the moment at the general government level. In particular, it is not clear whether the current federal and provincial fiscal rules are sufficient to cope with future pressures related to ageing. To some extent, this stems from the wide variety of fiscal rules across provinces as they enjoy almost complete freedom to determine their fiscal policy. Another reason is the lack of long-term analysis, with only the province of Ontario having begun to publish long-term projections (Ontario Ministry of Finance, 2005). By contrast, a number of countries have legislative requirements for producing long-term projections, including Australia, New Zealand and the United Kingdom. This approach provides useful information on pressures the economy is going to face in the long run, assuming current trends continue, and gives an indication of the magnitude of policy measures that may be needed, even though it is also important to set out clearly the assumptions and uncertainties surrounding long-term projections. In the Canadian context, long-term projections would need to cover both provincial and federal accounts to produce a consistent outlook and could gain in credibility if undertaken by an independent body. In the United States, for instance, this task is assigned to the Congressional Budget Office, and in the Canadian case, it should be handed over to an independent and credible agency.

Federal-provincial financial arrangements

The current financial arrangements are coming under strain

Canada is one of the most decentralised countries in the OECD.[6] The federal government delivers a number of per capita transfers, the most important being the Canada Health Transfer (CHT) to support health and the Canada Social Transfer (CST) to fund social programmes and education. These transfers are financed through federal taxes. In addition, the federal government also transfers directly money to provinces and territories via the equalisation scheme, but these payments represent less than 20% of the total amount of transfers to provinces. Overall, transfers and equalisation payments to provinces and territories have trended up since 1997-98, with a marked increase in the last two fiscal years (Figure 4.2).

Figure 4.2. **Transfers to provinces**
Billion Canadian dollars, fiscal years starting on 1 March



Source: Finance Canada (2006), *Restoring fiscal balance in Canada*, Ottawa.

Since income taxes are progressive, revenues are raised disproportionately from the "have" provinces, in particular Ontario and Alberta. At the same time, programme spending has been higher in the "have-not" provinces than their shares of population, also because of demographic differences. This differs from other federations such as the United States where regional income does not appear to drive federal spending (Box 4.1).

Higher energy costs, a stronger Canadian dollar and intense competition from emerging economies have posed challenges for the provincial economies. After a period of decline, dispersion among provinces, measured in terms of GDP per capita, has been broadly stable since the beginning of the decade but has been rising since 2003. This rise can also be observed, though to a much lower extent and only in the last two years, when looking at other indicators such as (disposable) income or real GDP per capita (Figure 4.4). Disparities within Canada are likely to have widened recently as the oil price and exchange

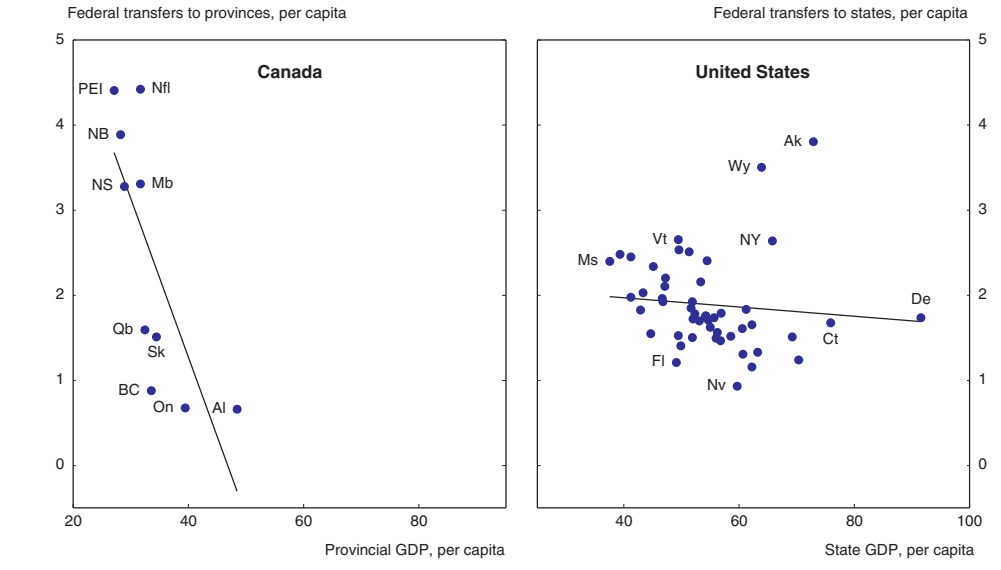
Box 4.1. **A comparison between Canada and the US income transfer systems**

Both the Canada and the US constitutions define the allocation of responsibilities between federal and provincial or state governments for major expenditures. Canadian provinces have full taxation autonomy and US states are largely free in their choice of tax bases and rates. There are only few limitations on taxation of exports and imports (which is a federal activity) and on interstate commerce in the United States.

The inter-state or inter-provincial transfer of funds occurs through the same mechanisms in both countries, but, unlike Canada, the United States has no formal equalisation transfer system. The federal taxation system is progressive in both countries, and richer states and provinces contribute more per capita to federal revenues. By contrast, the federal spending pattern differs markedly between the two neighbours. Indeed, federal spending is not income-determined in the United States, while there is a negative relationship between Canadian federal spending in a province and its GDP per capita (Figure 4.3).

Figure 4.3. **Federal expenditures in Canada and the United States**

Per capita, thousand Canadian dollars, 2002



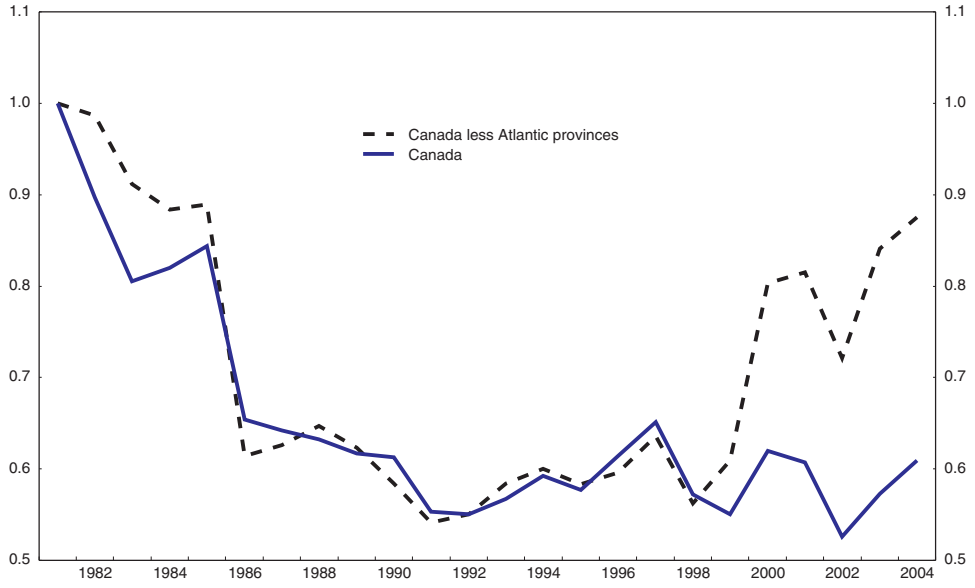
Source: Statistics Canada, Finance Canada, *US* Census Bureau.

Because of their design and objectives, the two systems have led to marked difference in terms of income convergence among provinces or states:

- There has been more fluidity over the years in the status of US states as net beneficiaries or contributors than of Canadian provinces. By contrast, the reliance of some provinces on federal funds has been strong and only marginally declining.
- Regional differences in personal disposable income (which captures the after-tax income that flows to individuals) have been narrowing more in Canada than in the United States. By contrast, the disparity in GDP per capita (which measures the economic output of the region) is greater in Canada than in the United States.
- Labour productivity performance has been more similar in Canada's provinces than in the US states, but dispersion is growing in Canada while it is narrowing in the United States.

Source: Institute for Competitiveness and Prosperity (2005), OECD (2005b), Poschmann and Tapp (2005).

Figure 4.4. **Standard deviation in selected provincial indicators**
Normalised (1990 = 100)



Source: Statistics Canada.

rate shocks have had different impacts on provinces reflecting sectoral specialisation and resource endowments. Oil-producing provinces like Alberta have clearly experienced a boom, while manufacturing-based Ontario and even more so those Atlantic provinces without oil and gas, have been negatively affected. These provinces have nonetheless benefited from positive spillovers from strong economic growth in the West, and overall have experienced robust growth.

Looking forward, disparities between provinces are likely to intensify over time. Indeed, most projections foresee sustained high oil prices which render exploitation of oil sands profitable and are likely to enlarge the gap between Alberta and the other provinces. Energy rents may accentuate net taxation differentials and encourage inter-provincial migration towards resource-based provinces, where pressures already exist on housing markets. Moreover, ageing populations will probably affect provinces differently. In particular, the Atlantic provinces are forecast to experience the largest increase in the share of elderly people in total population (Table 4.3).

The ageing population will also have an influence on work, income and tax patterns and will affect the provincial distribution of benefit programme payouts such as the Guaranteed Income Supplement and Old Age Security benefits. Social policies are also likely to weigh more heavily on some provinces than others, for instance in provinces where fast-growing and poor Aboriginal populations are concentrated (see Chapter 5).

As the ageing process develops more quickly in the Atlantic provinces, their per capita health expenditures, which are already higher than the Canadian average, will soar, putting further pressures on public spending (Jackson and McDermott, 2004). A number of measures have been put forward to improve the functioning of the heath system and reduce waiting times and the new federal government has proposed a "Wait times guarantee". At this point in time, it is unclear how the federal government could actually

Table 4.3. **Ageing by province or territory**

	Percentage of elderly people		Total health expenditure (% of provincial/ territorial GDP)	Public health expenditure (as a % of total health expenditure)	Population share
	2005	2031[1]	2003	2003	2005
Provinces					
Newfoundland and Labrador	13.1	30.3	11.2	77.6	1.6
Prince Edward Island	14.1	26.6	14.0	70.5	0.4
Nova Scotia	14.2	28.6	12.5	69.1	2.9
New Brunswick	13.9	29.1	12.4	70.3	2.3
Quebec	13.8	25.4	10.2	71.0	23.5
Ontario	12.8	21.8	10.1	67.1	38.9
Manitoba	13.5	21.5	13.0	74.0	3.6
Saskatchewan	14.8	24.8	10.6	74.9	3.1
Alberta	10.5	20.8	7.4	72.0	10.1
British Columbia	13.8	25.4	11.2	72.6	13.2
Territories					
Yukon	6.9	23.7	11.7	79.8	0.1
Northwest Territories	4.7	16.0	7.5	89.5	0.1
Nunavut	2.6	4.4	30.6	95.6	0.1

1. Statistics Canada projection scenario No. 2 using medium growth assumptions and recent migration trends.
Source: Statistics Canada; National Health expenditure database.

put such a guarantee in place, given that health care delivery is a provincial responsibility. However, three provinces (Quebec, Alberta and British Columbia) have been looking at expanding the role of private payment and/or private delivery as a way to shorten waiting lists and/or raise sectoral productivity (Box 4.2). One review of private health insurance in OECD countries found that experience was mixed about the relative advantages and drawbacks (OECD, 2004) and, at this stage, it is unclear whether the changes currently being considered in Canada will be able to generate significant gains. By contrast, important efficiency gains could be made by modifying current funding mechanisms, both for physicians and hospitals, or strengthening the role of Regional Health Authorities (see previous *Survey*), but this would require deeper reforms than those implemented so far.[7]

Transparency and accountability need to be enhanced

Over the years, the transparency of the transfer system from the federal government to provinces has been altered due to frequent programme adjustments. The current method of funding now includes intergovernmental transfers, transfer supplements, trust funds, special funding arrangements and federal arm's-length foundations. Recent bilateral deals between Ottawa and some provinces have added further opacity to the system, and this, together with the succession of positive federal surplus surprises has opened the door to a range of provincial requests for federal assistance. At this stage, there is a clear need to streamline existing arrangements to make them more effective and efficient, as well as to reduce the incentives for provinces to try to "game" the system by adopting strategies designed to maximise their transfer receipts.

Moreover, the use of federal spending power in areas of exclusive provincial spending jurisdiction (Box 4.3), including health care, childcare and urban infrastructure has blurred accountability. Indeed, this has resulted in a situation where provinces have to deliver

Box 4.2. **Private health insurance and care**

Medically necessary hospital and physician services are covered under provincial and territorial publicly funded health insurance plans in Canada. Private health insurance is currently not available for these services and nine of the thirteen provinces and territories explicitly prohibit private health insurance for services covered by public plans. Private health insurance plays a supplementary role and covers goods and services that fall outside of this category, for example prescription drugs provided outside of hospitals and cosmetic surgery, although some provinces have public drug coverage programmes for the most vulnerable groups. Other private benefits include dental and optical services.

Private health insurance as a percentage of total health expenditure has been rising steadily from 8.1% in 1990 to 13% in 2004. Amongst the OECD countries, this percentage is significantly higher only in the United States and the Netherlands.

In 2005, the Supreme Court of Canada handed down its decision in Chaoulli *versus* AG Quebec, a case that challenged the constitutionality of the legislation in Quebec that prohibited private health insurance for medically necessary hospital and physician services (Chaoulli case). The Court struck down the legislation, finding that it violated the Quebec Charter of Human Rights and Freedoms. However, the Court was evenly divided as to whether or not the prohibitions violated the Canadian Charter. It found that where the public policy choice is for a single-tier, publicly funded health care system which is backed by prohibitions on private health insurance, then governments have an obligation to ensure that medically necessary care is provided within the public system in a reasonable time. In response to the Supreme Court of Canada ruling, the Quebec government has proposed to implement a care guarantee for three elective services (*i.e.* hip and knee replacements and cataract surgeries) within the publicly funded health care system. The guarantee would provide that a patient that had not received surgery after an established period of time would be offered alternative ways of accessing care, such as going to a privately operated clinic or to a facility in another Quebec region, with the costs covered by the Quebec health insurance plan. Quebec has also proposed to permit a very limited degree of private health insurance for medically necessary hospital and physician services, restricted to those same three services for which there would be a care guarantee. This measure would be accompanied by several safeguards to ensure that this small private sector does not threaten the viability of the public system. These measures are expected to reduce the temptation for patients to pay privately to jump the queue.

Although the Chaoulli Court ruling applies only to Quebec, the decision has nonetheless stirred up discussions in other provinces on the role of private health insurance for medically necessary hospital and physician services. One province, Alberta, announced plans in February 2006 to permit private health insurance, but given concerns expressed by the public and others, including the Government of Canada, it has since decided not to proceed.

services for which they do not raise the required funding themselves, while the federal government collects taxes to provide services it is not responsible for delivering and for which it cannot ensure delivery (Poschmann, 2005). In theory, federal intervention might be justified by horizontal externalities. But experience from other countries shows that high decentralisation of spending can improve the responsiveness of public expenditures to local preferences and can be conducive to innovation in programme design (OECD, 2005b). Increasing federal transfers may also have created poor incentives for fiscal discipline on the part of provincial governments (McKenzie, 2005). Proposals put forward in the 2006

Box 4.3. **Allocation of responsibilities among different levels of governments**

There are three levels of government in Canada: the federal government, the provinces and territories and the municipalities. The levels of government were established, and their respective powers defined in Canada's Constitution Act (1867). However, written text provides only a basic understanding as to the respective powers of level of government, and a fuller understanding is gained through a study of the case law from the *Supreme Court of Canada*.

A clear share of responsibility for most sectors…

In general, the *federal government* takes major responsibility for fields that affect all Canadians. This includes national defence, foreign policy and citizenship. It is also responsible for providing employment insurance and assistance to Aboriginals on-reserve. *Provinces and territories* are responsible for primary and secondary education, health care and highways, as well as delivering assistance to Aboriginals off-reserve. Provincial legislation holds *municipal governments* responsible for spending on protection, transportation, environment (waste and sewage collection and disposal, water treatment and supply), and recreation and culture within municipal boundaries. School Boards, which consist of locally elected representatives, are responsible for education spending (excluding at the post-secondary level, which is a provincial responsibility).

… but some sectors lie under both federal and provincial jurisdiction

Old-age pensions, *agriculture* and *immigration* are shared jurisdictions between the federal and provincial governments. Provinces have jurisdiction over energy matters within their borders, while the federal government is responsible for international issues and the broader national interest. Both levels of government are also involved in environmental matters. For instance, the responsibility for water management is shared by the federal, provincial and municipal governments, and in some instances, by the territories and by Aboriginal governments under self-government agreements.

federal Budget to discuss ideas on how to clarify federal and provincial roles and responsibility are therefore welcome, and effective action should be taken. In particular, the federal government should avoid using its spending power in areas of provincial responsibilities such as education or heath care.

Similar accountability issues arise at the local level between cities and higher levels of government. Municipalities operate under provincial legislation and are responsible for delivering a number of local services. Until recently, there had been a gap between cities' spending requirements and revenues, which also hindered their economic development, thereby slowing down growth in the provinces themselves (Paquet, 2002; Mintz and Roberts, 2006). For the past year, the federal government has transferred funds equivalent to a share of federal gasoline tax revenues to municipal governments. But this move has further clouded accountability, and the federal government should resist bypassing the provinces and intervening in municipal issues. By contrast, some provinces already share a portion of their tax revenues with municipalities, thereby granting them greater financial autonomy.[8] It will be important to provide municipalities with greater flexibility in financing their expenditure responsibilities to address their needs for funds and increase accountability.

A first step toward increasing transparency and accountability in the federal provincial financial arrangements has been made through the 10-year Health Care Accord signed in September 2004, which provides CAD 41 billion in new federal funding and establishes a

medium-term federal health funding formula. As stated in the previous *Survey*, the value of this agreement will be seriously undermined if provinces continued their past practice of seeking to renegotiate for further funds on an *ad hoc* basis. These funding arrangements should remain impervious to any renegotiation over their lifetime and provincial authorities should rather focus their full attention on achieving efficiency gains so as to minimise the upward pressure on overall health spending levels. On the federal side, the government needs to refrain from committing to improvement on health care or childcare, as the delivery of such services remains under provincial responsibility.

Going forward, a second step would be to reduce fiscal churning. Indeed, a large share of the federal taxes raised in each province is simply returned to the provincial government via per capita transfers. This could be done by scaling back federal taxes and trimming non-equalisation transfers back to levels that are sufficient to address inter-provincial spillovers and/or set up minimum national standards. This would permit provinces to raise their own taxes without increasing the overall tax burden and would improve their accountability for service delivery. If such an option were adopted, early warning should nonetheless be given so that the provinces have time to decide how best they should adjust to the move.[9] The overhaul of the current system could also be a good occasion to undertake a comprehensive tax reform package at all levels of government and, in particular, to put more reliance on less distortionary taxes such as consumption taxes (see Chapter 2). The announcement by the federal government that it will lower the GST by 2 percentage points over the next five years could serve as a first step toward granting provinces more tax room.

A number of caveats are nonetheless attached to this solution (Table 4.4). Such a move is likely to have different impacts on provinces, depending on their current taxation systems (Poschmann and Tapp, 2005). In particular, it will be necessary to assess the implications for the four Atlantic provinces, which are small and rely heavily on federal transfers. An adjustment of equalisation payments would be needed to address these issues.

Table 4.4. **Benefits and costs of scaling back federal taxes**

Benefits	Costs
Reduced fiscal churning	Potentially greater inter-provincial inequality
Increased accountability and more provincial control over their own financial affairs	Lost economies of scale
Greater opportunity for innovation	Increased compliance costs for firms (*e.g.* when there are differences across provinces in the capital tax base)
Increased provincial predictability of the funds (assuming no large cyclical movements)	More distortionary tax rate (because tax bases are somewhat more mobile between provinces than between nations)
Greater accounting for different local preferences	
Increased tax competition between provinces	

The equalisation system should adapt to future needs

The present inter-governmental income transfer system aims to attenuate current regional disparities by lifting provincial government incomes in poor provinces via equalisation payments (Box 4.4). This feature is common to programmes that exist in other OECD federations. However, contrary to most other OECD federations, it is an asymmetric revenue-sharing scheme which raises revenues of provinces below the standard level but does not tax jurisdictions with above-average tax bases (Figure 4.5).

Box 4.4. **Equalisation payment systems**

The Canadian system

Created in 1957 and set out in Canada's constitution in 1982, the equalisation payment system is designed to "ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonable comparable levels of taxation". The idea is to promote common Canadian standards of public services while treating all taxpayers fairly. A special programme exists for Territories, which takes into account the high costs of providing services in the North. Equalisation payments are unconditional – receiving provinces are free to spend the funds on public services according to their own priorities. The equalisation programme is financed by federal taxes.

The federal government determines the total amount of the transfer, which is then shared between eligible provinces according to a formula. Equalisation payments are currently calculated based on an average of the revenue-raising ability of five provinces. The formula looks at 33 different revenue-raising factors, including the taxes the provinces collect, and oil and gas revenues. Province j's equalisation entitlement for a factor i is computed as $E_{ij} = \bar{t}_i(B_{si} - B_{ij})POP_j$ where $\bar{t}_i$ is the national weighted average tax rate, B_{si} is the standard per capita tax base (computed as a weighted average of the five provinces of Ontario, Quebec, Manitoba, Saskatchewan and British Columbia), B_{ij} is the province's per capita tax base and POP_j the population of province j.

The equalisation programme transferred almost CAD 10 billion a year to receiving provinces on average over the period 1999-2000 to 2003-04. The overall importance of equalisation payments as a proportion of gross provincial revenues differs greatly across the country, ranging from under 10% in Quebec to over 20% in the Atlantic provinces in 2004-05.

A new framework for equalisation was announced in October 2004. It established the following:

- The funding level was set at CAD 10.9 billion in 2005-06. It will grow at 3.5% per year from that base for the next 10 years. The intent of these changes is to bring stability and predictability to the overall level of funding for these programmes.
- An independent review of the programme by a panel of experts was established to advise on the best way to allocate payments among provinces. The expert panel recommended in May 2006 to move to a 10-province standard and to include 50% of the renewable and non-renewable resource revenues in the formula.

Recently, the new federal government has announced its intention to reform the equalisation system.

Other equalisation systems in selected OECD countries

Australia: The Commonwealth has control over the broadest tax bases, including personal and corporate income, customs and excises. Sub-national governments have full autonomy to set their own tax, except for the GST. The Commonwealth Grants Commission distributes the GST revenues and Health Care grants to the states. The objective is to fully equalise the revenue-raising capacity and expenditure needs of its states, so as to ensure that each state has the capacity to provide a standard level of services to its citizens. Equalisation is supposed to be policy neutral (*i.e.* a state cannot directly influence its share in GST revenue).

Germany: Taxing powers are largely centralised, and the degree of sharing of tax revenue between the different layers of government has increased over recent decades. The equalisation programme seeks to provide fairer revenue levels across states. It consists of three elements. *First*, three-quarters of the Länder's VAT share are re-distributed on an

Box 4.4. **Equalisation payment systems** *(cont.)*

equal per capita basis. The remaining quarter of the states' share is used to fund a supplementary equalisation scheme, directed at poorer states. *Second*, there is an explicit equalisation programme with payments based on the revenue capacity of the Länder, adjusted to take account of some elements of "needs" using population density as a proxy. *Third*, the German Unity Fund aims to raise the fiscal capacity of the eastern Länder to a level comparable to those in the West. As a result, the system has yielded a substantial redistribution of income in favour of the poorer Länder.

Switzerland: Tax sovereignty lies primarily with the Cantons and secondarily in the Confederation. There is no quantitative objective for the equalisation system. The system is mostly based on a fiscal capacity approach, with three sets of policies that include equalisation components. Two flow from the centre to the Cantons: conditional federal grants-in-aid and revenue sharing; one flow is reversed, from the Cantons to the federal government in the form of cantonal contributions to social security.

Sweden: Although Sweden is a unitary State, revenues and expenditures are highly decentralised. The purpose of the equalisation system is to put all municipalities and county councils on an equal financial footing to deliver equivalent levels of services to their residents. The system changed in January 2005 and can be divided into five separate parts. *First*, income equalisation results in an equalisation of tax revenue among municipalities and among county councils. It is mainly a state-financed income equalisation grant. *Second*, cost equalisation evens out structural cost differences due to the fact that the need for local authority services and the cost of producing a particular service vary. *Third*, the parts of the previous cost equalisation system that have to do with regional policy have been transferred to a new structural grant alongside the cost equalisation system. *Fourth*, a special transitional grant is payable during the period 2005-06 to moderate the redistributional effects for the authorities that have experienced revenue decreases. *Fifth*, an adjustment system has been introduced to add stability to the funds and enhance the central government's control over the total costs of the equalisation system.

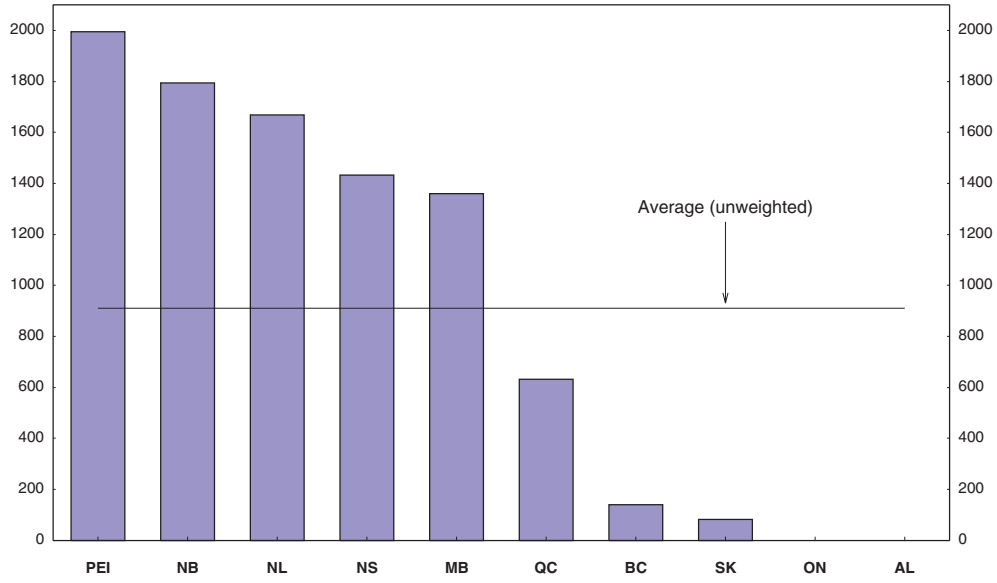
United States: States have extensive tax autonomy. There is no formal equalisation payment system.

Source: Finance Canada (2005), Expert Panel on Equalization and Territorial Formula Financing (2005), Smart (1998), OECD (2006), Boadway and Watts (2004), Dafflon (2004), Ministry of Finance and Swedish Association of Local Authorities and Regions (2005).

The objective of reducing regional inequity through transfers creates trade-offs between efficiency and equity comparable to those existing in personal income tax systems. In particular, the equalisation formula can generate a number of distortions, as receiving provinces may seek to maximise their equalisation payments in a situation of moral hazard. *First*, receiving provinces that are large enough to influence the weighted average tax rate have an incentive to set current and future tax rates for tax bases for which they are below the standard higher than they otherwise would to increase their equalisation payments. Tax competition between provinces may mitigate these effects, and the overall outcome is uncertain. *Second*, provinces may tend to rely on taxes whose bases are narrower than the standard base used in the equalisation formula (or taxes that are not included in the formula).

Third, provinces are encouraged to spend excessively on non-base enhancing expenditures and too little on base-enhancing activities. As a result, the system may have lowered incentives from low-income provinces to adopt policies that encourage economic

Figure 4.5. **Equalisation entitlements by province**
CAD per capita, 2005-06



Source: Finance Canada.

growth.[10] Indeed, the benefits of undertaking growth-enhancing policies are reduced, as some of the resulting pay-offs will be deducted from the receiving province's equalisation payments. The average claw-back is estimated to be 90% for revenue from new economic activity (Crowley, 2005). By contrast, revenues from increasing taxes or from other federal transfers are not clawed back. Similarly, if a province uses debt to finance current spending, the borrowing has no impact on current equalisation receipts (Mintz and Poschmann, 2004). More generally, it will be important to minimise distortions induced by the equalisation system, while remaining consistent with the primary redistribution objective.

With the expanding role of the energy sector in the Canadian economy, the treatment of non-renewable resource revenues within the equalisation system will be of major importance. Having such revenues included in the equalisation formula has lowered the net benefits of developing the resource sector in some receiving provinces. A partial solution has been found through the so-called "generic solution", whereby 30% of revenues subject to equalisation can be scaled back for provinces that have 70% or more of the total tax base from a revenue source. In addition, bilateral accords with Newfoundland and Labrador and Nova Scotia on their offshore revenues as well as the Atlantic Investment Tax Credit have partially offset the revenue losses for these provinces.[11] But, by being limited to these two provinces, they have also resulted in inequitable treatment among provinces.[12]

It will be important to clarify the treatment of non-renewable resource revenues in the equalisation formula to remove uncertainties and potential obstacles to investment in the sector. The new federal government has announced its willingness to eliminate all oil and gas revenue from the equalisation formula. This change would probably foster further investment in the sector but may end up in a situation where a resource-rich province receives an equalisation payment even though it has far greater fiscal capacity to fund programmes than other provinces which lack natural resource revenues.

Overall, there is a need to re-think the functioning of the current equalisation system in light of the structural changes underway and the growing importance of the energy sector in the Canadian economy. In particular, an important question that will need to be addressed is to what extent and how energy rents, which are mostly concentrated in Alberta, should be redistributed across provinces. For the time being, most of these revenues are not shared through the programme, as Alberta is not included in the five-province standard. But the objective of reducing regional disparity will be more and more difficult to achieve under the current formula, if energy price stay persistently high. Against this background, an independent expert panel has recommended to move to a 10-province standard and to include 50% of the renewable and non-renewable resource in the formula and a final decision should be taken by the end of the year (Expert Panel on Equalisation and Territorial Formula Financing, 2006). Obviously, the equalisation formula would need to be adjusted, depending on the social choice made in this matter.

Conclusions and policy recommendations

This chapter has reviewed areas where changes could be made to refine federal and provincial fiscal frameworks and ensure the long-term sustainability of fiscal arrangements with the Canadian federation. The resulting policy recommendations are summarised in Box 4.5.

Box 4.5. **Policy recommendations for fiscal policy and federalism**

Fiscal policy frameworks and procedures

- Develop a fiscal rule to ensure a strategic use of energy windfalls in resource-intensive provinces.
- Improve transparency/efficiency of the federal fiscal framework by adopting a multi-year budgeting framework. Undertake more systematic review of existing expenditures at the provincial level.
- Publish long-term projections (10 to 40 years ahead) for the federation as a whole. These projections could be undertaken by an independent body.

Fiscal federalism

- Streamline current federal-provincial arrangements and improve accountability by limiting federal transfers for health care to the funding arrangements set out in the 10-year Action Plan for Health and in the long term, scaling back federal taxation and reducing transfers to levels required to offset externalities. Pursue efforts for provinces to grant cities more autonomy to finance their spending responsibilities.
- Modify the equalisation formula to produce a transparent outcome that is rules-based and encourages provinces to maximise their own growth opportunities.
- Clarify the treatment of non-renewable resource revenues in the equalisation formula, and ensure an equitable treatment among provinces.

Notes

1. The federal government also collects royalties on frontier or reserve lands.
2. According to Alberta budget projections, it is anticipated that non-renewable resource revenue will total over CAD 14 billion in 2005-06, including CAD 1.184 billion from oil sands royalties.

3. In Alaska, 50% of certain mineral revenues are allocated to the Fund, and in Norway allocations are equal to the total central budget surplus, including oil revenues.
4. Until 1983 30% of resource revenues were allocated to the Fund. This percentage was lowered to 15% from 1984 to 1987 and transfers were discontinued thereafter.
5. CAD 11 billion in saving over the next five years has been identified (of which 89% is to come from improved efficiency).
6. The provincial share of revenue (expenditure) as a per cent of total general government is close to 50% (60%), compared with close to 40% (45%) in the United States and Australia. Transfers between government levels have been netted out.
7. Some steps have been taken in this direction in Ontario. The province has given more powers to 14 Local Health Integration Networks to plan, co-ordinate and fund health care services in their communities.
8. British Columbia remits a share of its fuel tax to the Greater Vancouver Regional District. Edmonton, Calgary and Montreal are also given a share of provincial fuel taxes. Vancouver and Montreal impose hotel occupancy taxes, while Winnipeg and Toronto have the right to do so (Mintz and Roberts, 2006).
9. This solution was already proposed in 2001 by the Séguin Commission in Quebec.
10. By contrast, if a receiving province implements a measure or a regulatory change that is harmful to economic growth, this will have the consequence of raising its equalisation payments.
11. The Canada-Newfoundland Atlantic Accord (1985) and the Canada-Nova Scotia Offshore Petroleum Resources Accord (1986) provided for time-limited, partial compensation for equalisation reductions associated with offshore revenues. The compensation is made through annual offset payments, outside of the equalisation program. The new agreements signed on 14 February 2005 extended the period of protection to 2020 for both provinces (under some conditions) and provided for full compensation for offshore-related reductions in equalisation. The Atlantic Investment Tax Credit aims to promote economic development in the Atlantic provinces and the Gaspé region. Eligible investments include qualifying buildings, and machinery and equipment used or leased by the taxpayer. A business is allowed to deduct 10% of eligible costs from its federal income tax liability. The incentive is available to agriculture, fishing, forestry, manufacturing and resource extraction; firms engaged in resource activities such as mining and offshore oil and gas extraction have been the largest recipients of this tax credit.
12. Saskatchewan does not benefit from a similar bilateral agreement, and a large part of the province's resource revenues is clawed back from its equalisation entitlements from non-resource revenues.

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Chapter 5

Social policies: from social welfare to social development

This chapter reviews recent changes that have been introduced to improve the welfare mix of social policies in Canada and suggests further adjustments to raise their efficiency. Family policies need to be redesigned to lower the disincentives to work they currently embody, particularly for low-income earners. Social programmes need to shift their focus from short-term intervention to high quality skill-upgrading. Social and economic inclusion of the Aboriginal population and recent immigrants could be accelerated by tailored measures, while programmes for disadvantaged children and at-risk families could be further developed. Access to early education and childcare services could be facilitated for young children and especially, low-income families. As the population ages, making it easier for older workers to remain in the labour force will also be beneficial.

Equality of opportunity for all is enshrined in Canada's Charter of Rights. However, despite greater prosperity, some categories of the population continue to face major risks of poverty, social exclusion and limited self-sufficiency, sometimes throughout the course of their lives. As shown in past decades, social policies solely based on income redistribution do not suffice to counter the rise in inequality. An active approach that focuses on improving people's lifetime prospects by investing in their productive potential needs to be emphasised (OECD, 2005a).

This chapter begins by analysing welfare and poverty traps faced by low-wage Canadian workers and how to address them. It then turns to describing specific challenges some minority populations (namely Aboriginals and immigrants) have to cope with. Changes to ease access to early childhood education and care are then discussed and institutional factors explaining low participation rates amongst older workers are examined. The chapter ends with some policy recommendations.

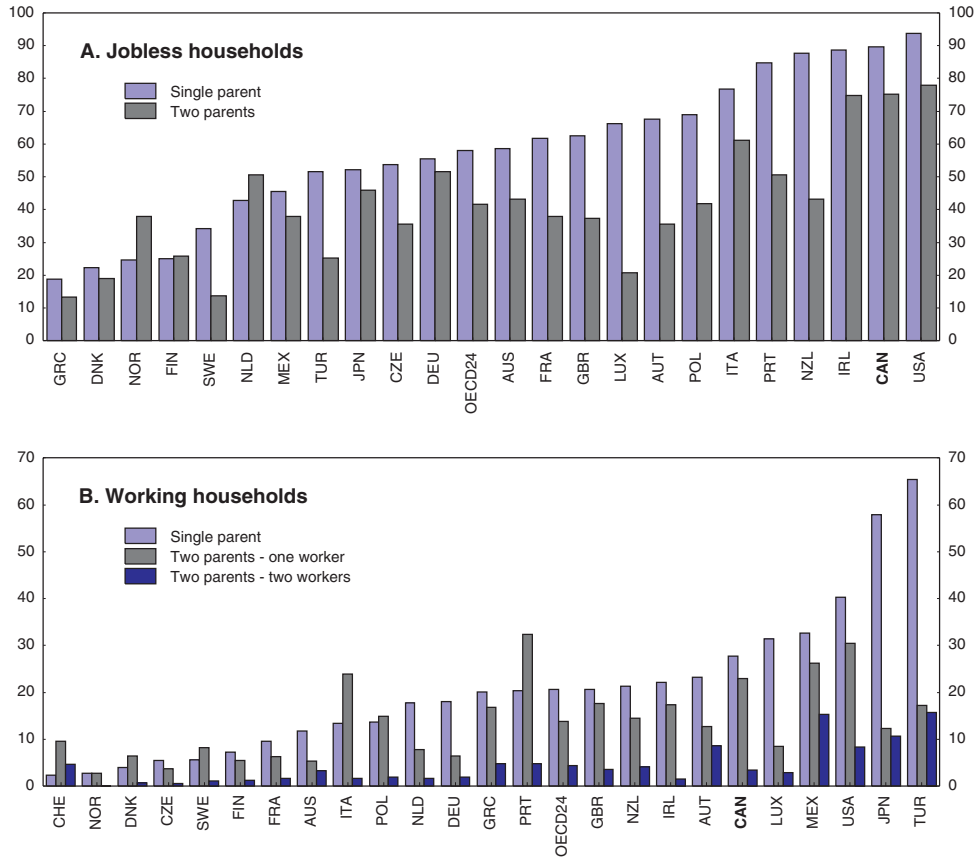
Redesigning family assistance to better promote welfare-to-work transition

Policies on family assistance in Canada have attempted to achieve the following two goals: reducing reliance on social assistance and containing poverty rates, especially for children. However, poverty rates have remained high, well above the OECD average (Figure 5.1), despite some major reforms, in particular the change to the Canada Child Tax Benefit which allowed the implementation of the National Child Benefit (NCB) supplement in 1998.

Welfare traps remain important at low income levels

Reforms to improve the social policy mix for families have not been sufficient to remove major welfare traps for those on social assistance, weakening their incentives to move from welfare to work. As in many other OECD countries, marginal effective tax rates (METRs) were estimated to be particularly high for those on low incomes in 2004, sometimes above 100%, while they were much more moderate for middle-income earners (Figure 5.2).[1] More up-to-date evidence suggests that those in low-income families still face much higher rates in Ontario, despite the changes introduced in August 2005 to strengthen work incentives (Drummond and Manning, 2005). The Employment Tax Credit, announced in the 2006 federal Budget, will offset the tax payable on up to CAD 1 000 of an individual's employment income per year. It is expected to modestly reduce average tax rates and increase marginal incentives to work for low-income workers. The disincentives to work stem from provincial and federal taxes and benefits and their claw-backs that stack on top of one another, in particular income-tested benefits such as the GST tax credit, provincial child tax benefits (where they exist) and the National Child Benefit. Federal and provincial child benefit supplements, which are income-tested in-work benefits, also contribute significantly to high METRs in the case of low-income families.

Figure 5.1. **Relative poverty rates for jobless and working households**[1]
Per cent, 2000[2]



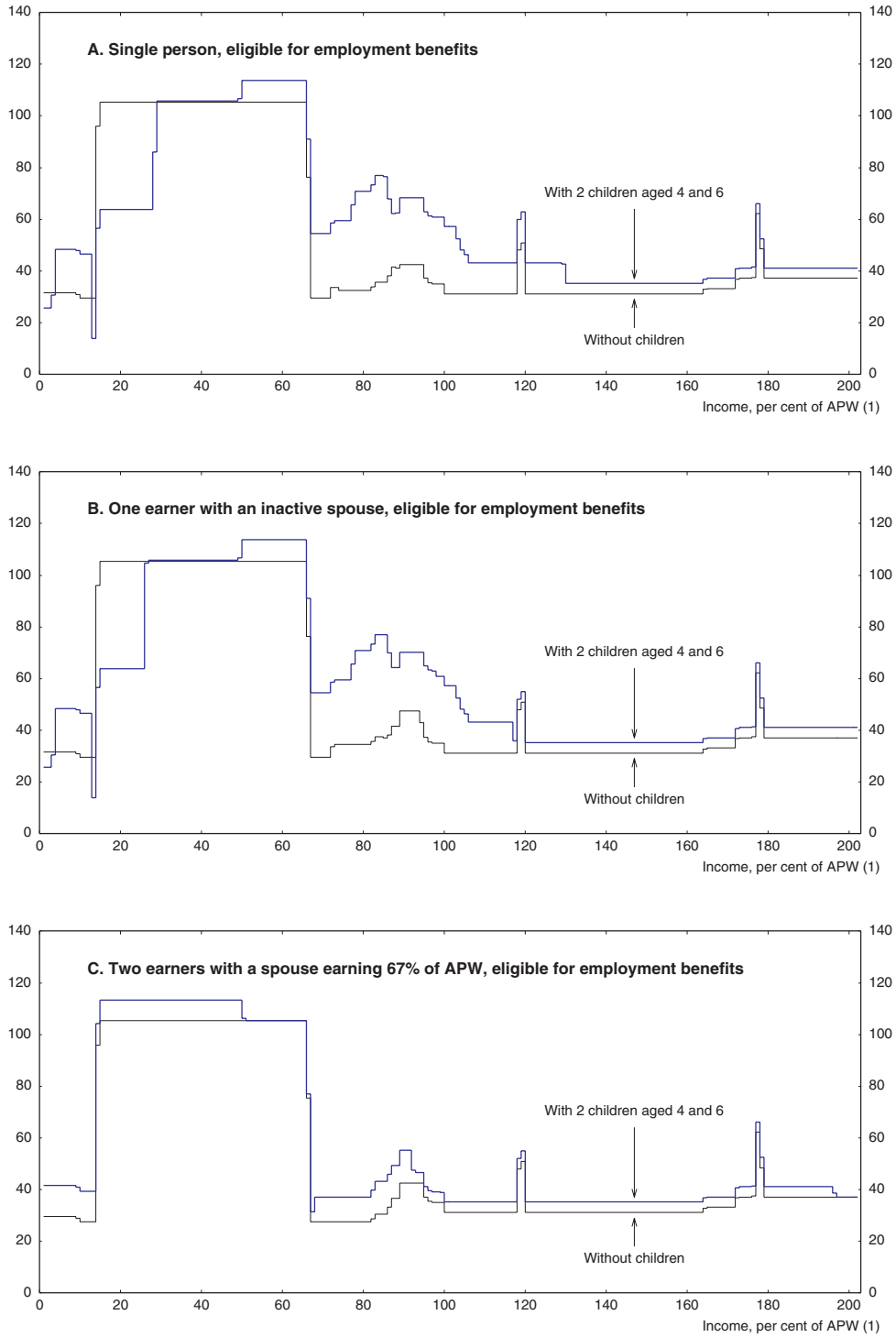
1. Poverty rates are defined as the share of individuals with equivalised disposable income less than 50% of the median for the entire population.
2. 1999 for Australia, Austria, Greece and Luxembourg; 2001 for Germany, New Zealand and Switzerland; 2002 for Mexico and Turkey.

Source: Förster, M. and M. Mira D'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", Social, Employment and Migration Working Papers, Paris.

Reducing welfare traps is not easy because family policies also seek to lower child poverty by boosting the incomes of the poor, while keeping the income security system affordable. A number of options could nonetheless be used. One alternative would be granting universal benefits that are more tightly restricted by the child's age on the rationale that once children are at school, opportunities for earning market income increase. A step has been made in this direction with the introduction of the Universal Child Care Benefit. Another possibility would be switching from general means-tested benefits to more generous childcare subsidies that would increase the scope to earn income. Improvement could also be made through better co-ordination of abatement regimes (including non-cash benefits) across different federal and provincial measures to arrive at programme parameters that minimise the negative effects of these interactions. Some progress has been made through the National Child Benefit initiative which aims to prevent and reduce the depth of child poverty; promote attachment to the labour market and reduce overlap and duplication by harmonising programme objectives and benefits

Figure 5.2. **Marginal effective tax rates on income**

2004



1. APW earnings represent estimated full-time earnings of an average production worker.

Source: OECD (2006), *Benefits and Wages*, Paris.

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and through simplified administration. However, more remains to be done and in this context, it is encouraging that the federal government announced in the 2006 Budget that it will seek to identify, in consultation with provinces and territories, measures to improve incentives to work for low-income earners.

In-kind benefits, provided through affordable housing and drug coverage programmes, also reduce incentives to take up a job. For instance, most low-paid workers (who earn less than CAD 10 per hour) lack employer-sponsored first-dollar coverage for pharmaceuticals, whereas individuals receiving social assistance on welfare are covered. However, all levels of governments are currently developing, assessing and estimating costs of options for catastrophic drug coverage as part of Canada's Pharmaceuticals Strategy. It is anticipated that, if implemented, such a programme would contribute to alleviate some of these disincentives. Extending health benefits for people exiting from social assistance for employment or until employer health benefits are available would also be useful to ease welfare traps.[2]

Improving the quality of active labour market policies would also help to raise basic skills and lower reliance on assistance programmes. A partial assessment based on three jurisdictions (British Columbia, Quebec and Newfoundland and Labrador) finds only modest positive net impacts on participants' employment and earnings of current active measures, depending on the programme, the client type and jurisdiction (Canada Employment Insurance Commission, 2005).[3] This is consistent with most empirical findings (Box 5.1).

Given these disappointing results, there is a clear need for further policy evaluation with a view to keeping programmes that are effective and reforming or phasing out those that are not. This assessment should incorporate all the dynamic effects, as some programmes could see their impact vanishing over time: for instance, the latest analysis suggests that the Self Sufficiency Project, a pilot project which delivers work-conditional financial payments to single parents to encourage them to take up a job, could have had only a small effect on long-run welfare participation (Card and Hyslop, 2005). Adopting a mutual obligations approach – whereby the participation in a programme becomes compulsory after a period of unsuccessful job search – has proven effective in many countries (OECD, 2005b), even though less stringent requirements might be appropriate for lone parents and partly disabled people. In this approach, public services provide effective re-employment services to job-seekers, who in turn take active steps to find work or improve their employability if they do not want to face benefit sanctions. Moreover, tailored measures, similar to the ones adopted in the JobsNow pilot programme recently implemented in Ontario, have also yielded encouraging results, although an evaluation of the programme's effectiveness will be available only in the second half of 2007.[4] It will also be important to carry out a complete assessment based on a cost-benefit analysis (including consideration of fiscal, deadweight and displacement costs) before generalising this type of programme.

Low-wage earners face poverty traps

Despite a fall over the past ten years, poverty rates have remained high, even for households where one person is working. The proportion of full-time employees earning low wages has been broadly stable at 14% since the beginning of the decade and has been concentrated in some specific regions (Table 5.1). Very often low earnings potential is associated with a lack of education and literacy. According to the 2003 Adult Literacy and Life Skills Survey, roughly one in two workers earning less than CAD 20 000 annually are in the two lowest classes of prose literacy proficiency. Although these workers would clearly

Box 5.1. **OECD experience on active labour market policies**

In 2005, the OECD thoroughly examined the impact in OECD countries of activation strategies and other ALMPs on employment outcomes, primarily based on evaluation studies of a wide range of programmes. The main findings of this review are the following:

- The *de facto* cut in benefit entitlements that is implicit in the "stick" element of activation programmes should be set at a moderate level. Activation programmes sharply increase the total amount of employment services that are delivered to job-seekers. Some individuals respond by dropping their benefit claim, rather than complying with participation requirements. But to allow this sorting effect to arise, employment services need to ensure that requirements are moderate, *i.e.* they should not be equivalent to blanket denial of benefit entitlement. In general, in the absence of effective activation programmes, benefit schemes for the long-term unemployed become unsustainable or excessively costly in the long term.
- Effective activation strategies can have a significant impact on aggregate unemployment. Importantly, better job prospects for clients who receive activation services do not seem to come at the expense of other job-seekers, *i.e.* there is little evidence of net "substitution" or "displacement" effects.
- Initial successes in reducing unemployment can start a "virtuous circle". Falling numbers of benefit recipients create room for heightened support for those who remain unemployed and for further policy reforms which intensify the activation strategy.
- Microeconomic evidence provides information on what works. Job-search assistance or "work-first" strategies often have a large impact, and their cost is relatively low. Long-term labour market programmes, such as training and job-creation measures, often have little or negative short-term effect on outcomes. However, compulsory participation in long-term programmes may have a "motivation" effect, encouraging people to find work before programme participation starts. Intensive employment services, individual case management and mixed strategies with selective referrals to long-term labour-market programmes tend to have the largest impacts.
- The time profile and the outcomes variables that are influenced differ between programmes. "Work-first" programmes have a large employment impact in the short term, which fades in later years. By contrast, favourable impacts for participants in the Restart programme in the United Kingdom, and some training programmes have appeared only after about two years. "Work-first" programmes in some cases cause a reduction in entry wage rates, and in the longer term they cause a long-term reduction in benefit recipiency with a relatively smaller positive impact on employment rates. "Mixed" strategies and intensive employment services have impacts on employment or total earnings that approximately parallel and sometimes exceed what would be expected, given their impact on benefit caseloads.
- The effects can vary sharply between apparently similar programmes. The context and detailed content of programmes can be important determinants of their impact. Moreover, increased spending on certain functions of public employment services may face declining returns, especially if other (complementary) types of input are not also increased.

Source: OECD (2005b).

benefit from literacy assistance, in the form of effective adult education and learning activities, their participation rates in these training programmes remain limited and lower than those of people with higher literacy skills.

Table 5.1. **Full-time employees earning low wages**[1]

2004, per cent

	Total	14.4	
Education		**Sex**	
High school or less	22.5	Male	10.2
Non-university secondary certificate	11.4	Female	20.0
University degree	4.2		
Age (years)		**Residency**	
16 to 24	45.6	Newfoundland and Labrador	32.2
25 to 34	12.9	PEI	33.4
35 to 44	10.2	Nova Scotia	23.9
45 to 54	11.5	New Brunswick	27.5
55 to 64	12.9	Quebec	14.6
		Ontario	11.6
Origin		Manitoba	20.6
Canadian born	13.7	Saskatchewan	18.3
Recent immigrants[2]	26.4	Alberta	13.7
Established immigrants	13.4	British Columbia	12.4

1. Low-paid workers are those who earn less than CAD 10 per hour in constant 2001 dollars.
2. Recent immigrants have been in Canada for less than five years.

Source: Statistics Canada (2006).

In this context, building the literacy skills of the low-wage earners appears to be a promising route out of poverty. Increasing their earnings potential through upskilling could enable them to reach beyond the range of income over which existing benefits are phased out. Experience from other OECD countries shows that a number of programmes have got good results (OECD, 2005c). In particular, intergenerational learning programmes are a successful method for dealing with problems of literacy (see below). Providing flexible alternatives for learning, including part-time and distance-learning programmes employing information and communication technologies, have helped a number of countries reach high participation rates. Effective delivery of training in the workplace can also contribute to raising overall participation and achieve good outcomes. Efforts have already been made in this direction in Canada through the Workplace Skills Initiative, introduced in the 2004 federal Budget, which supports pilot projects aiming at developing skills and literacy in the workplace. To avoid excessive fiscal costs, workplace-based measures should be designed to address the particular needs of recent immigrants, unattached individuals and lone-parent mothers, as low-wage earners are concentrated in those categories (Morissette and Picot, 2005). This will also help to raise the suitability and the efficiency of the training.

Addressing the specific challenges facing minority groups

Aboriginal people[5] and first-generation immigrants currently experience much poorer health and social outcomes than their Canadian-born counterparts (Table 5.2). These groups, Aboriginals in particular, currently represent a small percentage of the total population, but they are fast-growing segments. Their importance is likely to intensify over time, especially in some specific areas, provinces or large cities, where these populations are concentrated (Table 5.3). Improving the social status of these categories will be beneficial to the whole society by lowering the percentage of workless households and thus poverty rates.

Table 5.2. **Social and economic outcomes of Aboriginals and immigrants**

		Aboriginals	Immigrants	*Of which:* Recent immigrants	Other Canadians
Percentage of the population	2001	3.4	18.4	3.3	78.2
Structure by age					
0-14	2001	33.2	5.8	21.2	18.9[1]
15-64	2001	62.7	75.3	75.5	68.6[1]
65+	2001	4.1	18.9	3.3	12.5[1]
Health conditions					
Life expectancy, men	2001	70.4	. .	. .	77.1
Life expectancy, women		75.5	. .	. .	82.2
Tuberculosis incidence rate (per 100,000)	2000	20.5	19.5	. .	2.2
Infant mortality rate (per 1000 life births)	2000	6.4[2]	. .	. .	5.5[1]
Education					
Less than secondary	2001	65.3	34.5	39.0	46.1[1]
Secondary, some post-secondary[3]	2001	30.8	42.6	28.8	41.0[1]
University	2001	3.9	22.9	32.2	12.9[1]
Labour market (15 and older)					
Unemployment rate	2001	19.1	7.4	13.8	7.4[1]
Employment rate	2001	49.7	56.9	55.2	61.5[1]
Female participation rate	2001	47.1	54.6	64.0	56.1[1]
Income					
Average employment income (CAD)	2000	19 132	29 337	19 675	29 769[1]
Low income rates (LICO definition)	2000	31.2	19.1	41.2	12.9[1]
Composition of income	2001				
Employment		75.1	77.7	82.8	77.1[1]
Government transfer		20.8	11.2	11.0	11.6[1]
Other		4.1	11.1	6.2	11.3[1]
% eligible for EI	2003	. .	80.3	. .	84.7
Social conditions					
% children living with a sole parent	2001	32.0	. .	. .	17.0
Prison rates (% of specific population)	2001	1.6	0.2	. .	0.2
Measure of well-being[4]	2001	0.7	. .	. .	0.8
% in urban areas	2001	49.0	94.0	. .	64.0[1]

1. All Canadians.
2. First Nation on reserve.
3. High school graduation certificate only, some post-secondary education only, trades certificate or diploma, college certificate or diploma.
4. The well-being indicator combined data derived from the 2001 Census for four indicators (education, labour force activity, income and housing) to give each community a well-being score from 0 through 1 (with 1 being the highest).

Source: Census 2001, Government of Canada (2005), CIHI, Picot and Myles (2005), Adult Correctional Survey, Canada Employment Insurance Commission (2005), Indian and Northern Affairs Canada (2004).

Many of the difficulties Aboriginals and immigrants have to cope with are common to other Canadian low-income earners and stem from low educational attainment and poverty traps. Nonetheless, Aboriginals and immigrants also face specific barriers to employment (see below), so that mainstream employment measures may not always be successfully applied to them. This appears to be particularly the case for Aboriginals living on reserves and recent immigrants (those who have been in Canada for less than five years).

Table 5.3. **Aboriginal population and immigrants across the country**
2001

	Provinces and territories		
	Share of Aboriginal population	Share of total population	Aboriginal share
Newfoundland and Labrador	1.9	1.7	3.7
Prince Edward Island	0.1	0.5	1.0
Nova Scotia	1.7	3.0	1.9
New Brunswick	1.7	2.4	2.3
Quebec	8.1	24.1	1.1
Ontario	19.3	38.1	1.7
Manitoba	15.4	3.7	13.4
Saskatchewan	13.3	3.2	13.3
Alberta	16.0	9.9	5.3
British Columbia	17.4	13.1	4.4
Yukon	0.7	0.1	22.8
Northwest Territories	1.9	0.1	50.3
Nunavut	2.3	0.1	85.0
Canada	100.0	100.0	3.4
	Agglomerations		
	Immigrant distribution	Aboriginal distribution	Total population distribution
Toronto	43.3	2.1	15.7
Vancouver	17.7	3.8	6.6
Windsor	1.3	–	1.0
Calgary	3.8	2.2	3.2
Ottawa-Hull	3.9	1.4	3.5
Montreal	11.8	1.3	11.4
Total large agglomerations	94.0	27.8	64.4
Reserve and rural (non–reserve)	. .	51.9	. .
Other	5.9	21.3	35.6
Canada	100.0	100.0	100.0

Source: Census 2001, Siggner (2003).

Aboriginals: raising education attainment and self-reliance

In general, Aboriginals, especially those who live on reserve, have much lower educational attainment than non-Aboriginals.[6] Because of their high poverty rate, they also face special challenges in finding suitable and affordable housing, leading to a very high rate of homelessness in many big cities or to overcrowding and inadequate housing on reserves. The proportion of lone parents is also higher amongst Aboriginals than amongst non-Aboriginals, which imposes some additional constraints for those who want to take up a job. Moreover, Aboriginal populations face poor employment prospects, especially if they live in communities where there are limited economic opportunities. Indeed, physical infrastructure that currently exists on First Nations' lands is inadequate for industrial and commercial development. Roads, sewer systems, and water treatment and distribution systems are of poor quality or non-existent (Fiscal Realities, 2001). Setting up and running a business is also more difficult and costly on than off reserve (Indian Taxation Advisory Board and DIAND, 1999).[7] A number of communities, in particular Inuit communities, are also isolated because of the remoteness of their location and sometimes because of the lack of road access.

In addition to these specific challenges, designing successful policies is complicated by the organisation of the Aboriginal population into very small communities, which are covered by a large number of treaties with various self-governing arrangements. In addition, Aboriginal matters fall under the overlapping jurisdiction of both the federal government and the provinces and territories.[8] Programmes have been managed by a number of federal departments and provinces, which has rendered the assistance system complex and has increased the risk of duplication. Most programmes offered to Aboriginals have focused primarily on shorter-term interventions and income transfers and have had only modest success (Prairie Research Associates, 1999), with training allowing participants to access only temporary and low-paid jobs. By the end of the 1990s, the failures of previous public policies and institutions, in particular regarding education, were publicly recognised (Minister of Indian Affairs and Northern Development, 1997), and new policies were devised with the objective to lead Aboriginals to self-sufficiency. But progress has been slow.

Recent initiatives have acknowledged the need for accelerated reforms, and the focus has shifted toward more investment in long-term outcomes and more involvement of Aboriginal people in the design of policies.[9] In the so-called Kelowna Accord in November 2005, First Ministers and national Aboriginal leaders committed to work together, with the objective of closing the gap in the areas of education, health, housing and economic opportunities.[10] In the 2006 federal Budget, new funding of CAD 450 million over two years has been directed toward priority areas of education; women, children and families; and, water quality and housing, but the total of funds allocated to the Aboriginal priorities remains well below the CAD 5.1 billion over five years pledged at the time of the Kelowna Accord. Existing education policy and management regimes (provided at the federal level) are currently being reviewed: a First Nation Education Policy Framework is due to be completed imminently and a First Nation Education Management Framework in June 2007.

The emphasis of employment policies has also moved toward more active measures aiming at increasing employability skills or fostering entrepreneurship. Programmes based on a mutual obligations approach could also be envisaged.[11] It will be important to maintain this orientation favouring self-reliance, but also to assess regularly the effectiveness and progress of these initiatives as well as their suitability to the Aboriginal population. Given the large influx of Aboriginal youth in the labour market over the next ten years, investments should be concentrated on improving educational attainment, as this could markedly contribute to closing the labour-market outcome gaps with other Canadians (Hull, 2005). In particular, intervening at an early stage of life, for instance by providing suitable early childhood education services, could facilitate the integration of the Aboriginal population in Canadian society while preserving their cultural identities. This could be done through full language and culture immersion programmes similar to those existing in New Zealand and Norway (OECD, 2004). Similar initiatives already exist in Canada, through the Inuit Head Start programme, and could usefully be extended to other communities.

Measures to promote the economic development of reserves have been mostly limited to providing funds or giving advice to Aboriginals who want to set up a new business. Moreover, progress toward removing institutional barriers has been very slow. Accelerating the pace of reform could remove uncertainty and spur private investment on reserves. Some simplification of the delivery of assistance programmes would increase transparency and accountability. In particular adopting a one-stop-shop approach for the delivery of support would facilitate recipients' access and improve programme effectiveness.

Recent immigrants: facilitating faster integration in the labour market

Recent immigrants also encounter specific difficulties. Most immigrants now come from Asia,[12] and there is evidence that these minority workers face much higher risks of periodic unemployment, low wages and poverty than comparably skilled Canadians, despite having, on average, higher levels of education than Canadian-born. New immigrants may have lower earnings at entry, even with comparable levels of education and experience, because their human capital may initially be less transferable due to the lack of English or French language skills or to cultural differences.[13] Decreasing economic returns for foreign work experience are also amongst the reasons explaining slower economic progress of immigrants (Picot and Sweetman, 2005). Immigrants may also have suffered from a general decline in relative wages for all new entrants to the Canadian labour market.

Economic returns to education for immigrants educated outside of Canada are still lower than for Canadian-born workers or for immigrants educated in Canada, reflecting the non-recognition or undervaluing of foreign education (OECD, 2003).[14] Against this background, in April 2005 the Government of Canada expanded its Internationally Trained Workers Initiative. It includes working on foreign credentials assessment and recognition, delivering advanced job-specific language training, and providing better information and tools to immigrants before they come to Canada. This initiative is welcome, and further efforts should be concentrated on improving foreign credential recognition procedures.

At the other end of the spectrum, a significantly higher proportion of immigrants have low literacy levels compared to their Canadian-born counterparts.[15] This is true for both recent immigrants and those who have stayed for a longer period in Canada, despite relatively high enrolment rates in training courses.[16] This suggests that past training programmes failed to achieve their objectives. Developing special skill-upgrading programmes for foreign workers would facilitate their integration into the labour market. In particular, programmes could be targeted on immigrants whose mother tongue is not English or French, as they experience the lowest level of literacy and represent an increasing share of immigration flows (58.2% of immigrants in 2001). A promising approach for raising literacy amongst the immigrant population would be to set up family literacy programmes (Box 5.2).

Expanding programmes for disadvantaged children and helping at-risk families

Investing more in pre-school intervention programmes to increase the school readiness of young disadvantaged children is likely to produce ample social benefits. They could be more cost-effective than remedial interventions later in life such as education programmes for high-school dropouts and training programmes for welfare recipients or disadvantaged workers. They could also help to improve equality of economic opportunities and lifetime prospects for the individuals concerned. Well-known examples of comprehensive child development programmes are the US Head Start and Early Head Start, which serve children from birth to age five in low-income families. By developing cognitive and language skills, these schemes have been found to have positive effects on social skills, make later learning easier and reduce the risks to drop out of school and thus to be unemployed.[17, 18] One limitation, however, is that the gains made in early childhood are likely to be lost over time without the provision of routine follow-through services. Only

Box 5.2. **Family literacy programmes in selected OECD countries**

Intergenerational learning has developed in a number of OECD countries and is regarded as beneficial for both children and parents. This training is based on the idea that emulation amongst family members helps increase the efficiency of training courses.

In the United States, parents and children are gathered in the same classroom at the same time and share activities related to literacy, mathematics, General Education Development test preparation and new ICT literacy. Evaluations undertaken in several US states suggest that family literacy programmes improve children's academic performance and help build parents' involvement in their children's education.

The approach is also used in the Netherlands where, as in the United States, the teaching takes place in primary schools. However, in the Netherlands, mothers and children tend not to gather in the same classroom but have different activities in different rooms.

In New Zealand, adult participants in the Manukau project take part in a full-time tertiary programme on a school site. They work with one of their children in literacy-related activities during some allocated time each day. Moreover, they can also observe and study child development and behaviour as part of their adult education course. Parents, children and wider extended family also take part in regular literacy-related events and activities. The project is found to have increased skills (especially for parents) and notably raised self-confidence (of both adults and children). Few of the participants, who were in the main out of paid employment or in low-paid jobs, wished to return to their previous positions once the programmes were completed. There is also an indication that the project has helped parents become more involved in their children's education.

In Germany, the "Family Literacy" pilot project in Hamburg started at the beginning of the school year 2004/05. It aims at enhancing the literacy skills of both parents and children of immigrant background. The focus is on supporting parents with regard to their basic competence in the field of education, especially their ability to support the written language skills acquisition of their children at home.

Source: OECD (2005c), Colorado Even Start (2006), Benseman and Sutton (2005).

a limited number of programmes for disadvantaged children exist in Canada, for instance the ABC Head Start in Edmonton or the federally-funded head start and child care programmes for Aboriginal children living on and off reserve, and the Ontario Best Start. Expanding such initiatives throughout Canada and providing earmarked support (or vouchers) for disadvantaged children to access high-quality childcare services could be beneficial. Potential costs can be limited by focusing on young children living in at-risk environments. In particular, although poor developmental outcomes are scattered across the socio-economic spectrum, some well identified factors such as growing up in a single-parent family, having poorly educated parents or living in poverty are usually associated with vulnerability.

Another strand of promising preventive programmes helps at-risk families to develop their parenting skills. One example is the NZ Early Start programme that provides home visits by trained support workers to families with pre-school children, who may be facing stress, difficulty or disadvantage. Evaluations of the service show that it leads to multiple benefits in a number of areas including child health, childhood education, parenting and family functioning (Box 5.3). Here again, these measures are likely be more cost-effective than later interventions.

Box 5.3. **NZ Early Start experience**

Since the inception of the New Zealand Early Start programme in 1995, nearly 800 families and their children have been supported and assisted. The service provided is free and home based. Families participate on a voluntary basis and are provided with intensive support and assistance by professionally qualified and supervised Family/Whanau Support Workers for up to five years. Families are encouraged to identify their needs and responsibilities, recognise and utilise their strengths and abilities, formulate individual goals relevant to their culture, environment and capacity, take small steps towards meeting these goals and responsibilities, and celebrate success and maintain positive change over time.

An important component of the programme has been the evaluation of the services using a randomised trial in which 220 families receiving Early Start have been compared with 223 control families. The evaluation research, conducted by Professor David Fergusson and his colleagues at the Christchurch School of Medicine and Health Sciences, shows children from both Maori and non-Maori families benefit from Early Start intervention. Some of the positive outcomes are:

- greater contact with their family doctor;
- greater likelihood of receiving child health checks;
- higher rates of attendance at pre-school dental clinics;
- higher rates of pre-school education;
- lower rates of hospital admission for childhood accidents;
- less exposure to child abuse and neglect;
- more positive/less punitive parenting;
- lower susceptibility to behavioural problems.

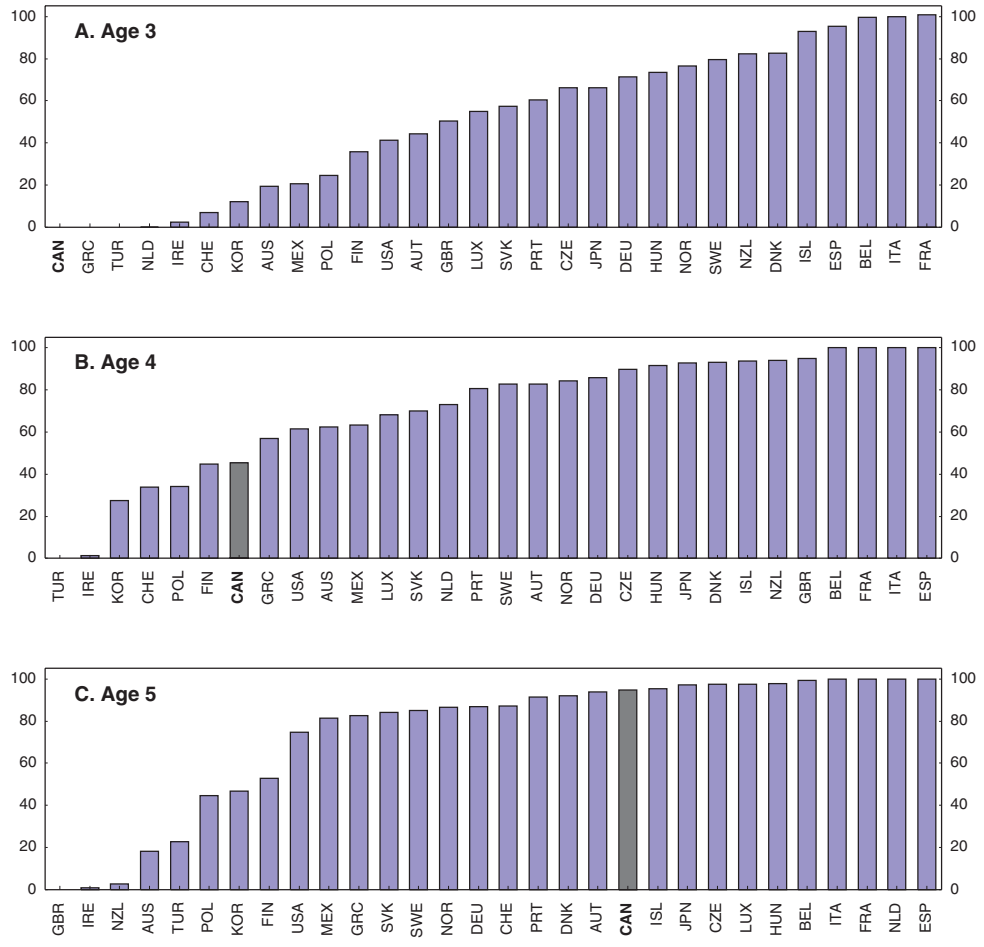
Facilitating access to high-quality early education and care

Although the provision of early education and childcare services has undergone major improvements in recent years, particularly in Quebec,[19] it still remains at an initial stage and its coverage is patchy (OECD, 2004 and 2005d). The provision of services varies widely among provinces and territories, and different kinds of centres: kindergartens, and regulated and unregulated childcare.[20] Kindergarten programmes are part of the education system,[21] but variations are found in the amount of provision (full or part-day) and to a lesser extent in age eligibility. All provinces and territories provide kindergarten for five year-olds, and Ontario provides places for most four year-olds, depending on the school district. Quebec, Manitoba, Saskatchewan and Alberta also provide somewhat more sparse kindergarten coverage for four-year olds, and only some marginal programmes are available for younger children.

As a result, enrolment rates in pre-school for three and four year-old children are low by OECD standards (Figure 5.3). This contrasts with international evidence that high-quality education services can foster children's social and cognitive skills, even before they have reached the age of five (see for instance Loeb *et al.*, 2005; OECD, 2001). Moreover, high-quality universal pre-school for three and four year-old children is estimated to have a long-term positive impact on economic growth, so that the initial fiscal costs will be recovered (Dickens *et al.*, 2006). In this context, provinces could envisage moving towards free pre-school education to all children from age three, by drawing on experience from other OECD countries.[22] Indeed, it is likely to yield a high pay-off (Box 5.4), despite the significant short-term cost.

Figure 5.3. **Enrolment rates in pre-school**[1]

Per cent, 2003 or latest available year



1. Pre-school in Canada for age 4 and 5 includes public, private and federal schools and schools for the visually and hearing impaired. Regulated childcare is not included. In other OECD countries and for Canada for age 3, pre-school is defined as the initial stage of organised instruction, designed primarily to introduce very young children to a school-type environment. Programmes should be centre- or school-based, be designed to meet the educational and developmental needs of children at least three years of age, and have staff that are adequately trained (*i.e.* qualified) to provide an educational programme for the children.

Source: OECD Education database and Statistics Canada.

In regulated childcare for younger children and for out-of-school hours, there is considerable variation across provinces and territories in the range and scope of services offered, fees, quality, financing, teacher and staff training, and wages. The quality of childcare is important for child development, whether that care is provided by parents or others. The last comprehensive pan-Canadian survey on the quality of centre-based childcare services dates back to 1998 and concluded that the majority of the centres in Canada (especially for-profit centres) were providing care of minimal to mediocre quality (Goelman *et al.*, 2000). The children's physical and emotional health and safety were protected, but few opportunities for learning were provided. Since then, most indicators suggest only limited progress has been made. Moreover, on average Canadian for-profit centres continue to deliver services of lesser quality than not-for-profit centres (Cleveland

Box 5.4. **Conceptual underpinnings of early childhood education and care**

Early childhood education and care policies have been centre stage in Canada, and clarification of the rationale for different policies provides a benchmark against which their net benefit can be assessed, although, in practice, these conceptual elements cannot always be neatly separated.

The first conceptual element is that high-quality early childhood education (and schooling) is an investment in *human capital* that generates a positive net social rate of return. This return comes not only from higher future economic output as a result of a more highly skilled workforce, but also through greater social inclusion and equity of access to economic opportunities. These benefits are largely independent of the working status of parents.

For school-age children, it is virtually universally accepted that public school should be available to all children and at no cost to parents. There is also extensive research demonstrating that high net social rates of return accrue to early childhood education, although there is less consensus about what is the optimal age for children to start, the ideal number of weekly hours and the extent to which early childhood education should be concentrated on disadvantaged children, for whom the net social benefits are likely to be largest.

The second conceptual element is *the cost of childcare for working parents*. Working parents face additional costs that a family with a stay-at-home parent does not, either if the child is too young for school, or for out-of-school- hours care. Furthermore, when one parent stays at home (full-time or part-time) to care for children, the household incurs a cost of forgone income, but pays lower taxes, as "home production" is not taxed. If the cost of childcare is large relative to employment income, this may bias the decision of parents against working and paying for childcare and towards providing care at home themselves.

However, evidence is mounting that the cost of periods outside the workforce for childcare can be high and permanent, and those who provide this care (typically women) do not catch up lost ground when they resume employment. Weaker career earnings eventually translate into lower retirement income.

The implication for public spending is that measures to lower the cost of care for working parents make sense; there is also a compelling argument that such support should be essentially neutral as to the type of non-parental care involved. In effect, it is assumed that if parents are able to care for their own children, they are capable of choosing to whom that responsibility should be delegated. In this respect, it is akin to a voucher. In contrast, restriction of the type of day care that a government is willing to subsidise requires separate justification. Limiting parental choice could be justified if there were a demonstrable market failure in the supply of childcare services or clear evidence that parents make poor choices at the expense of their children.

The net economic benefit of lowering childcare costs faced by parents depends on the labour supply response. If many mothers already work, then lowering the out-of-pocket expenses may induce little additional participation in the workforce for a high fiscal cost, since higher public payments would also go to all those already in work.

The third conceptual element is *income equivalence*. This is based on the assumption that horizontal equity means adjusting household disposable income for the additional costs associated with raising children. It can be delivered through specific child-related payments to households, tax allowances or through the formula for defining household taxable income. Measures may apply to all households with children or only to those fulfilling certain income criteria.

The degree of income equivalence is largely a social choice, reflecting countries' preferences about horizontal equity. But means-tested approaches can involve high effective marginal tax rates over the claw-back income range that can discourage employment, additional working hours and investment in human capital.

and Krashinsky, 2005). Indeed, a large number of for-profit centres do not comply with provincial quality standards. This may stem both from the lack of clarity in quality aims for childcare services in some provinces, although some of them are working toward a curriculum and quality framework, and from difficult enforcement of quality standards (OECD, 2004). One additional reason is that for-profit centres receive less public funding than non-commercial centres. Removing the differential funding treatment of for-profit and not-for-profit childcare that still exists in some provinces is likely to narrow the quality gap between the two types of centres. This change would also help in raising the capacity of provincial governments to ensure centres meet quality standards. Those standards need to be sufficiently detailed to take account of children's specific needs, which are likely to vary with age. At the same time, having too strict regulatory requirements may, in the end, weigh heavily on the cost of childcare service and reduce access.

The system remains inaccessible to many low-income Canadian families, and difficulties of access to quality services are particularly severe for children from Aboriginal groups. The low rate of access can reflect both supply and demand factors. Regulated childcare capacity has been massively expanded in Quebec in recent years, reaching nearly three-quarters of all those under six, but the number of regulated childcare spaces remains limited elsewhere (Table 5.4). Against this background, the new federal government has announced supports such as tax credits or grants to help employers and non-profit associations create childcare spaces, even though the supply of childcare services is not under its responsibility.

Table 5.4. **Regulated childcare**

2004

	Regulated childcare spaces[1]	Regulated childcare spaces as a per cent of the total of 0-5 year-old children	Per cent of regulated centre-based spaces that are not "for-profit"
Province/Territory			
Newfoundland and Labrador	4 921	15.7	27.0
PEI	4 100	46.6	30.0
Nova Scotia	12 759	23.0	55.0
New Brunswick	11 897	26.1	–
Quebec[2]	321 732	72.6	88.0
Ontario	206 743	24.8	78.0
Manitoba	25 634	33.8	92.0
Saskatchewan	7 910	11.4	100.0
Alberta	47 952	21.9	46.0
British Columbia	80 230	31.5	–
Northwest Territories	1 219	28.3	100.0
Nunavut	1 014	25.1	100.0
Yukon Territory	1 369	66.1	74.0
Canada	745 254	36.4	79.0[3]

Note: Regulated childcare spaces include school-age care and thus over estimate the spaces truly available for 0-5 year old children.

1. Nursery schools (part time) are not regulated in Quebec, Saskatchewan and the Yukon Territory and so are not included in these figures.
2. Quebec's figures include school-age spaces which are under the aegis of the Ministry of Education.
3. Total does not include British Columbia and New Brunswick (which do not provide figures on the breakdown between for-profit and not-for-profit institutions).

Source: OECD calculations based on data from Childcare Resource and Research Unit (2005).

Despite public subsidies, parental contributions to childcare costs appear to be higher than in the average OECD country, especially for low-wage lone-parent families in Ontario (Figure 5.4). The main method of providing government funds for childcare is through fee subsidies for low-income families in all provinces and territories except Quebec. In Quebec, parents pay CAD 7 per day for regulated care, and a supplementary subsidy programme further assists very low-income families so that out-of-pocket childcare expenses in this province are likely to be much lower than elsewhere in Canada. At the federal level, the childcare expense tax deduction recognises that childcare is a work related expense and is an important aspect of horizontal equity in the tax system. In addition, income equivalence measures, such as the Canada Child Tax Benefit and the National Child Benefit supplement, are also delivered at the federal level. Because they are income-tested, these benefits reduce incentives to work for low earners over certain income ranges (see above).

By contrast, the new Universal Child Care Benefit (UCCB) put forward by the current federal government will be universal, if all the provinces make the necessary adjustment not to claw back social assistance programmes. It is to be set at CAD 1 200 per year for each child under six. It is independent of childcare use and income, and, as such, can be seen as an income equivalence measure. Payments received under the UCCB will be reported as income and will therefore increase taxes paid. However, the UCCB will not reduce amounts received under federal income-tested benefits and programmes. To date, the majority of provinces have announced that amounts received under the UCCB will not claw back social assistance payments. In addition, Nova Scotia has announced the introduction of a new tax credit, which will largely offset the provincial income tax paid on the UCCB. As the benefit eases the household budget constraint, it may lead to some withdrawal of labour supply at the margin.

A rebalancing of the funding system could be envisaged, so that greater assistance with childcare costs is provided to low-income families and lone parents, for whom childcare services are particularly important and likely to yield the highest returns. As childcare is a provincial responsibility, provinces need to play a key role to ensure that childcare services are affordable to these families. Nonetheless, if the federal government wished to further support out-of-pocket childcare costs for low-income earners, then one option it could consider is to create a new refundable tax credit for childcare expenses. However, refundable tax credits for childcare already exist in Ontario and Quebec, the two largest Canadian provinces.

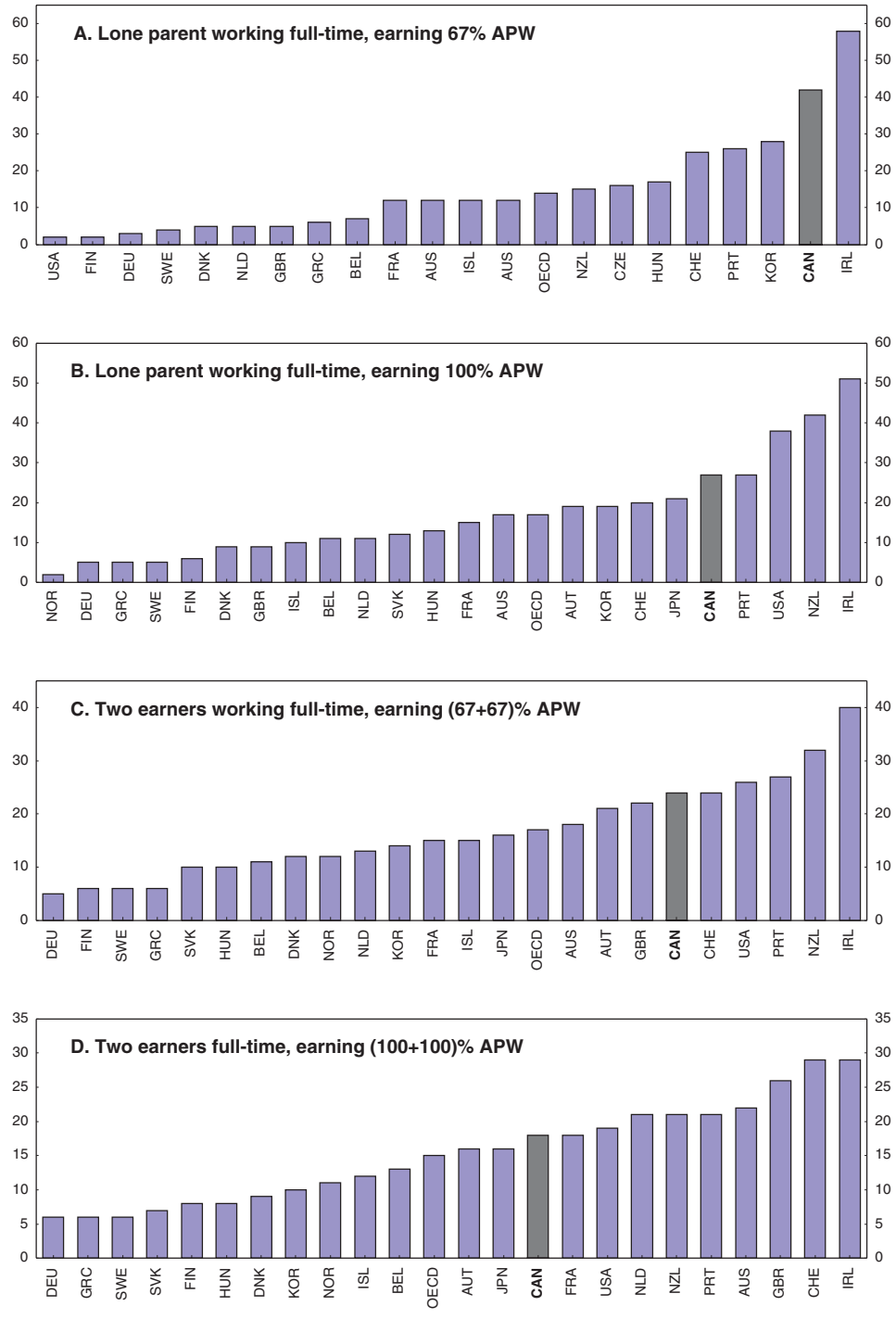
Increasing incentives for older workers to extend their working lives

As seen in Chapter 1, population ageing and the resulting increase in the dependency ratio is likely to slow real GDP growth unless productivity growth increases. Increased female participation rates and lifetime hours resulting from better educated new cohorts will moderate the impact of the change in the dependency ratio. Encouraging increased participation from older workers could also temper the impact of ageing on growth (Oliveira Martins *et al.*, 2005), especially if past trends in longevity gains continue and recent cohorts are healthier than their predecessors (Chen and Millar, 2000).

Employment rates of older workers in Canada have surged in recent years. Participation rates remain lower than in a number of OECD countries, including the United States and the United Kingdom. Despite recent initiatives,[23] elderly workers still face disincentives to carry on working and, once unemployed, they may find it difficult to become re-employed, thereby extending average spell of unemployment duration (Table 5.5).

Figure 5.4. **Childcare costs, net of benefits and tax concessions**[1]

Per cent of family income



1. Canadian data is for a two-children family living in Ontario.

Source: Immervoll, H. and D. Barber (2005), "Can Parents Afford to Work? Childcare Costs, Tax-Benefit Policies and Work Incentives", OECD Social, Employment and Migration Working Paper, No. 31, OECD, Paris.

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Table 5.5. **Unemployment duration, employment and participation rates**
By age, 2005

	Unemployment spell Per cent of total unemployed of the age group				Employment rate	Participation rate
	Less than 4 weeks	5 to 26 weeks	27 to 51 weeks	52 weeks and more		
25 to 44 years	35.0	48.2	7.2	9.6	81.8	87.1
45 to 54 years	30.6	45.9	8.2	15.3	80.3	84.7
55 to 64 years	27.4	44.4	9.3	18.9	54.8	57.9

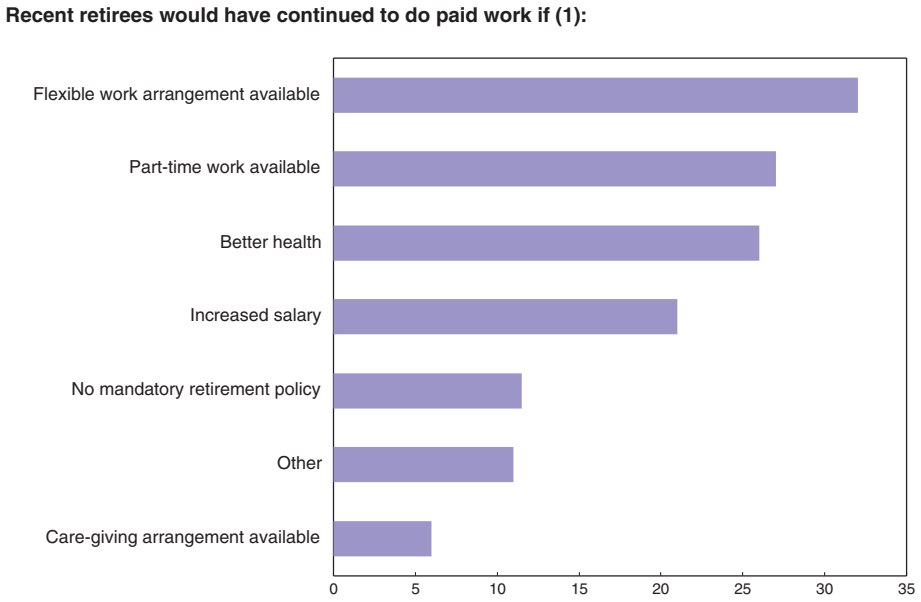
Source: Statistics Canada, Labour Force Survey.

In this context, an important dimension of policies is to increase the employability of older workers to facilitate their hiring and retention. Elderly workers' participation in existing employment schemes is currently low. Training programmes better tailored to older workers' needs would be beneficial. As is the case for other workers (see above), a more active intervention via a mutual obligations approach may also be warranted for older job-seekers so as to increase their participation in employment programmes.

Pension-related factors, such as benefit levels and eligibility criteria in public pensions as well as features of individual pension schemes, are an important determinant of retirement decisions.[24] Some institutional features of the current public system need to be adjusted so as to avoid encouraging individuals to withdraw from the labour force[25] (OECD, 2005e).

- With the current Canada Pension Plan (CPP) actuarial adjustment, lifetime benefits are higher for those who retire early. Early retirement is possible in the CPP at the age of 60 or after with a reduction of 0.5% per month before the age of 65. Similarly, postponement of benefits after 65 results in an increase of 0.5% per month. The Quebec government has considered adjusting the increase for deferral after the age 65 to 8.4% per year. This proposal goes in the right direction, but changes should go further, and both public schemes should be made actuarially neutral. However, the impact of such a measure is likely to be small and will, in particular, not affect retirement decisions of very low- and high-income earners, the reason being that the CPP does not represent a major source of income for either of these groups (Pollock and Sargent, 2004).
- The combined effects of the different public schemes generate strong disincentives to work after age 60. Indeed, an individual considering an extra year of work between the ages of 60 and 64 will compare the worth of receiving a lower but immediate pension with the "bonus" paid by the actuarial adjustment for delaying retirement. As it stands, the 50% reduction rate of the Guaranteed Income Supplement (GIS, the means-tested part of the universal basic pension), combined with actuarial adjustment in the Canada Pension Plan/Quebec Pension Plan (CPP/QPP) and taxation of income forms a strong disincentive for continued employment among lower-income earners (Milligan, 2005).[26]
- Once individuals receive a public pension, they cannot accumulate future pension rights on any future earnings nor can they accrue more than the maximum number of years of service credits. Removing this restriction, as already proposed by the Quebec government, could provide a modest encouragement to continue working (PRI project, 2005).

Figure 5.5. **Factors influencing workers' decisions to retire**
Per cent



1. Respondents could report more than one reason.

Source: Schellenberg, G. (2004), "The Retirement Plans and Expectations of Non-Retired Canadians Aged 45-59", Catalogue No. 11 F0019MIF2004223, Statistic Canada, Ottawa.

Inflexible current work arrangements and the lack of part-time work appear to be amongst the main factors influencing workers' decisions to retire (Figure 5.5). Indeed, a number of factors hinder a phased approach to retirement:

- Although mandatory retirement has already been removed in the federal administration as well as Manitoba, Quebec, Alberta, Prince Edward Island, the Yukon and the Northwest Territories and more recently in Ontario, it is still permitted under labour standards legislation or can be included in collective agreements in other provinces. Nearly 12% of recent retirees surveyed reported they would have continued to work in the absence of mandatory retirement (Morissette *et al.*, 2004).
- The calculation of benefits for the CPP is based on career earnings. If a worker delays retirement and continues to work at a wage lower than his career-average wage, the additional contributions may lead to a reduction in his pension compared to what he would have received if he had retired earlier. This penalises workers who would want to work part-time and could be avoided by simplifying the calculation of retirement benefits.
- Workers are required to leave their employment for a period of at least two months in order to draw CPP benefits (the so-called stop-work clause). This clause discourages older workers from moving into phased retirement within their current workplace and has already been lifted in the QPP. Simulations suggest that removing it would cause low-wage individuals to delay retirement by two or three years and up to four years for the highest-wage earners (Pollock and Sargent, 2004).
- The income tax rules permit an individual who is receiving a defined benefit pension to contribute to a registered private retirement savings (RRSP) based on any continued earnings and previously accumulated unused RRSP room, up to age 69. However, the

income tax rules prohibit the accrual of further pension benefits under the plan of the same or a related employer once a pension commences to be paid, which limits the type of phased retirement programmes that an employer can provide.

In addition to adjustments to the institutional framework, a number of measures would also make it easier for older workers to stay in work. *First*, information could be disseminated on benefits and costs of new forms of working environments, including flexible work scheduling (flexible hours, job sharing, part-time) and telework.[27] More flexible workplace arrangements would allow near-retirees to have a gradual transition to retirement, should they wish. *Second*, work arrangements and job requirements need to be adapted to older workers, who may be more subject to illness and disability than prime-age workers (OECD, 2005e). This could be achieved, for instance, by adjusting occupational health and safety measures to accommodate older workers' needs.

Conclusion and policy recommendations

This chapter has reviewed aspects of social policies where design and efficiency could be improved. Policy recommendations are provided below (Box 5.5).

Box 5.5. **Policy recommendations for social policies**

Lowering welfare traps and improving the use of active labour market measures

- Improve co-ordination between federal and provincial assistance programmes to reduce claw-back rates resulting from the structure of targeted income support and income taxes and ease the welfare traps faced by low-income earners. Extend health benefits for people exiting social assistance for employment or until employer health benefits are available.
- Complete a full assessment of existing active labour market measures and phase out inefficient programmes. Put the emphasis on a more tailored approach to job-seekers and on a mutual obligations approach.
- Further develop literacy training for the low-wage earners to raise their earnings potential.

Increasing the employment rates of vulnerable groups

- Focus on improving educational attainment of the Aboriginal population and adopt measures that boost their self-reliance rather than dependence. Accelerate reforms to lower the cost of creating and running businesses on reserves. Simplify and streamline the delivery of assistance programmes to Aboriginals.
- Continue developing better procedures for assessing and recognising foreign credentials and tailored training programmes to improve immigrants' low levels of literacy.
- Reinforce support to disadvantaged children and at-risk families via earmarked support (or vouchers).

Improving access to early education and care

- Provinces and territories could consider providing free pre-school education for children age 3 and above.
- Continue to review provincial quality standards and ensure childcare centres comply with them. Remove the differential treatment for public funding of for-profit and non-profit childcare in provinces where such differentials still exist.
- Redesign assistance to increase affordability of childcare services for low-income families.

Box 5.5. **Policy recommendations for social policies** *(cont.)*

Correcting incentives to retire early

- Make current adjustment to CPP actuarially neutral for workers between 60 and 65 year old and review the calculation of the income for the GIS claw-back to remove the distortions imposed on low-income workers after 65. Relax restriction on public pension rights' accumulation.
- Remove the mandatory retirement age where it still exists and eliminate the stop-work clause in the CPP.
- Amend the Income Tax Act to permit the simultaneous payment and accrual of pension benefits under a defined benefit plan of the same or a related employer.
- Disseminate information on flexible work arrangements and develop suitable job-related training for older workers.

Notes

1. These estimates do not include the cost of childcare.
2. Such a measure was announced by the Ontario government in August 2005.
3. Additional evaluations are underway in Nunavut, Alberta and Ontario and have been launched in Saskatchewan and New Brunswick.
4. Launched in April 2005, the Ontario government's JobsNow pilot programme aims to help long-term Ontario Works clients find and keep sustainable jobs. It focuses on helping people who have been on social assistance for more than 12 months to re-enter the job market through a combination of access to job opportunities and longer-term job-retention measures. It is based on the principle that different people need different supports to find and keep a job and provides participants with individualised job-matching services, pre-employment supports, job orientation information and follow-up on any job-related issues for up to 18 months.
5. In Canada, the term Aboriginal refers to First Nation, Métis and Inuit peoples.
6. In 2001, 5.3% of all young Aboriginal Canadians (aged 15-24) had a university degree or college diploma, as compared with only about 2.5% for Aboriginal population living on reserve.
7. In part, this can be attributed to institutional barriers such as the provision in the Indian Act related to land ownership, the use of reserve assets for loans collateral and the complex reserve zoning laws and management approvals (Conference Board, 2003).
8. Indeed, the federal government provides social assistance to on-reserve Aboriginals and provinces and territories cover off-reserve Aboriginals.
9. Australia has adopted a similar approach through the Shared Responsibility Agreements. Both governments and community work together to improve indigenous people's situation.
10. In addition, an agreement was also signed in November 2005 between the province of British Columbia, the First Nations and the Government of Canada to close the social and economic gap between First Nations and other British Columbians over the next 10 years.
11. In Australia, a governmental plan has proposed that new participants in some of the indigenous programmes would lose some benefits unless they looked for real jobs after a set length of time.
12. The proportion of arriving immigrants born in Asia was 3.2% in 1961 and rose to 58.2% in 2001; the proportion born in the United States and Europe fell from 94.4% in 1961 to 22.3% in 2001.
13. In 2001, 61% of the immigrants who came in the 1990s used a non-official language as their primary home language (as compared to 56% of the immigrants who arrived in the 1980s).
14. This effect is common in OECD countries, where immigrants have a greater risk of being overeducated than natives (Damas Matos *et al.*, 2005).
15. About 60% of immigrants had low literacy, compared to 40% for Canadian born, according to the 2003 Adult Literacy and Skills Survey.

16. 56% of skilled immigrants that were not working two years after their arrival were enrolled in an education or training programme in 2003. The proportion falls to 29% for family members and 49% for refugees (Statistics Canada, 2005).

17. The unemployment rate among dropouts aged 20 to 24 in 2004/05 was 19.4%, double that for all others in this age group.

18. See, for instance, Lefebvre and Merrigan (2003) for an overview of Head Start programme evaluations.

19. At the federal level, the government has steadily enriched child benefit levels over many years in an effort to reduce child poverty. Parental benefits have been reformed and a limited caregiver benefit programme introduced. As well, provincial governments have invested to varying degrees in children's services, particularly those that target low- and modest-income families. Quebec, in particular, stands out as developing extensive childcare and other similar services.

20. Kindergartens are generally for 5 year-olds (4 year-olds in Ontario). They are part of the school system and considered as an entitlement. Wages and working conditions for kindergarten teachers are similar to those of other elementary teachers (a university degree is required). In most provinces, regulated childcare includes childcare centres, preschool, school-age childcare and family home care. Regulated childcare is for up to 6 year-olds and is not an entitlement. No jurisdiction requires university-level training for childcare centre staff.

21. The exception is Prince Edward Island where Kindergarten is part of regulated childcare centres.

22. France, Belgium and Italy, for instance, provide free non-compulsory access to pre-school from the age of three.

23. A number of initiatives have been launched in recent years to boost employability, including the employability of older workers. These consist of: the Workplace Skills Strategy (which aims to develop to strategy to address future skill requirements); the Lifelong Learning Plan (which allows individuals to withdraw funds from Registered Retirement Savings Plans (RRSPs) on a tax-favoured basis to finance full-time training); the establishment of the Canadian Council on Learning (CCL) to share knowledge and information with the various partners; Older Workers Pilot Projects have been launched to assist displaced older workers in returning to employment or to maintain in employment those at risk of losing their jobs; the Employment Benefits and Support Measures (EBSMs), which give unemployed people assistance with finding and maintaining new employment; and the Opportunities Fund, which gives employment assistance to those unemployed with disabilities.

24. Many other factors, such as a spouse's earnings and retirement decision, health, accumulated wealth and personal preferences also influence retirement decisions.

25. There is also evidence that some RPPs offer strong financial incentives to early retirement (Pescarus and Rivard, 2005). However, RPPs' parameters for past services cannot be modified so that there is very little room for manoeuvre to influence the current generation's behaviour.

26. CPP/QPP benefits are taxable while the GIS is not. This reduces still further the net benefit from delayed retirement.

27. For instance, an interesting approach is the National Programme on Ageing Workers in Finland, which lists measures to improve employment prospects for workers aged 45 and above, including a number of workplace practice initiatives.

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